

Contributions to the knowledge of the *Malachius* group of soft-winged flower beetles (Coleoptera, Malachiidae) of the fauna of Russia and the adjacent countries. Part II

by Sergei E. TSHERNYSHEV

Abstract

2 new species: *Clanoptilus senyilia* sp. n. (Uzbekistan: Hissar, Kyrgyzstan, Alaj) and *C. pseudolutescens* sp. n. (Talysh, Georgia) are described. A rare species, *Clanoptilus tedschenensis* Evers, 1985 is re-described and figured. A new status, *Clanoptilus (Hypoptilus) foveatus* (MEDVEDEV, 1964) stat.n. is proposed. A key to a new *Clanoptilus spinosus* group of species is provided. A new genus, *Clanomalachius* gen.n. is described with the review of species: *Clanomalachius dolini* (WITTMER, 1991) comb.n., *C. insignicornis* (PIC, 1909) comb.n., *C. kiesenwetteri* (SOLSKY, 1881) comb.n., *C. resecatus* (WITTMER, 1979) comb.n., *C. debrosi* (WITTMER, 1979) stat. et comb.n., *C. kühneli* (HICKER, 1959) comb.n. A generic key for the *Malachius*-group is given. Illustrations and distributional maps of species are presented.

Key words: Coleoptera, Malachiidae, *Malachius*-group, *Clanoptilus*, new genus, new species, taxonomy.

Резюме

В работе описываются 2 новых вида: *Clanoptilus senyilia* sp.n. (Узбекистан: Гиссар, Киргизия: Алай) и *C. pseudolutescens* sp.n. (Талыш, Грузия) и новый род – *Clanomalachius*, gen.n., с обзором входящих в него видов: *Clanomalachius dolini* (WITTMER, 1991) comb.n., *C. insignicornis* (PIC, 1909) comb.n., *C. kiesenwetteri* (SOLSKY, 1881) comb.n., *C. resecatus* (WITTMER, 1979) comb.n., *C. debrosi* (WITTMER, 1979) stat. et comb.n., *C. kühneli* (HICKER, 1959) comb.n. Переописан редкий среднеазиатский вид *Clanoptilus tedschenensis* EVERS, 1985, даны рисунки гениталий и специфических структур самца. Предложен новый статус для вида *Clanoptilus (Hypoptilus) foveatus* (L. MEDVEDEV, 1964) stat.n. Дана определительная таблица родов группы *Malachius*, вводится группа видов *Clanoptilus spinosus*, с определительной таблицей видов. Для описываемых таксонов приводятся рисунки и локалитет.

Ключевые слова: Coleoptera, Malachiidae, *Malachius*-группа, *Clanoptilus*, новый род, новые виды, таксономия.

Introduction

The present paper is the second part of a work devoted to *Malachius*-group genera. Nine new species were described, a new status of the genus *Ceratistes* and some new combinations and synonyms were presented in the first part (TSHERNYSHEV, 1998). Some new data on Siberian species were given in Dahurian work (TSHERNYSHEV, 1999).

In this work two new species of the genus *Clanoptilus* are described. A special interest is attached to a group of species with very similar characters. The shape and sculpture of the pronotum and elytra, the coloration and shape of antennae and heads, allows one to regard these species as belonging to a new group, *Clanoptilus spinosus*. Amongst them a special male character developed differently: from a very small depression without an appendage in *C. foveatus* to a deep impression with large and complicated appendage in *C. spinosus*.

The same situation with the development of special characters occurs in a group of species with very similar general characters which allows this group to be regarded as *Malachius* or *Clanoptilus* according to a scheme of EVERS (1985). The very specific shape of the apical tergite in males, being complexly curved and emarginate shows a difference from all *Malachius*-group representatives. For these species, a new genus, *Clanomalachius*, is described.

All materials were borrowed from, and housed in, the following museums and collections:

IBPK – Institute of Biology and Pedology, Kyrgyz National Academy of Sciences, Bishkek;

ISNB – Royal Belgian Institute for Natural Science, Brussels;

NHMB – Naturhistorisches Museum, Basel;

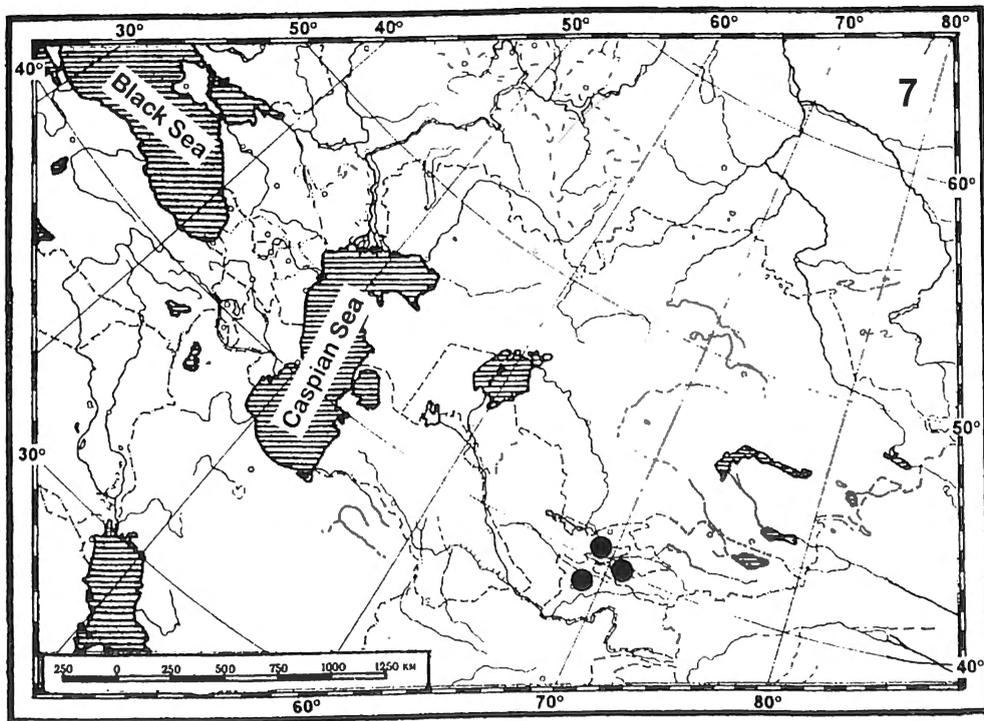
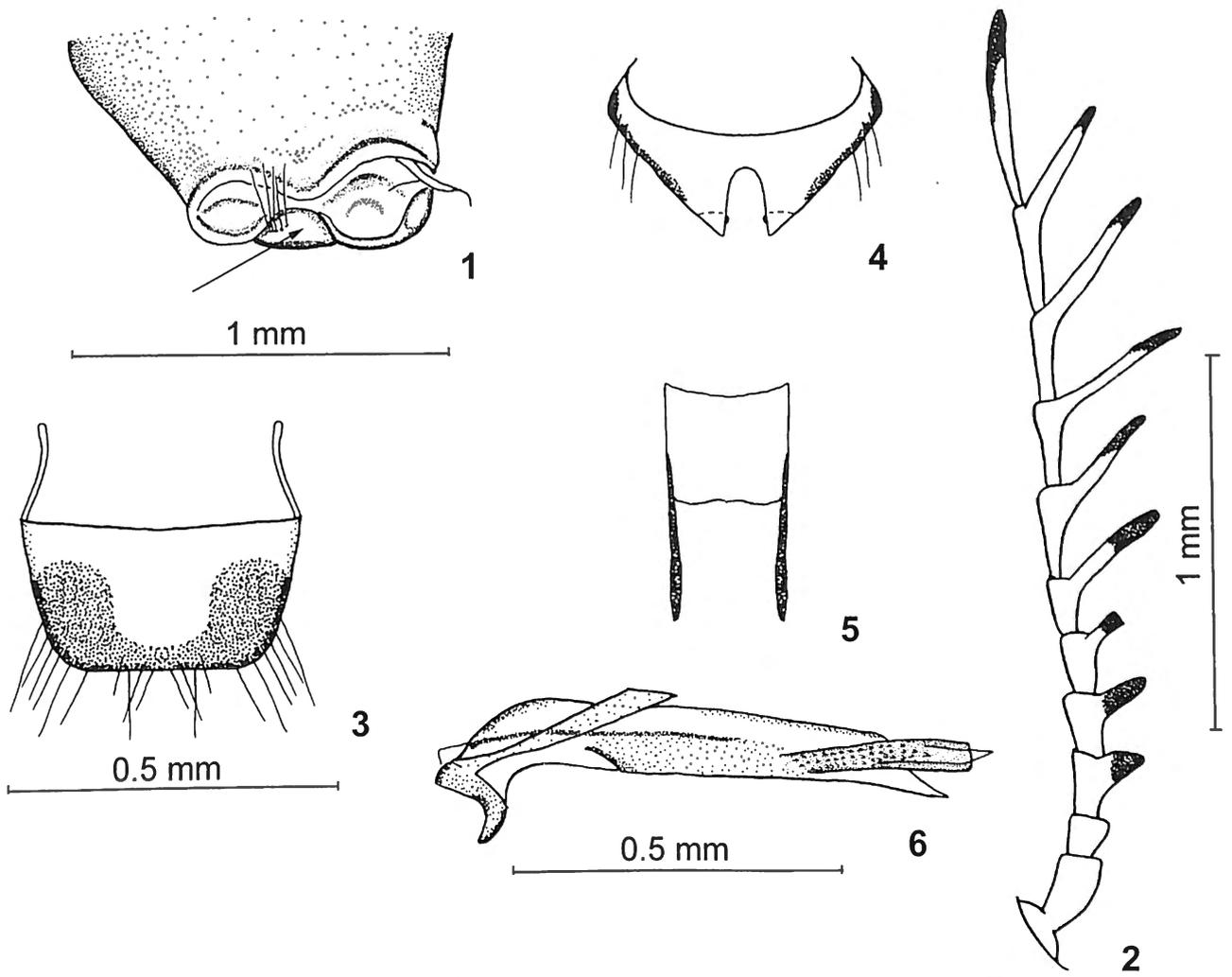
NMP – Narodni Muzeum v Praze;

SZMN – Siberian Zoological Museum, Institute of Animal Systematics and Ecology, Siberian Branch of the Russian Academy of Sciences, Novosibirsk;

ZISP – Zoological Institute, the Russian Academy of Sciences, St. Petersburg;

ZMUM – Zoological Muzeum of the Moscow State University.

For species description some special male structures and genitalia were studied. Under “special male structures” means: elytral depression with special appendage and antenna shape in *Clanoptilus*; head excavation and a shape of 1-4 antenna segments in *Malachius*, head and antenna shape in *Haplomalachius*. Drawings for different species have been prepared using specimens from the following localities: *Clanoptilus tedschenensis* EVERS, 1985 Uzbekistan: Hissar; *C. senyilia* sp. n. (holotype) –



Figs. 1-7 — *Clanoptilus* (s.str.) *tedschenensis* EVERS, 1985, male: 1- apex of left elytra; 2 – left antenna; 3 – apical tergite; 4 – apical sternite; 5 tegmen; 6 – aedeagus, lateral; 7 locality.

Uzbekistan: Hissar; *Clanoptilus strangulatus* (ABEILLE DE PERRIN, 1885) Russia: Astakhan Area, Bogdo Mt.; *C. pseudolutescens* sp. n. (holotype) – Talysh, Georgia; *Clanomalachus dolini* (WITTMER, 1991) (paratype) Kazakhstan: Tugai; *C. insignicornis* (PIC, 1909) Kyrgyzstan: Kazarman; *C. kiesenwetteri* (SOLSKY, 1881) – Tajikistan: Ishkashim; *C. resecatus* (WITTMER, 1979) (holotype) Uzbekistan: Buchara; *C. debrosi* (WITTMER, 1979) (holotype) Uzbekistan: Samarkand; *C. kühneli* (HICKER, 1959) Kyrgyzstan: Kichik-Alaj.

Descriptions

Clanoptilus (s.str.) *tedschenensis* EVERS, 1985 (Figs. 1-7)

Material. S Uzbekistan, Akrobat Pass, near Shurob, h~1450 m, 25.V.1997, leg. D.Milko 1 ♂ (SZMN); female, Uzbekistan, NW Hissar Mts, Igrisu canyon Kok-Kishlak vill., h~1500 m, 38°36'N 66°55'E, 7.VI.1997, leg. D.Milko – 1 ♀ (SZMN).

Description. Male. Head yellow with black occiput 1st and 2nd antennal joints yellow, the remaining ones with dark sinuate outer sides (Fig. 2). Pronotum yellow with longitudinal dark spot in the middle, scutellum dark, elytra completely yellow. Ventral sides yellow with dark margins; legs yellow with dark upper sides of femora, half darkened tibia in anterior and intermediate legs and almost completely dark posterior tibia. Surface with dense light adpressed pubescence. Vesicles, trochanters and thorax mesepimeres yellow. Dark body part lacking metallic luster.

Head little wider than the pronotum, front flat with three slight impressions: one in the middle and one above each eye; genae short and straight, clypeus narrow, transverse, labrum short, transverse; palpi elongate, 2nd joint transversal, less than half the length of the 3rd; apical joint thin, cylindrical, 1.2 times longer than the 1st, with thin stretched apex; surface shining, punctures sparse, microsculpture smooth, pubescence as on pronotum.

Antennae (Fig. 2) long, reaching the posterior third of the elytra, the 1st joint larger than the second, oblongo-clavate, the 2nd joint short, transverse, less than half of the length of the previous joint, intermediate segments 3-10 elongate, with the outer edges sinuate, apical joint cylindrical; evenly covered with short light semierect pubescence.

Pronotum transverse, anterior margin pronounced, posterior almost straight, the depressions just inside the posterior angles distinct; all angles rounded; surface densely punctured, smooth and shining, with sparse long light and adpressed pubescence.

Scutellum very short and transverse, almost hidden by the pronotum, covered with light adpressed pubescence.

Elytra oblong, at the base not wider than the pronotum; shoulders distinct, not protruding; apices with complex impression (Fig. 1) being oval and forming on the lower

side a round protuberance bearing long light erect hairs (arrowed in Fig. 1), appendage very small and thin; surface shining, shagreen, with semierect light pubescence. Legs of moderate size, posterior femora reaching the elytral apices; tibiae thin, rounded, straight; all tarsi 5-segmented, narrow; claw segment the longest, 1.2-1.4 times longer than 1, 2 and 3 taken together; all segments simple, lacking combs or appendages; claws narrow and long, with small dent and pellucid lamellae at the base.

Ventral surface of body densely punctated, with sparse white long adressed hairs; apical sternite transverse, narrowed at apex and strongly emarginate in the middle (Fig. 4); apical tergite strongly transverse, slightly narrowed on sides, straight (Fig. 3), tegumen (Fig. 5) almost pellucid, thin and transverse, with thin short appendages; aedeagus wide and short (Fig. 6), almost pellucid with a visible inner sac arranged with small teeth above and a narrow cornutus inside.

Length (male) 3.0 mm, width (at elytral base) 1.0 mm.

Female. Similar to the male, except as follows: antenna short, reaching the anterior third of elytra, serrate, almost completely yellow; pronotum dark coloration divided onto two very small spots; scutellum yellow; elytra more strongly widened posteriorly with simple apices; tibia of all legs almost completely yellow.

Length (female) 2.7 mm, width (at elytral base) 0.85 mm.

Distribution. Mountain part of Uzbekistan (Fig. 7).

Remarks. This species is quite specific but was purely described and has not been drawn by the author (EVERS, 1985), the reason for the redecription of this species.

Clanoptilus (*Hypoptilus*) *lutescens* (KRAUSS, 1902) (Figs. 8-15)

Malachius viridis ab. *lutescens* KRAUSS, 1902: 22, 31.

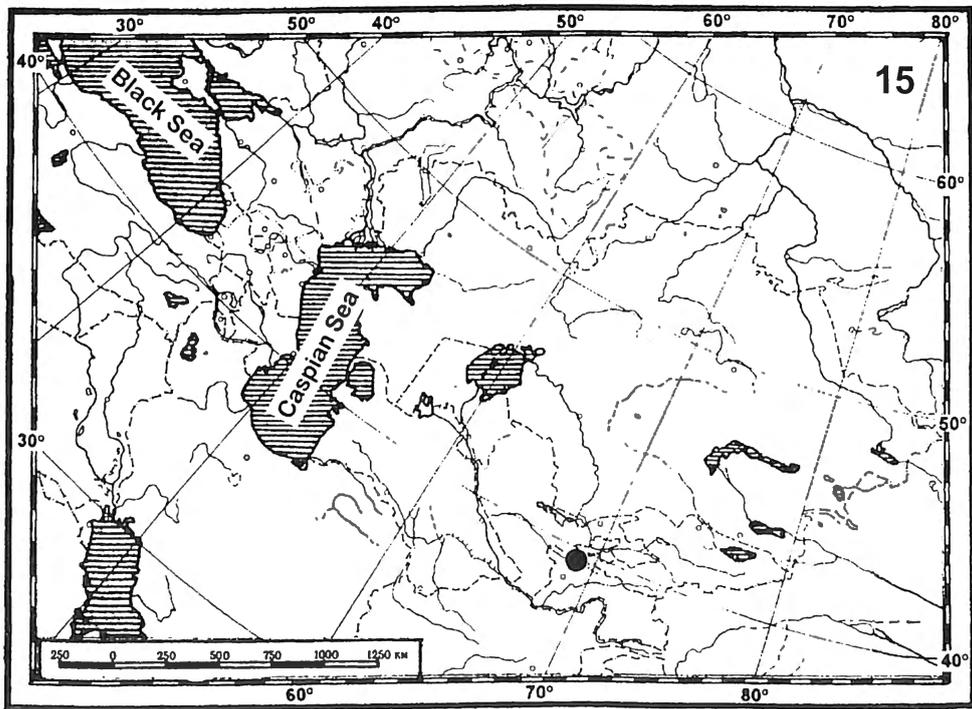
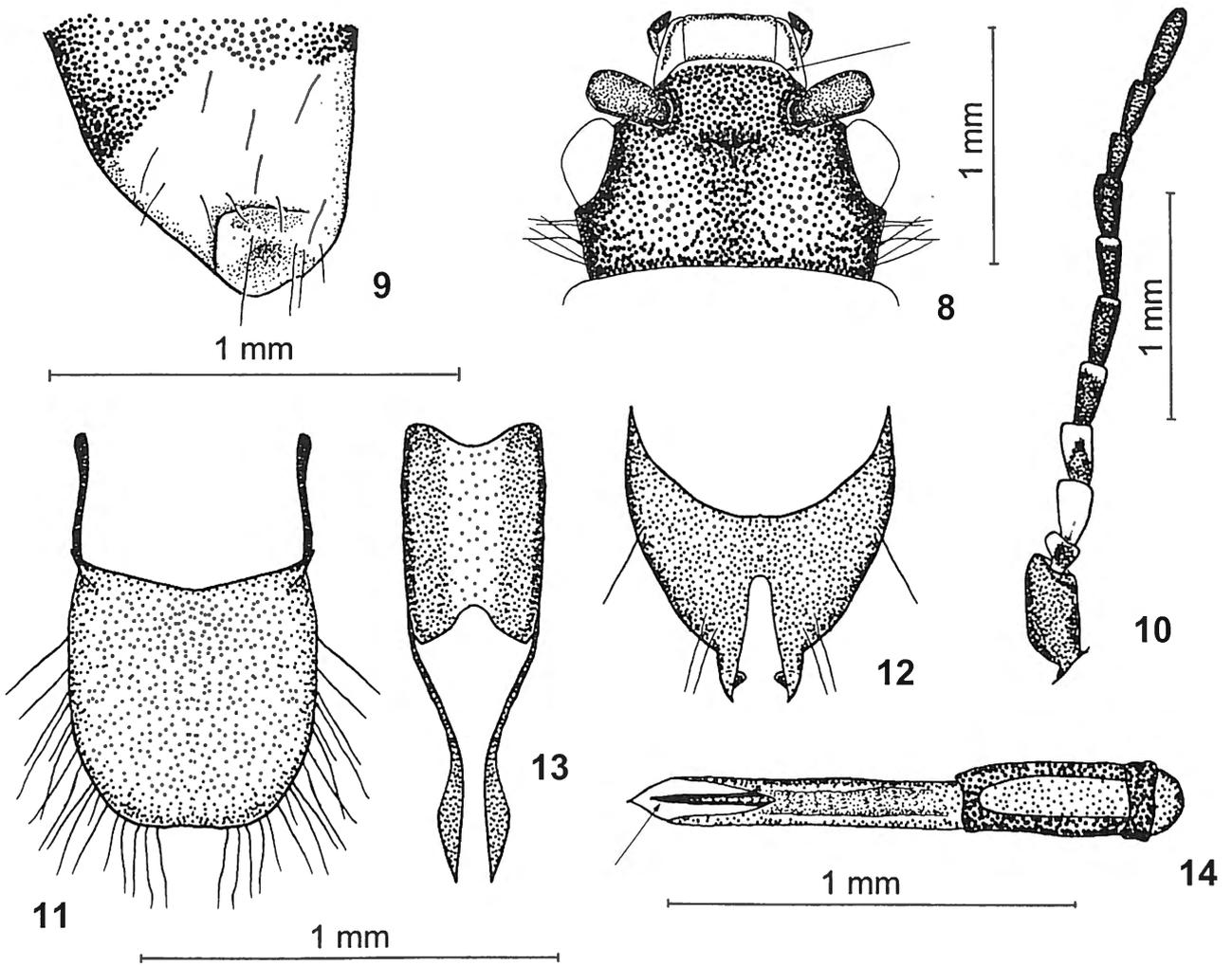
Malachius viridis ab. *lutescens* KRAUSS, 1902 – Greiner, 1937: 118.

Cordylepherus lutescens (KRAUSS, 1902) – Evers, 1985: 7.

Clanoptilus (*Hypoptilus*) *lutescens* (KRAUSS, 1902) TSHERNYSHEV, 1998: 139.

Material. Uzbekistan, Zeravshan Mts., h~1200 m, 21.V.1990, Em. Strejcová leg. – 1 male (SZMN), river Zeravshan valley, (pr. Samarkand), V.1990, Em. Strejcová leg. – 1 female (SZMN). Specimens from these localities are deposited also in the National Museum, Prague and Naturhistorisches Museum, Basel.

Description. Holotype, male. Head (Fig. 8) black-green with metallic luster, stomal part and basal segments of palpi yellow. Antennae dark with 2nd-4th yellow in part, 5th-7th with yellow apices (Fig. 10). Pronotum, scutellum and almost completely elytra black-green with metallic luster; elytral tips yellow. Legs almost dark with tarsi and tibiae somewhat lighter in anterior and



Figs. 8-15 — *Clanoptilus (H.) lutescens* (KRAUSS, 1902), male: 8 head dorsally; 9 – apex of left elytra; 10 – right antenna; 11 – apical tergite; 12 – apical sternite; 13 tegmen; 14 – aedeagus, dorsal; 15 locality.

intermediate legs, knees yellow. Vesicles and thoracal mesepimeres yellow.

Head (Fig. 8) of the same width as pronotum, depressed in the middle with distal part swollen only near the antenna (arrowed in Fig. 8). Genae straight, clypeus wide, transverse, bearing a long light hairs. Palpi elongate, its 1st segment almost of the same length as the 3rd, and twice bigger than the 2nd. Apical joint narrowed and cut at the tip. Labrum long, narrow and transverse, with light long hairs ahead. Surface densely punctured, microsculpture distinct, forehead with double pubescence: light adpressed fine hairs and sparse erected black setae. The row of black setae are set behind the eyes. Antennae (Fig. 10) short, reaching the base of elytra; 1st joint swollen, rectangular, 2nd the smallest, 4 times shorter than the previous, the 3rd is 2.5 times bigger than the 2nd and 1.2 times longer than the 4th, remaining segments almost equal in size, cylindrical; evenly covered with short light adpressed pubescence, only the basal segments bear a few erect black setae.

Pronotum almost equilateral, with produced anterior and posterior margins; all the angles rounded. Impressions near the posterior angles distinct. Surface with minute and dense punctures, microsculpture distinct, pubescence as on forehead.

Scutellum short and transverse, shining, bearing short adpressed hairs.

Elytra parallel, not wider than pronotum at the base, evenly expanded posteriorly. Shoulders distinct, slightly protruding. Elytral tips slightly impressed (Fig 9). Surface granulate, covered with fine light adpressed hairs and black erect setae.

Legs of a moderate size, posterior femora almost reaching the elytral tips. Tibiae thin, rounded, straight, posterior slightly curved inside. All tarsi 5-segmented, narrow; apical joint is the longest, its length being equal to the total length of the 1st+2nd in anterior legs, 1.2 times shorter in intermediate and 1.1 times longer than the 1st joint in posterior legs. Claws narrow, with pellucid lamellae at the base.

Ventral side of thorax with light hairs, abdomen with short adpressed and sparse pubescence. Apical sternite (Fig. 12) strongly elongate, emarginate in the middle. Apical tergite (Fig. 11) longitudinal, with rounded sides. Phallus (Fig. 14) simple, with the number of small teeth on the inner sac; cornutus straight, rounded and thin (arrowed in Fig. 14). Tegumen (Fig. 13) longitudinal, 2.2 times longer than wide, inner side emarginate; thin appendages widely flattened at the apices, appendage-base length ratio is 1.1.

Length (male) 4.3 mm, width (at elytral base) 1.4 mm. Female. Similar to male, except as follows. Antennae narrower, almost completely dark. Elytra more strongly widened posteriorly. Elytral apices simple, with wide yellow spot.

Length (female) 5.1 mm, width (at elytral base) 1.7 mm.

Distribution. In the first part of the article (TSHERNYSHEV,

1998) these specimens were recorded for Tajikistan. Type locality – Buchara. (Fig. 15).

Diagnosis. This species is close to *Cordylepherus viridis* and differs by distinctly emarginate elytra with yellow apices, short antenna, smaller 1st antennal joint.

Clanoptilus (Hypoptilus) pseudolutescens

TSHERNYSHEV, sp. n.

(Figs. 16-23)

Description. Holotype, male. Head (Fig. 16) black-green with metallic luster, stomal part, palpi yellow. 1st, 9th, 10th and 11th antennal joints dark, the remaining yellow with dark basis (Fig. 17). Pronotum, scutellum and almost completely elytra black-green with metallic luster; elytral tips orange. Legs dark, only anterior tarsi somewhat lighter, knees yellow. Vesicles and thoracal mesepimeres yellow.

Head (Fig. 16) of the same width as pronotum, distinctly depressed in the middle with swollen distal part (arrowed in Fig. 16). Genae straight, clypeus wide, transverse, bearing a long light hairs. Palpi elongate, its 1st segment almost of the same length as the 3rd, and twice bigger than the 2nd. Apical joint narrowed, stretched to the apex and cut at the tip. Labrum narrow, transverse, with light long hairs. Surface densely punctured, microsculpture visible, forehead with double pubescence: light adpressed hairs and sparse erect black setae. The row of black setae are set behind the eyes. Antennae (Fig. 17) short, reaching the base of elytra; 1st joint swollen, rectangular, 2nd the smallest, 3 times shorter than the previous, the 3rd twice bigger than the 2nd and 1.2 times longer than the 4th, remaining segments almost equal in size, slightly serrate; evenly covered with short light adpressed pubescence.

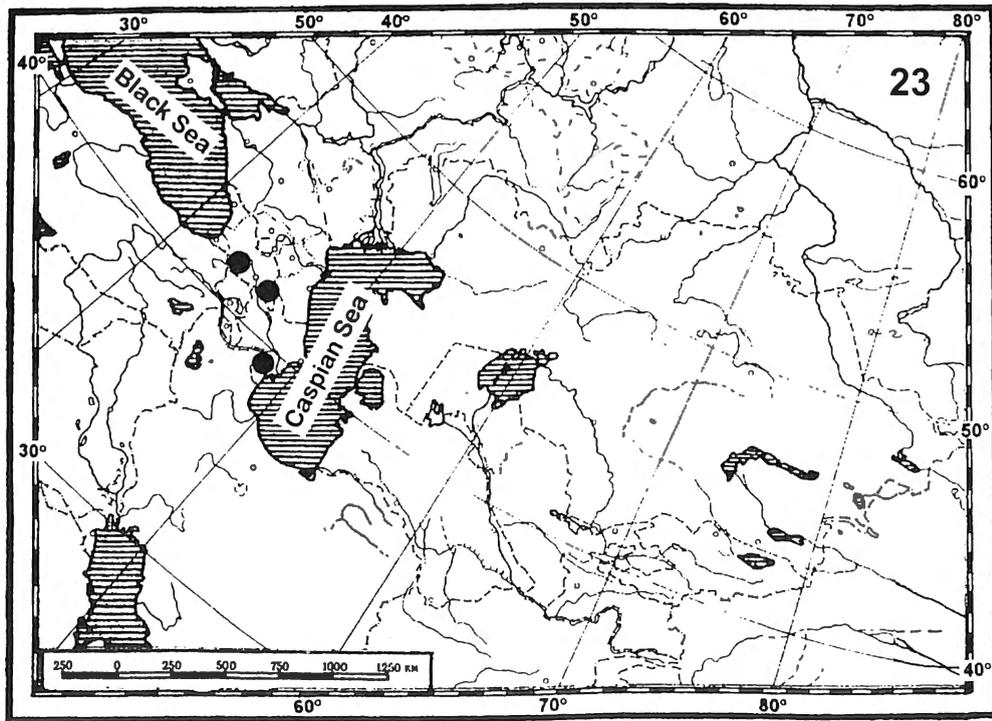
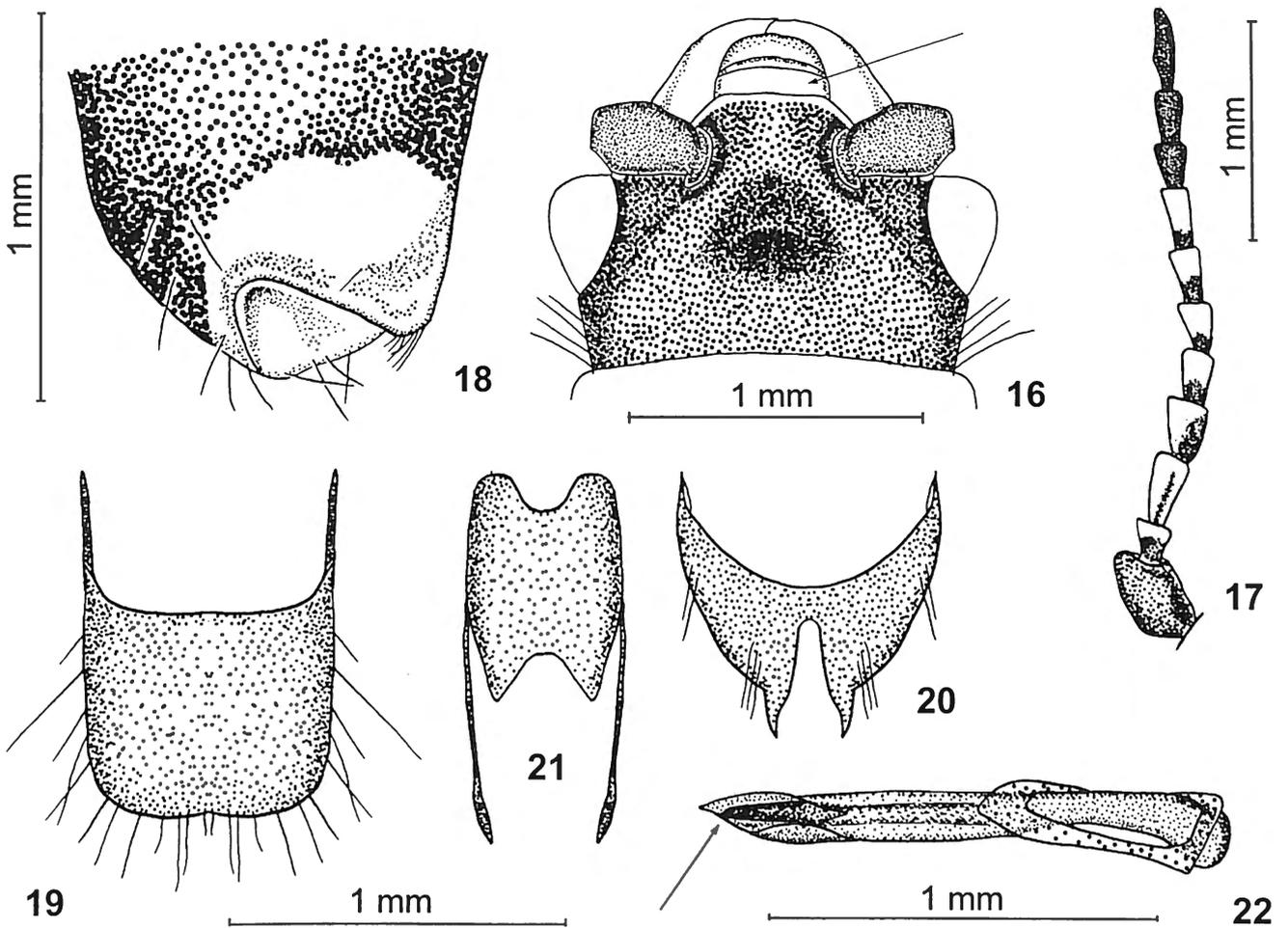
Pronotum almost equilateral, with produced anterior and straight posterior margins; all the angles rounded. Depressions at the posterior angles distinct. Surface with minute and dense punctures, microsculpture smooth, pubescence as on forehead.

Scutellum short and transverse, shining, bearing short adpressed hairs.

Elytra parallel, not wider than pronotum at the base, slightly expanded posteriorly. Shoulders distinct, slightly protruding. Elytral tips strongly impressed (Fig 18). Surface finely granulate, covered with fine light adpressed hairs and black erect setae.

Legs of a moderate size, posterior femora almost reaching the elytral tips. Tibiae thin, rounded, straight, posterior slightly curved inside. All tarsi 5-segmented, narrow; apical joint is the longest, its length being equal to of 1st+2nd total length of anterior legs, somewhat shorter in intermediate and almost of the same length as 1st joint in posterior legs. Claws narrow, short, with small lamellae at the base.

Ventral side of thorax with long light hairs, abdomen with short adpressed and sparse pubescence. Apical ster-



Figs. 16-23 — *Clanoptilus (H.) pseudolutescens* TSHERNYSHEV, sp. n., male: 16 head dorsally; 17 – right antenna; 18 – apex of left elytra; 19 – apical tergite; 20 – apical sternite; 21 tegmen; 22 – aedeagus, dorsal; 23 locality.

nite (Fig. 20) longitudinal, emarginate in the middle. Apical tergite (Fig. 19) rectangular, longitudinal, with slightly emarginate anterior side. Phallus (Figs. 22) simple, with the number of small teeth on the inner sac; cornutus straight, rounded and wide (arrowed in Fig. 22). Tegumen (Fig. 21) longitudinal, 2.2 times longer than wide, inner side twice emarginate; thin appendages flattened at the apices, appendage-base length ratio is 1.1. Length (male) 5.1 mm, width (at elytral base) 1.8 mm.

Female. Similar to male, except as follows. Antennae narrower and shorter, not reaching the base of elytra. Elytra more strongly widened posteriorly. Elytral apices simple, with very small round orange spot.

Length (female) 5.3 mm, width (at elytral base) 1.9 mm.

Distribution. As shown under Material only (Fig. 23). Probably it is limited in range by Caucasus region.

Holotype, ♂, Caucasus, Talysh, Lerik district, Gosmaljan env., 11.VI.1988, S.Kasantsev leg. (SZMN), paratypes: idem – 1 ♂ (SZMN); Caucasus, Talysh, Lenkoran district, Avrora env., 13.VI.1988, S.Kasantsev leg. – ♀ (SZMN); Caucasus, Georgia, Shiraki near Tsiteli-Tskaro, 7.V.1983, W.Dolin 5 ♂♂ (NHMB), 1 ♂ (ISNB); Georgia, Vale, ~ 1700–2100 m, 23.VI.1978, W.Dolin 3 ♂♂ 2 ♀♀ (NHMB); 1 ♂ 1 ♀ (ISNB); 1 ♂ 1 ♀ (SZMN).

Diagnosis. It can be distinguished from the true *C. lutescens* by long antenna, reaching the anterior fourth of elytra, its lighter coloration; strongly impressed elytral apices colored in orange; a shape of swollen part in head (arrowed in Figs. 8, 16) and wide inner structure of aedeagus (arrowed in Figs. 14, 22).

Clanoptilus (Hypoptilus) foveatus

(L.MEDVEDEV, 1964) stat. n.

Malachius foveatus L.MEDVEDEV, 1964: 156.

Clanoptilus strangulatus ssp. *foveatus* MEDVEDEV, EVERS, 1985: 39–40

Material. Kazakhstan, 10 km N of Zharkol Lake, 10.VI.1957 holotype, ♂ (ZISP), paratypes: 2 ♀♀ (ZISP); E-Kazakhstan, Zaisan District, Rozhkovo vill., sweeping, 15.VI.1986, V.Shilenkov leg. 1 ♂ 1 ♀ (SZMN); Mongolia, South-Gobi Aimak, Toiryrm Ravine, 68 km NE of Tsagan-Bogdo Mt., desert with Tamarix and Calligonum, 23.VI.1973, G.Medvedev leg. 1 ♂ (ZISP); Russia, Volgograd Area, 1–5 km E of Pallasovka vill., dry steppe with Euphorbia and Tanacetum, 25.V.1996, V.Dubatoval leg. – 1 ♂ (SZMN).

Remarks. The special male structures of new species are very well shown in MEDVEDEV's description (1964): "elytra with distinct, but not deep impression... appendages lacking". EVERS (1985) decided that this species is only a variation of *C. strangulatus*, a usual resident of Central Asian steppes, but he had included the phrase: "... Interessant ist aber die Tatsache, daß die Excitatoren

bei *Malachius foveatus* MEDVEDEV keine Anhänge besitzen". The investigation of a serial material shows, that small size is a strong, but not variable character in this species. All males have no appendages in slight depressions of elytral apices. A differences also can be found in aedeagus inner structure. These facts seem to be enough to reestablish this species as a good one. The species was previously known only from Kazakhstan, this is a first record for Russia and Mongolia.

Clanoptilus (s.str.)

(ABEILLE DE PERRIN, 1885)

(Figs. 24–32)

Cyrtosus strangulatus ABEILLE DE PERRIN, Rev. d'Ent. IV, 1885, p. 143

Malachius strangulatus (ABEILLE DE PERRIN, 1885) GREINER, 1937:116.

Clanoptilus strangulatus (ABEILLE DE PERRIN, 1885) EVERS, 1985: 36.

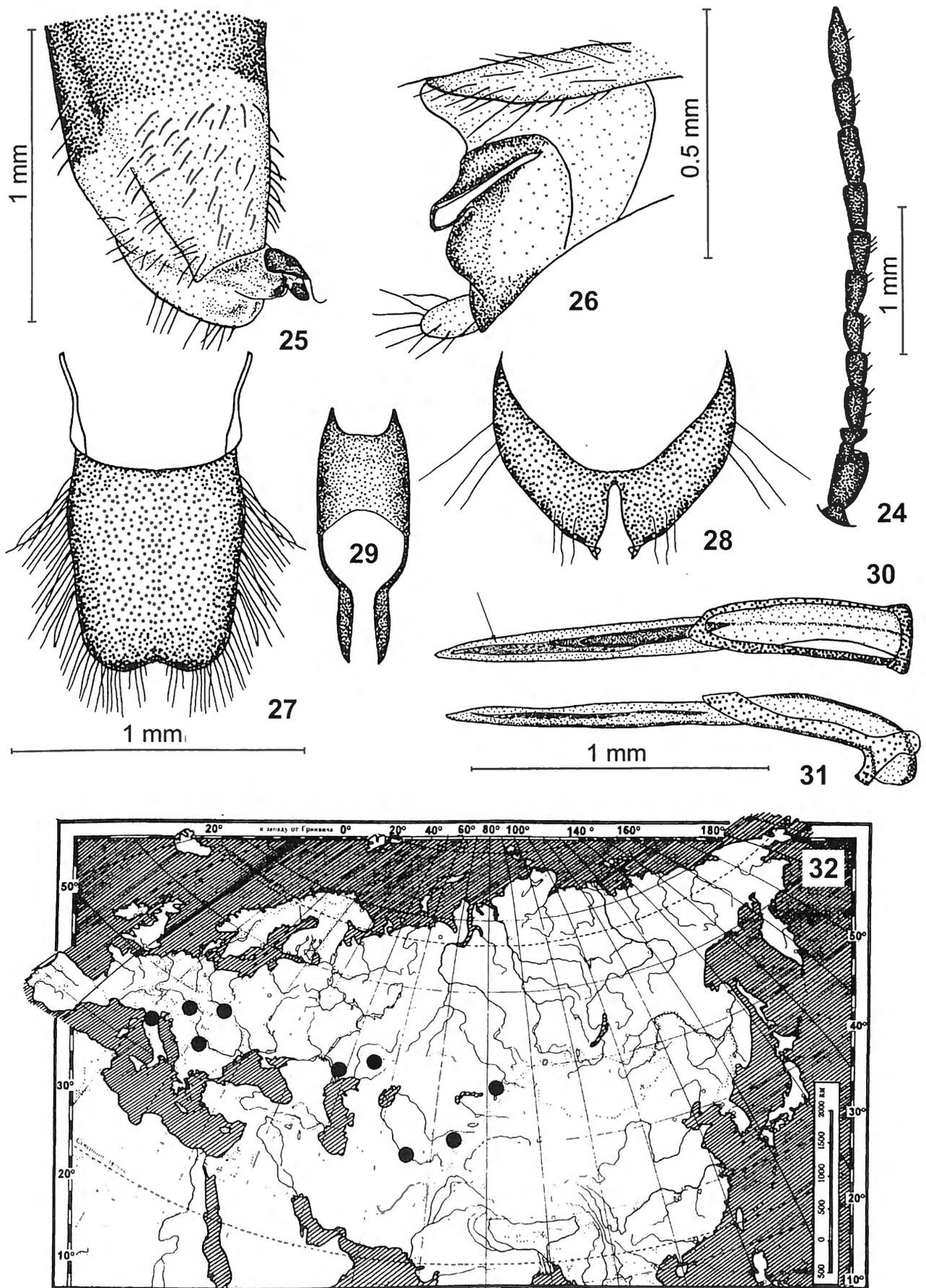
= *Malachius vulneratus* ABEILLE DE PERRIN, 1891 EVERS, 1985: 39–40.

= *Malachius pseudospinosus* L.MEDVEDEV, 1964 EVERS, 1985: 39–40.

Material. Hungary, Donau-Au, date – ?, – 1 ♂ (NHMB), Ukraine, Azov Sea, Berdiansk, 9.VI.1981, B.Pavlov-Ver-evkin leg. 1 ♂ (SZMN); Ukraine, Crimea, Golaia Pristan', 3.V.1995, – S,Vasilenko leg. 1 ♂ (SZMN); Russia, Krasnodar Area, Ubinskaia Station, Papai Mt., ~1700 m, 30.4.1989, A.Solodovnikov leg. 1 ♂ (SZMN); Russia, Astrakhan Area, steppe near Nizhiy Baskunchak vill. and Bogdo Mt., 30.V.1996, V.Dubatoval leg. 1 ♂ 2 ♀♀ (SZMN); E-Kazakhstan, S Bank of Zaisan Lake, 5 km ESE of Priozernoe, 11.VI.1997, R.Dudko & V.Zinchenko leg. 2 ♂♂, 1 ♀ (SZMN); E-Kazakhstan, E Prizaisanje, 20 km NE of Karatal, sands of Bozalgyrkume, 12–13.VI.1997, R.Dudko & V.Zinchenko leg. 1 ♂ (SZMN); Kyrgyzstan, N slope of Kyrgyzsky Mt. Range, Valley of Karabalta Riv., ~ 1800 m, 30.V.1995, D.Milko leg. 2 ♂♂ (SZMN).

Description. Holotype, male. Head black-green with metallic luster, clypeus and mandibles yellow, antennae black. Pronotum and almost completely elytra black-green with metallic luster, only the elytral tips red. Scutellum and legs black with metallic luster. Ventral side of thorax, coxae and trochanters black, borders of sternites and thorax mesepimeres yellow. Vesicles red.

Head not wider than the pronotum, with thin light adpressed pubescence and bunches of erect black hairs on the temples; forehead slightly impressed between antennae and sparsely punctuated with distinct microsculpture among punctures; labrum transverse, 1.3 times longer than the clypeus, rounded anteriorly and bearing white sparse long hairs; genae short, straight; eyes of the moderate size, round, with slightly produced anterior side. Palpi elongate, the 1st joint is 1.3 times longer than



Figs. 24-32 — *Clanoptilus* (s.str.) *strangulatus* (AB.-PERR., 1885), male: 24 – right antenna; 25 – apex of left elytra; 26 appendage in elytral apex; 27 – apical tergite; 28 – apical sternite; 29 tegmen; 30 – aedeagus, dorsal; 31 aedeagus, lateral; 32 – locality.

the 2nd, being the same length as the 3rd, apical joint narrowed at apex; surface shining with light semierect pubescence. Antennae long, reaching the half way along the elytra; the 1st segment clavate, not swollen, 3 times longer than the 2nd and about 1.5 times longer than the remaining, 3rd-5th segments of the equal sizes, the others a little longer, all segments, excepting 1st and 2nd, cylindrical (Fig. 24); covered with thin light adpressed pubescence with sparse erect hairs amongst them.

Pronotum almost equilateral, somewhat wider than long, anterior margin strongly pronounced, posterior straight, all angles rounded, posterior with distinct impressions; surface densely punctate with distinct microsculpture and double pubescence: light adpressed and black erect.

Scutellum transverse-rectangular, small, distinctly depressed in the middle; anterior side straight, surface shining, densely punctured and pubescent.

Elytra oblong, parallel, very slightly widened posteriorly; shoulders distinct; apices evenly rounded and strongly impressed (Fig. 25) with double lamellate appendage inside (Fig. 26), its vertical lamella rounded, horizontal very small bearing a bunch of short white curved hairs; the upper side of each impression angular pronounced, the lower side rounded, with stretched angular apex; surface moderately shining, finely granulate, with fine, light and short adpressed pubescence and dense dark and very strong erect setae.

Legs long and thin, posterior femora not reaching the elytral apices, covered with short light adpressed hairs; claw segments bear long black setae anteriorly. Tibiae thin, slightly expanded anteriorly, rounded. All tarsi 5-segmented, narrow; 4th segment is smallest, being twice shorter than the apical which is largest, being 1.2-1.3 times longer than the 1st. Claws thin, with oval pellucid lamellae at the base.

Apical sternite (Fig. 28) narrow, transversal, deeply emarginate in the middle; apical tergite (Fig. 27) elongate, rectangular, 1.2 times longer than wide, anterior side very slightly emarginate, covered with dark long hairs. Phallus (Figs. 30, 31) simple, thin and long, with small teeth on the inner sack, the only medial cornutus narrow (arrowed in Fig. 30); apex straight. Tegumen longitudinal, 2 times longer than wide, with moderate emargination in the inner side, with long thin appendages, distinctly flattened and widened at the tips (Fig. 29).

Length (male) 5.5-5.9 mm, width (at elytral base) 1.6-1.7 mm.

Female. Similar to male, except as follows. Antennae narrower. Elytra more strongly widened posteriorly. Elytral apices simple, with large round red spot.

Length (female) 5.8 mm, width (at elytral base) 1.8 mm.

Distribution. Ranged from Europe (Germany, Italy, Hungary, Ukraine, Russia) to Central Asia (Kazakhstan, Uzbekistan, Kyrgyzstan) (Fig. 32).

Diagnosis. All representatives of the *spinosus*-group dif-

fer by the rough black pubescence of surface, bright red elytral apices and a shape of elytral appendage (Fig. 26) attached on a round vertical plate and being small above with short hairs distally.

Clanoptilus (s. str.) *senyilia* TSHERNYSHEV, sp. n.
(Figs. 33-41)

Description. Holotype, male. Head black-green with metallic luster, clypeus, mandibles and anterior part of labrum yellow, antennae black. Pronotum and elytra almost completely black-green with metallic luster, only the elytral tips yellow. Scutellum and legs black with slight metallic luster. Ventral side of thorax, coxae and trochanters black, borders of sternites, vesicles and thorax mesepimers yellow.

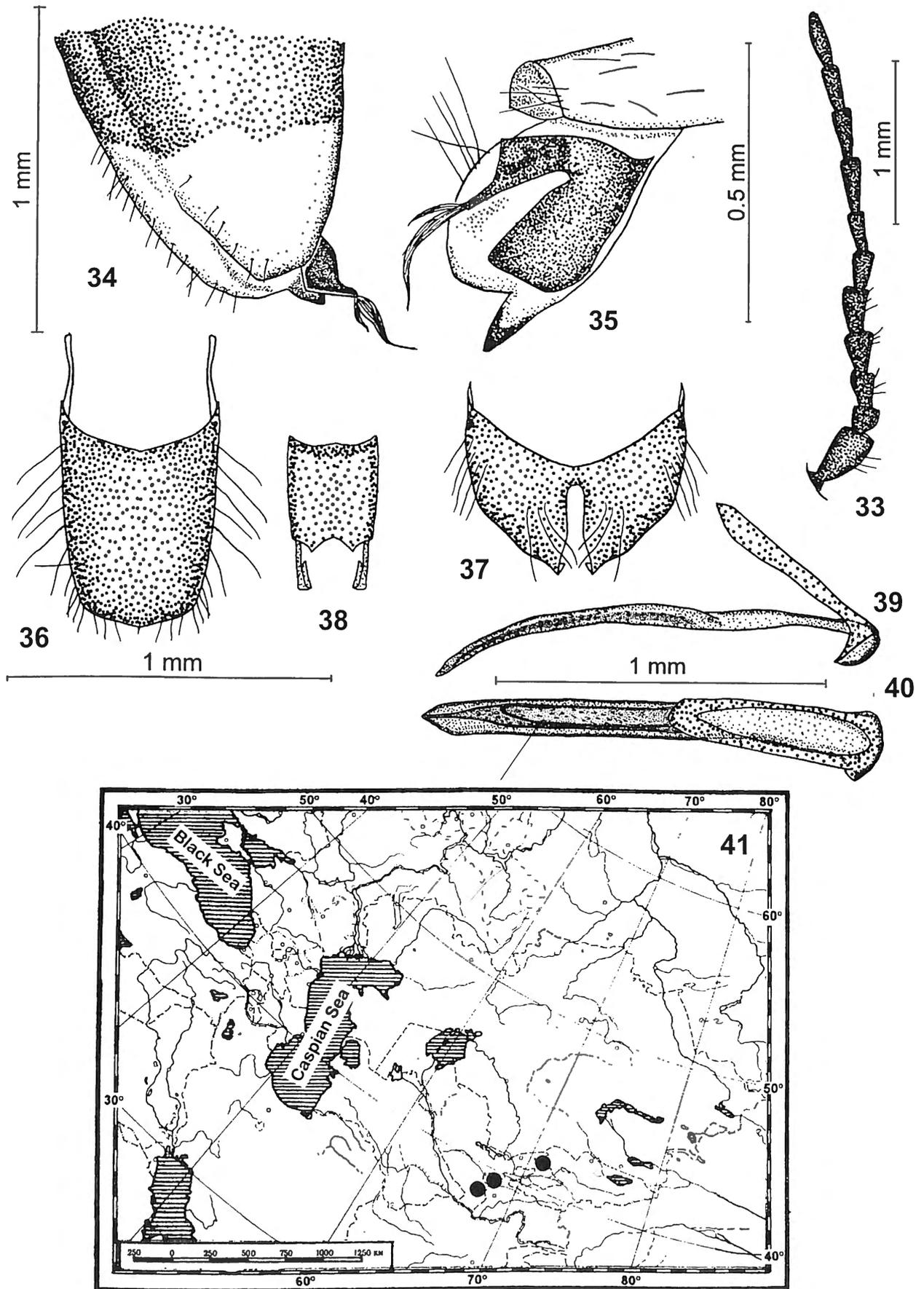
Head narrow, with slight interocular depression, covered with thin light adpressed pubescence, the row of erect black hairs is on the temples; forehead sparsely punctuated, microsculpture distinct; labrum short, transversal, twice longer than the clypeus, rounded anteriorly and bearing white long erect hairs; genae short, straight; eyes protrudent, round. Palpi elongate, the 1st segment is 1.5 times longer than the 2nd, the 2nd segment is twice shorter than the 3rd, apical segment narrow, slightly stretched at apex; surface shining with light semierect long hairs. Antennae (Fig. 33) long, reaching the middle of elytra; the 1st segment clavate, not swollen, 3.5 times longer than the 2nd, the 3rd is twice longer than the previous, of the same length and shape as 4th, 5th or 6th, somewhat widened at apex, being triangular-shape, the remaining, segments elongate, almost cylindrical, very slightly widened at apex excepting the apical, which is pointed. All segments covered with thin light and short adpressed pubescence and sparse light erect hairs.

Pronotum almost equilateral, 1.2 times wider than long, anterior margin arcuate, posterior straight, all angles rounded, with distinct depressions just at the posterior angles; surface densely punctate, microsculpture distinct, covered with double pubescence: light short and adpressed and sparse black erect.

Scutellum transverse-rectangular, small, almost completely hidden by the pronotum, slightly depressed in the middle; its surface shining, densely punctate and pubescent with light hairs.

Elytra subparallel, strongly widened posteriorly; shoulders distinct; apices evenly rounded and strongly depressed (Fig. 34); lamellate appendage consisting of two parts, horizontal, being rectangular and bearing a bunch of black long straight hairs, and a vertical which is pointed on a distal side (Fig. 35); the upper side of each evenly rounded, slightly produced, the lower side rounded, with stretched angular apex; surface shining, shagreen, covered with fine, light and adpressed pubescence and sparse semierect dark strong setae.

Legs long and thin, posterior femora not reaching the elytral apices, covered with short light adpressed hairs; claw segments bear long black setae on the upper side.



Figs. 33-41 — *Clanoptilus* (s.str.) *senylia* TSHERNYSHEV, **sp. n.**, male: 33 – right antenna; 34 – apex of left elytra; 35 appendage in elytral apex; 36 – apical tergite; 37 – apical sternite; 38 tegmen; 39 aedeagus, lateral; 40 – aedeagus, dorsal; 41 – locality.

Tibiae thin, slightly expanded anteriorly, rounded. All tarsi 5-segmented, narrow; 4th segment is smallest, being twice short as the apical joint, which is largest and being 1.2-1.3 times longer than the 1st, 2nd or 3rd segments. Claws narrow, sharp, with distinct oval pellucid lamellae at the base.

Apical sternite (Fig. 37) transversal, wide, with deep narrow emargination in the middle; apical tergite (Fig. 36) rectangular, 1.3 times longer than wide, anterior side evenly rounded, covered with sparse black hairs. Phallus (Figs. 39, 40) simple, slightly curved ventrally, with small teeth on the inner sac, the medial cornutus big and wide (arrowed in Fig. 40); apex of aedeagus wide, pointed. Tegumen longitudinal, 1.9 times longer than wide, emarginate in the middle, with long thin appendages, slightly flattened and widened at the tips (Fig. 38).

Length (holotype) 5.0 mm, width (at elytral base) 1.4 mm.

Female. Similar to male, except as follows. Antennae narrower. Interocular depression feeble. Elytral apices simple, very slightly depressed, with small yellow spot.

Length (female) 5.1 mm, width (at elytral base) 1.4 mm.

Distribution. Holotypus: ♂ (SZMN), Uzbekistan, NW Hissar Mts., Igrisu canyon, Kok-Kishlak vill., h~1500 m, 38°36'N66°55'E, 7.VI.1997, D.Milko leg.; allotype – ♀, Kyrgyzstan, Chatkal Mt. Range, N slope, Ters riverside, h~1600 m, 41°37'N 70°41'E, 2.VII.1996, D.Milko leg. (SZMN); paratypes: S-Uzbekistan, Hissar Mt. Range, Turapsaj Ravine, 4 km SSW Sangardak vill., h~1550 m, 28°32'N 67°31'E, 3.VI.1997, D.Milko leg. – ♂ (IBPK), Aulie-Ata, 30.V.1926, Coll. -?, ♂ (ZMUM); S slope of Hissar Mt. Range, Anzob Pass, h~3583 m, 3.VII.1947, Kirichenko – ♂ (ZISP); S- Kyrgyzstan, Alaj Mt. Range, Kyzyl-Eshme Ravine, ~ 2900 m, 39°37'N72°17'E, 20.VII.1998, D.Milko leg. – 1 ♂, 1 ♀ (ISNB), 1 ♀ (SZMN); S- Kyrgyzstan, S slope of Alaj Mt. Range, Ok-Suu Ravine, 6 km NWW Kara-Tejit vill., ~2600 m, 39°31'N71°41'E, 17.VII.1998, D.Milko leg. – 1 ♂ (SZMN).

Diagnosis. *C. strangulatus* differs from the closest related species by fine black pubescence of its surface, yellow coloration of elytral apices and the shape of elytral appendage (Fig. 35) based on a rectangular vertical plate and being large, rectangular, bearing bunches of long hairs anteriorly.

Key to *Clanoptilus spinosus*-group species (males only)

1. Elytral tips of male slightly depressed, appendages lacking *foveatus* (L. MEDVEDEV, 1964)
- Elytral tips of male strongly impressed, appendages distinct 2
2. Black pubescence of surface sparse, elytral tips yellow *senyilia* sp. n.
- Black pubescence of surface dense, elytral tips red 3
3. Appendage in lower side of elytral impression with strong black horn (male only)
- *spinosus* (ERICHSON, 1840)

- Appendage in lower side of elytral impression lacking horn (male only) . . . *strangulatus* (AB.-PERR., 1885)

Clanomalachius TSHERNYSHEV, gen. n.

Type species: *Malachius resecatu* WITTMER, 1979

Definition. Quite big malachiid beetles, ranging from 5 to 8 mm in length. Surface with double coloration: almost black-green with metallic luster and partly (legs, elytral apices, stomal part etc.) orange-yellow; covered with black erected and light adpressed hairs. Antenna 11-segmented (Fig. 61), flabellate in male and slightly toothed in female, long, reaching a first quarter of the elytra; the 1st joint swollen, cylindrical, ventrally depressed. Remaining segments with the outer edges extremely stretched, except the apical, being parallel. Interocular plate on head between antenna slightly elevate. Pronotum with orange-yellow margins on sides. Thorax mesepimers and anterior trochanters yellow. First tarsi 5-segmented, covered with very long and fine white hairs, all segments simple. Elytral apices with depressions which are small (as in *C. dolini*) or strong (as in *C. debrosi*). Appendage in the depression lacking in *C. dolini*, very small in *C. insignicornis* and *C. kiesenwetteri* and quite big in remaining species. Apical tergite strongly emarginate (Fig. 64) and being specific. Male genitalia composed of the following structures: phallus tegumen (paramers) fixed to the base of aedeagus and forming its cover (Figs. 67); the shape of aedeagus is usual for the same structure in the other representatives of the tribe Malachiini, inner sac with a number of small teeth, big spines lacking.

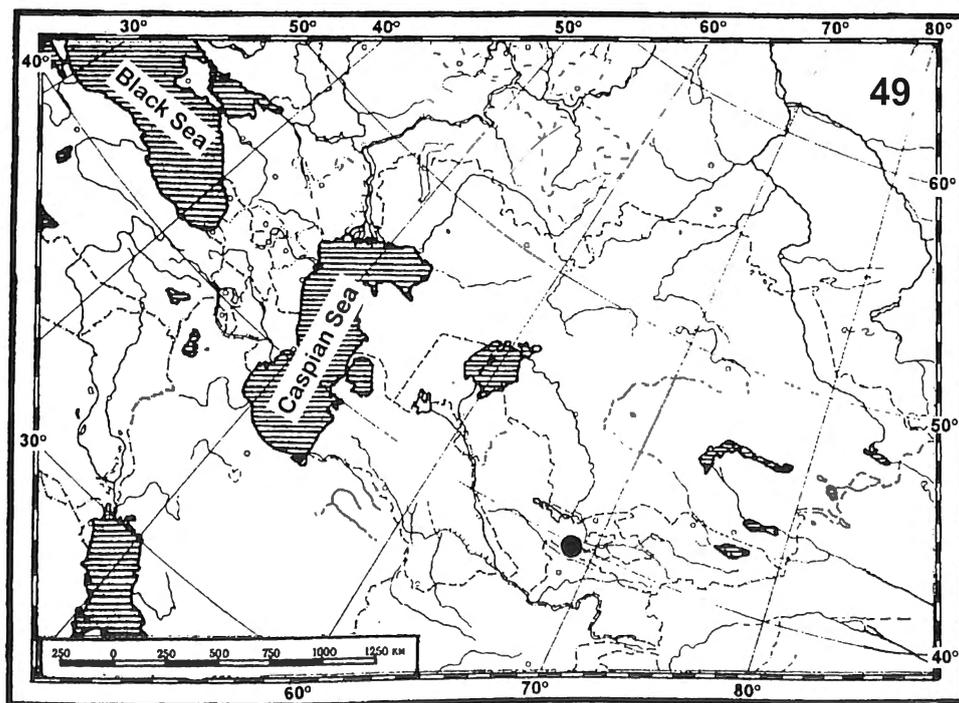
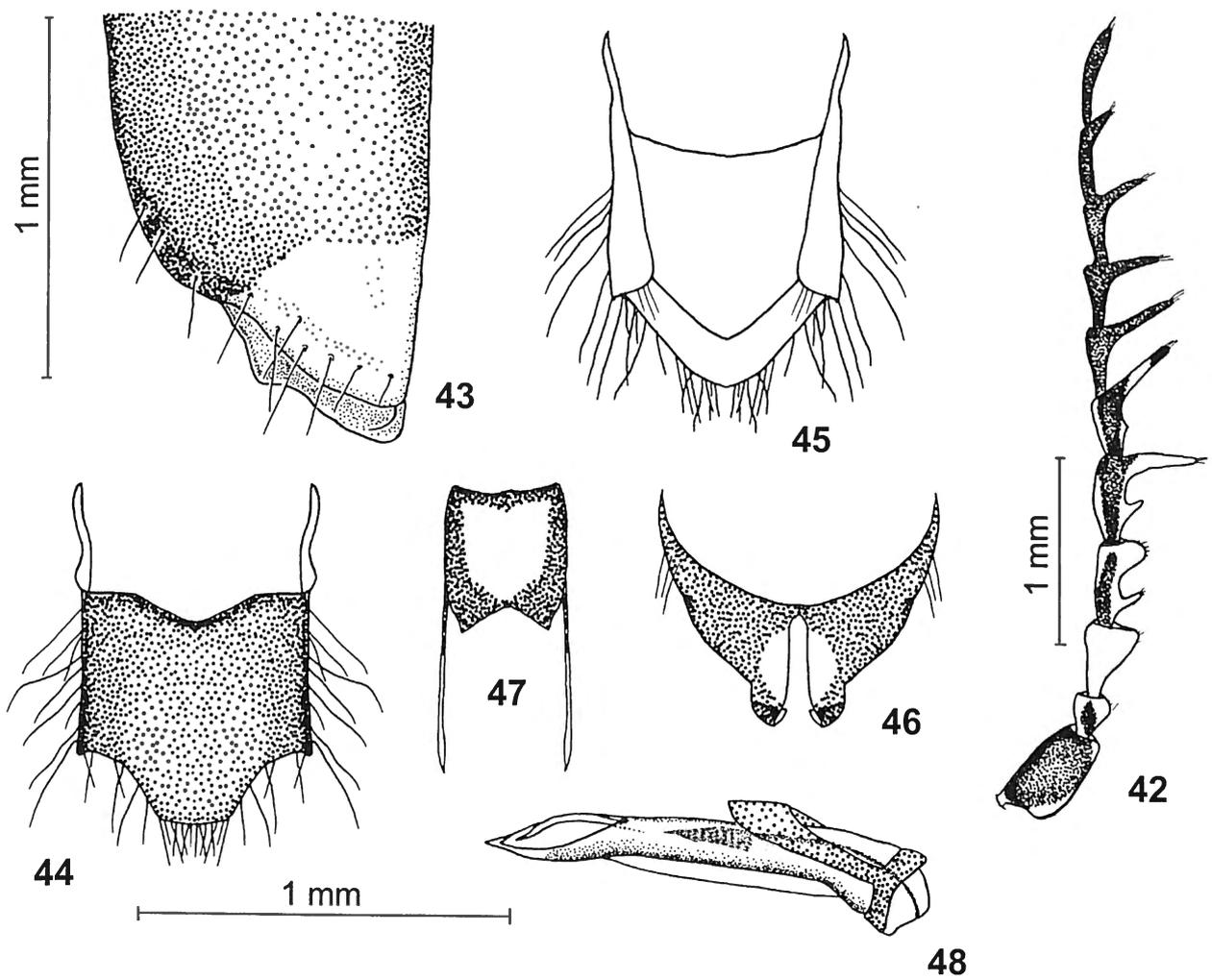
Diagnosis. *Clanomalachius* belongs to tribe Malachiini and should be placed among *Malachius* and *Clanoptilus* genera. It can be easily separated from the genus *Malachius* by the impression in elytral apices (Figs. 62). Interocular elevation on head (Fig. 60) and swollen 1st antennal joint (Fig. 61) having depression on ventral side differentiate a new genus from *Clanoptilus*. Shape of the apical sternite is quite specific and is a special character of the genus *Clanomalachius* in comparison with the other representatives of the tribe.

Distribution. All species of the genus *Clanomalachius* are limited in their distribution to the region of Central Asia: Kazakhstan (*C. dolini*), Uzbekistan (*C. resecatu*), Uzbekistan and Kyrgyzstan (*C. debrosi*, *C. kühneli*), Afghanistan, Tajikistan, Kyrgyzstan, Turkmenistan (*C. insignicornis*); Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan (*C. kiesenwetteri*).

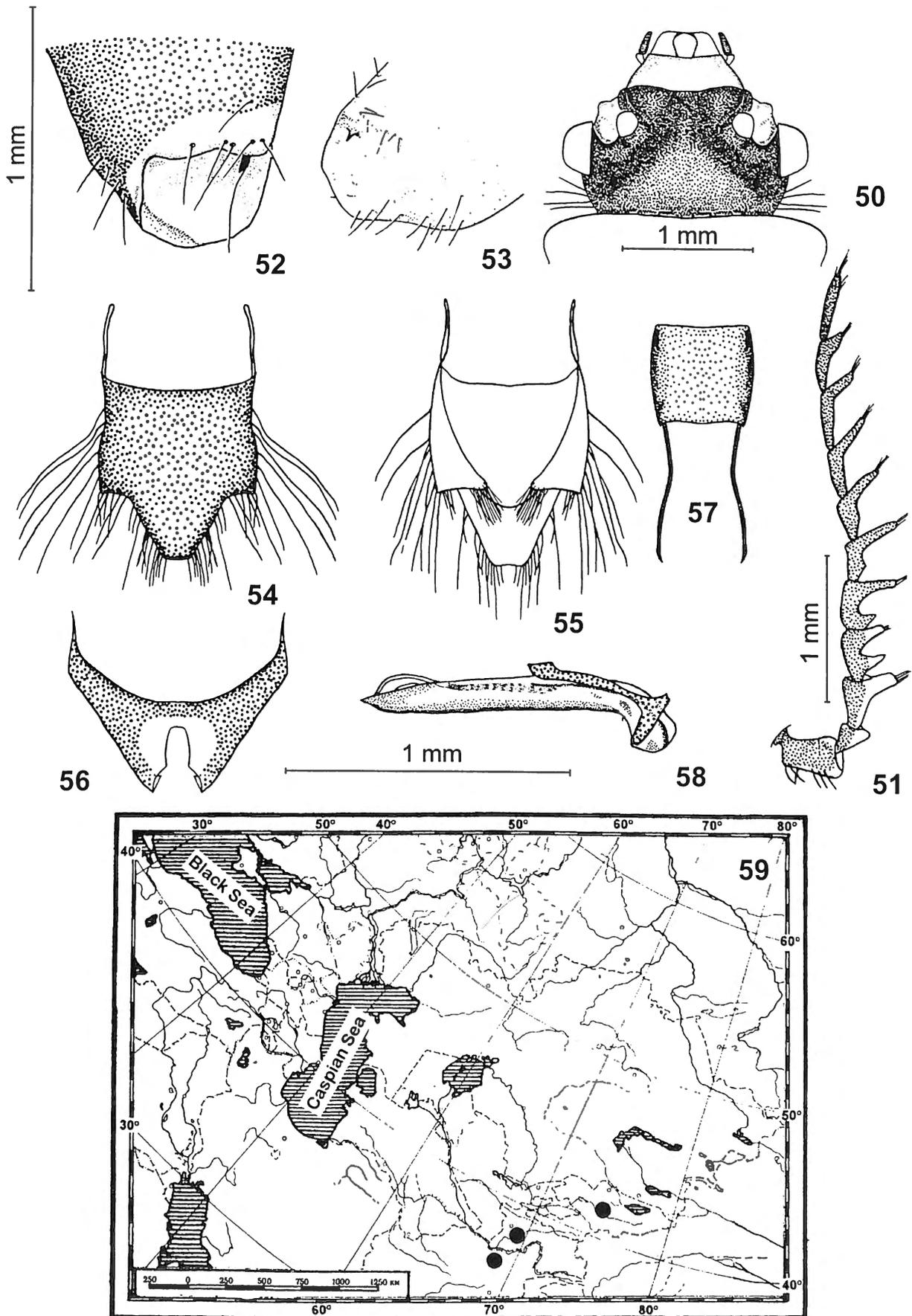
Habitat. Species occur on steppe grasses and flowers in high altitude mountains.

List of species in the Genus *Clanomalachius*:

1. *C. dolini* (WITTMER, 1991) comb.n.
2. *C. insignicornis* (PIC, 1909) comb.n.
3. *C. kiesenwetteri* (SOLSKY, 1881) comb.n.



Figs. 42-49 — *Clanomalachius dolini* (WITTMER, 1991), male: 42 – right antenna; 43 – apex of left elytra; 44 – apical tergite, dorsal; 45 – apical tergite, ventral; 46 – apical sternite; 47 tegmen; 48 aedeagus, lateral; 49 – locality.



Figs. 50-59 — *Clanomalachius insignicornis* (Pic, 1909), male: 50 head, dorsal; 51 — right antenna; 52 — apex of left elytra, author drawing; 53 — apex of right elytra, from Wittmer, 1979; 54 — apical tergite, dorsal; 55 — apical tergite, ventral; 56 — apical sternite; 57 tegmen; 58 aedeagus, lateral; 59 — locality.

4. *C. resecatus* (WITTMER, 1979) comb.n.
5. *C. debrosi* (WITTMER, 1979) stat. et comb.n.
6. *C. kühneli* (HICKER, 1959) comb.n.

Key to species (males only)

1. Appendage in elytral depression absent (Fig. 43) *C. dolini*
- Appendage in elytral depression present, being very small or quite big (Figs. 52, 87) 2
2. Interocular plate between antenna above clypeus black (Fig. 50) *C. insignicornis*
- Interocular plate between antenna above clypeus yellow (Fig. 60) 3
3. Appendage in elytral depression very small, not reaching the lower margin (Fig. 62, 71) 4
- Appendage in elytral depression big, reaching the lower margin (Fig. 79, 87) 5
4. Appendage very small, pellucid, with very thin and long black bristles fixed under it *C. kiesenwetteri*
- Appendage short, strong, with 3-4 thin black bristles fixed on sides and below *C. resecatus*
5. Upper side of elytral depression with a stretched plate (Fig. 87) *C. kühneli*
- Upper side of elytral depression evenly rounded, without stretched plate (Fig. 79) *C. debrosi*

Clanomalachus dolini (WITTMER, 1991) comb. n.
(Figs. 42-49)

Clanoptilus (Hypoptilus) dolini WITTMER, Mitt. EGB, 41, 1991:29 Abb. 41-46

Material. Kazakhstan: Tugaj on Charyn River, H~620 m, 25.V.1990, W.Dolin – holotypus, ♂(NHMB), paratypes – 1 ♂, 1 ♀ (SZMN); Kyrghyzstan: NE Fergana, Kara-Unkur Ravine, 3 km SSW Charvak Vill., 18.V.1993, D.Milko leg. 1 ♀ (SZMN)

Diagnosis. Differs from all congeners by the absence of appendage in elytral apices (Fig. 43) and coloration of surface with green-bronze metallic luster. The 3rd antennal segment evenly rounded (Fig. 42). Apical tergite parallel (Figs. 44) with a few hairs in bunches at the tips of anterior side. Apical sternite (Fig. 46) short, transversal. Tegumen and phallus as in figs. 47, 48.

Distribution. Known from its type locality only (Fig. 49).

Clanomalachus insignicornis (PIC, 1909) comb. n.
(Figs. 50-59)

Malachus insignicornis PIC, Echange, XXV, 1909, p. 129.

Clanoptilus insignicornis (PIC): EVERS, 1985:35.

Material. Kyrghyzstan: Kazarman environs, H~2000 m, 13.VIII.1972, Yu. Tarbinsky leg. – 1 ♂ (SZMN); valley

of Susamyr River, 27.V.1914, Mihalevskaya – 2 ♂♂(ZISP); Naryn, N riverside, 12 km W Ak-Tal_Tchat Vill., h~ 1600 m, 41°26'N 74° 56'E, 1.VII.1999, D.Milko leg. – 2 ♂♂; 6 ♀♀ (SZMN). Tajikistan: Teriklitau, near Kumsan Village, 27.IV.1991, S.Ovchinnikov leg. – 1 ♂; 2 ♀♀ (SZMN).

Diagnosis. The species can be easily differentiated by the black coloration of the interantennal part of head (Fig. 50), while this character in other species is light (Fig. 60). Elytra with very delicate impression (Fig. 53), appendage small, flat, bears a long black chaeta fixed in underside (Fig. 52). The 3rd antennal segment with strongly stretched outer side (Fig. 51). Apical tergite subparallel, (Fig. 54), possesses long and short dense hairs in bunches on anterior side (Fig. 55). Apical sternite transversal, trapezium-shape (Fig. 56). Tegumen and aedeagus as in Figs. 57, 58.

Distribution. Ranged in Afghanistan, Kyrghyzstan and Turkmenistan. This is a first record in Tajikistan.

Clanomalachus kiesenwetteri (SOLSKY, 1881) comb. n.
(Figs. 60-69)

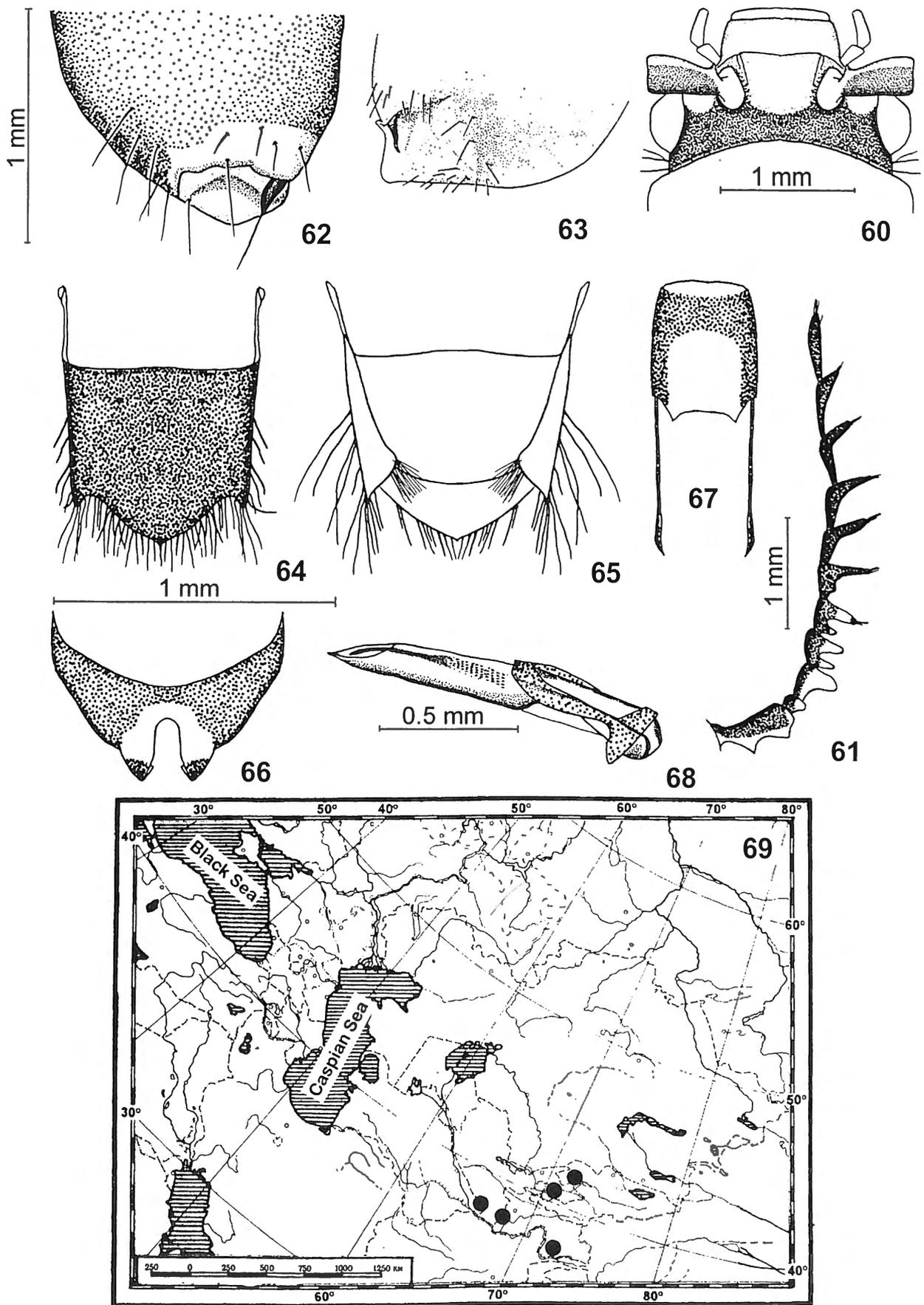
Malachus kiesenwetteri SOLSKY, Horae Soc. Ent. Rossicae, 1881, XII (3-4): 242-245

Clanoptilus kiesenwetteri (SOLSKY): EVERS, 1985:35.

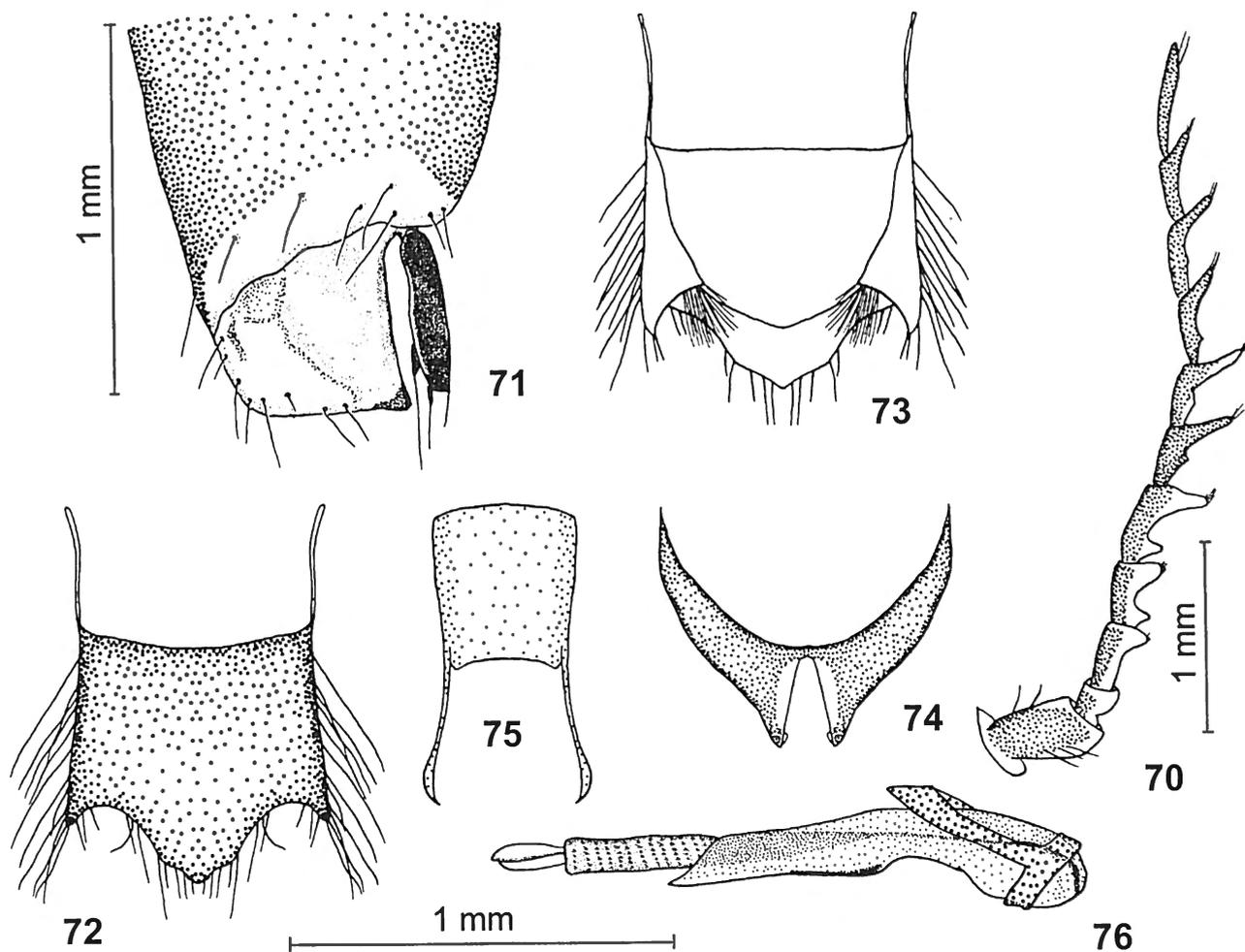
Material. Uzbekistan: Hissar Mt. Range, Turapsaj Ravine, 4 km SSW Sangardak Village, H~1550 m, 28°32'N 67°31'E, 3.VI.1997, D.Milko leg. – 3 ♂♂, 5 ♀♀ (SZMN, IBPK); Kyrghyzstan: Sary-Chelek Natural Reserve, 5 km S Arkyt, H~1200 m, 41°47'N 71°59'E, 29.VI.1996, D.Milko leg. – 3 ♂♂; 5 ♀♀ (SZMN); Fergansky Mt. Range, Kara-Alma valley, H~1600 m, 5-7.VI.1997, W.Dolin leg. – 1 ♂; 3 ♀♀ (SZMN); Fergansky Mt. Range, Alash Village, Alash forestry, 10.VI.1997, S.Ovchinnikov leg. – 1 ♂(SZMN); Tajikistan: Gorno-Badakhshanskaya Avtonomnaya Oblast, 8 km SE from Ishkashim to Dasht, 23.VI.1984, Coll.-? – 2 ♂♂ (SZMN).

Diagnosis. Similar to *C. insignicornis* (PIC), excepting characters as follows. Elytra more strongly impressed (Fig. 63). Appendage distinct, lamellate, with short strong chaetae. Head between antennae yellow (Fig. 60). Outer side in 3rd antennal joint less sinuate (Fig. 61). Apical tergite wide, its anterior side evenly emarginate (Fig. 64) and pubescent (Fig. 65). Apical sternite transversal, triangular-shape (Fig. 66). Tegumen and aedeagus are shown in Figs. 67, 68.

Distribution. The species was described from Turkestan (the upper stream of Zeravshan River and near Alai village). Later, recorded in Tajikistan (WITTMER, 1979). Ranged widely in mountainous parts of Uzbekistan and Kyrghyzstan: and, probably, can be found in the same landscapes of Eastern Kazakhstan (Fig. 69).



Figs. 60-69 — *Clanomalachius kiesenwetteri* (SOLSKY, 1881), male: 60 head, dorsal; 61 — right antenna; 62 — apex of left elytra, author drawing; 63 — apex of right elytra, from Wittmer, 1979; 64 — apical tergite, dorsal; 65 — apical tergite, ventral; 66 — apical sternite; 67 tegmen; 68 aedeagus, lateral; 69 — locality.



Figs. 70-77 — *Clanomalachius resecatus* (WITTMER, 1979), male: 70 — right antenna; 71 — apex of left elytra; 72 — apical tergite, dorsal; 73 — apical tergite, ventral; 74 — apical sternite; 75 tegmen; 76 aedeagus, lateral; 77 — locality.

*Clanomalachus resecatu*s (WITTMER, 1979) comb. n.
(Figs. 70-77)

*Malachius resecatu*s WITTMER, Ent. Arb. M. Frey 28, 1979:3 Abb. 5-6

*Clanoptilus resecatu*s (WITTMER): EVERS, 1985:36

Material. Uzbekistan: Buchara, Khodzha-fil'-ata, 11.V.1910, N.Zarudny – holotypus, ♂ (ZISP); Buchara, Kiaris, 22.V.1910, N.Zarudny – 4 paratypes, ♀♀ (ZISP); Zeravshan Mt. Range, Aman-Kutan Pass, H~1250 m, 39°18'N 66°54'E, 8.VI.1997, D.Milko leg. – 1 ♂ (SZMN); Kughitang Mt. Range, Surkhansky Reserve, Kompyrtepa, H~2400 m, 37°42'N 66°36'E, 30.V.1997, D.Milko leg. – 1 ♂ (SZMN).

Diagnosis. The species differs by its short wide appendage and strongly impressed elytral tips (Fig. 71). The 3rd antennal joint with slightly stretched outer side (Fig. 70). Apical tergite wide, complicatedly emarginate on anterior side (Fig. 72) and bearing a bunches of hairs mainly on the inner lateral sides (Fig. 73). Apical sternite (Fig. 74) narrow, somewhat elongate. Tegumen and phallus as in Figs. 75-76.

Distribution. Was described from Buchara. New collections show it is wide spread in Uzbekistan (Fig. 77).

Clanomalachus debrosi (WITTMER, 1979) stat. et comb. n.
(Figs. 78-85)

*Malachius resecatu*s ssp. *debrosi* WITTMER, Ent. Arb. M. Frey 28, 1979:5 Abb. 7

Material. Uzbekistan: Samarkand Prov., Galliaaralsky Distr., Zhilibulak, on *Vexibia* sp., 20.V.1964, Haidarova – holotypus, ♂(ZISP); Nuratau Mountains, Nuratau State Reserve, 5 km S Farish, 2.VI.1985, Andreeva – 1♂(SZMN); SYRDARIA PROV., AULIE-ATA, 12.VI.1913, CHERNAVIN; KYRGYZSTAN: ALAI, 5.VI.1885 – 1 ♂(ZISP); CHU RIVER, 3.VI.1955, COL-? – 1 ♂(SZMN). TCHANDALASH RAVINE, 6 N JCT. TCHATKAL RIV., H ~ 1630 M, 41°44'N 70°52'E, 21.VI.1999, D.MILKO LEG.- 3♂♂, 3♀♀ (SZMN).

Diagnosis. The species differs by very long narrow appendage and deep vertical impression (Fig. 79). The 3rd antennal segment almost triangular (Fig. 78). Apical tergite wide (Fig. 81), bunches of hairs disposed on each tip of tergite inner structure (Fig. 80). Apical sternite narrow, almost triangular (Fig. 82). Tegumen and phallus as in Figs. 83, 84.

Distribution. Ranged in Uzbekistan, Kyrgyzstan and Tajikistan (Fig. 85).

Remarks. Was described as subspecies (WITTMER, 1979). The author has shown the main character, a very long appendage, but did not find differences with the other

species in the shape of antennal joints. Investigations of special structures in all congeners allows *Clanomalachus debrosi* to be regarded as a good species. In the original description (WITTMER, 1979) the elytral apex was wrongly shown in Fig. 8. The paratype from Tajikistan, used for the preparation of this figure is surely *C. kühnelti* (HICKER) and should be eliminated from the type series. Investigation of the holotype of *C. debrosi* has shown the differences in shape of the elytral impression of this species.

Clanomalachus kühnelti (HICKER, 1959) comb. n.
(Figs. 86-93)

Malachius kühnelti HICKER, Ent. Nachrichtenbl. 11, 1959:71

Clanoptilus kühnelti (HICKER): EVERS, 1985:35.

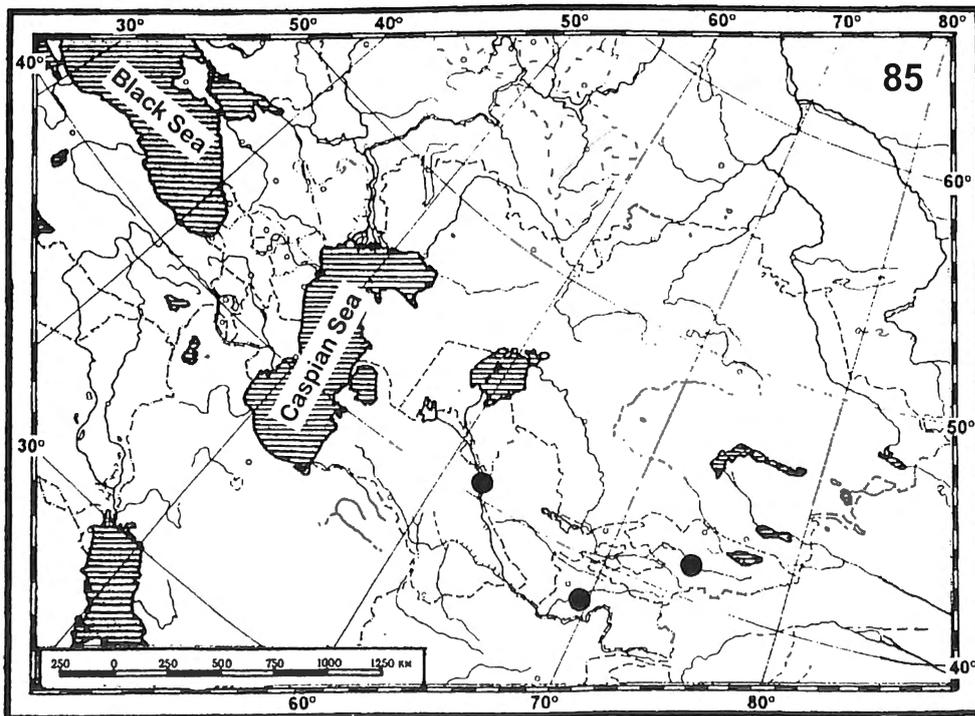
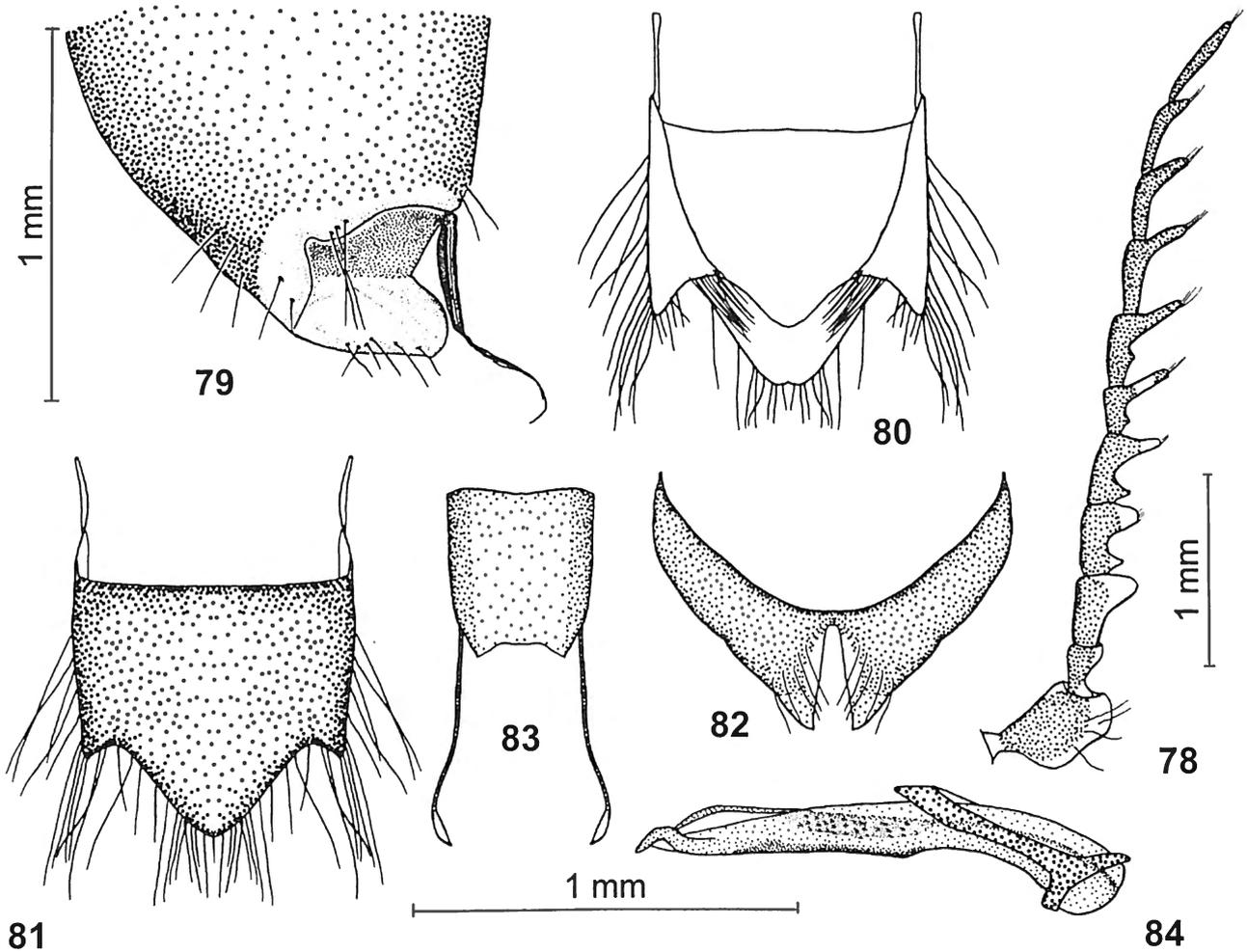
Material. Kyrgyzstan: Kichik-Alaj Mt. Range, Kirghiz-Ata Ravine, H~2150 m, 40°07'N 72°35'E, 23.VI.1990, D.Milko leg. – 1 ♂(SZMN).

Diagnosis. Special male characters strongly distinct in *C. kühnelti*. Elytral impression deep, with stretched lamellae in upper side and long curved lower side (Fig. 87). Appendage strong and long, bears a bunch of curved chaetae on the tip. The 3rd antennal segment large, triangular (Fig. 86). Apical tergite strongly emarginate (Fig. 88) and pubescent (Fig. 89). Apical sternite narrow, with wide emargination in the middle (Fig. 90). Tegumen and phallus as in Figs. 91, 92.

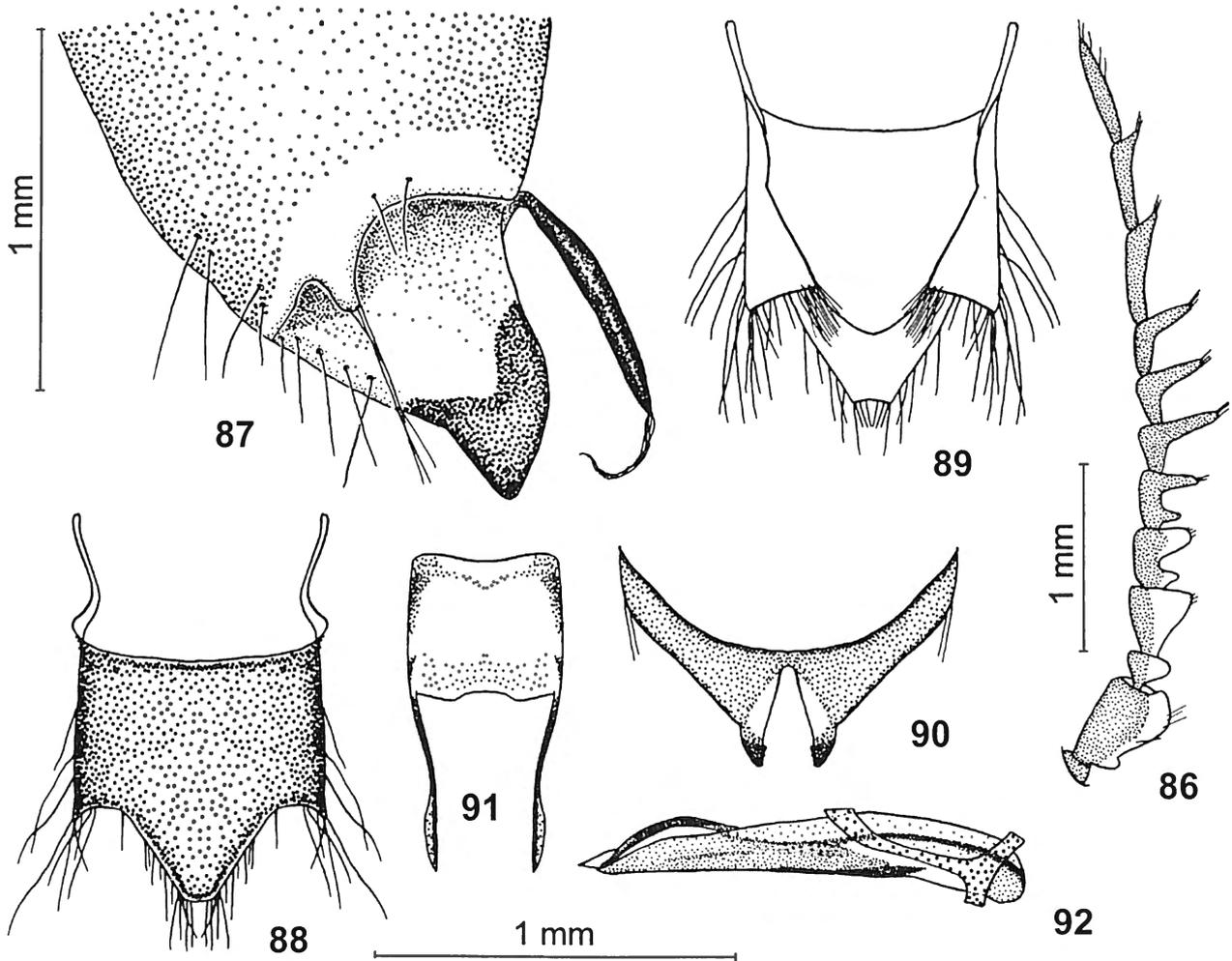
Distribution. This rare species was known only from its type locality, according to the description: Buchara, Uzbekistan. A new finding in Kirghizia widens notions of the range. Probably, the species can be found in the other parts of Central Asia as in the case of *C. kiesenwetteri*, for example (Fig. 93).

Key to *Malachius*-group genera

1. Male special structures not distinct 2
- Male special structures distinct, located on antennae, head or elytral apex 3
2. Pronotum transverse *Haplomalachus* EVERS, 1985
- Pronotum longitudinal . . *Microlipus* LECONTE, 1852
3. Male special structures located in elytral apex as impressions or appendages 4
- Male special structures located on head as excavations or protuberances 5
4. First antennal joint swollen, cylindrical, apical tergite twice emarginate on distal part, with bunches of hairs *Clanomalachus*, gen.n.
- First antennal joint not swollen, clavate or parallel, apical tergite with evenly rounded distal part, bunches of hairs lacking . . *Clanoptilus* MOTSCHULSKY, 1853
5. Male head excavation lacking 6
- Male head with deep transverse excavation 7
6. Male head with smooth protuberance between anten-



Figs. 78-85 — *Clanomalachus debrosi* (WITTMER, 1979), male: 78 — right antenna; 79 — apex of left elytra; 80 — apical tergite, ventral; 81 — apical tergite, dorsal; 82 — apical sternite; 83 tegmen; 84 aedeagus, lateral; 85 — locality.



Figs. 86-93 — *Clanomalachius kühnelti* (HICKER, 1959), male: 86 — right antenna; 87 — apex of left elytra; 88 — apical tergite, dorsal; 89 — apical tergite, ventral; 90 — apical sternite; 91 — tegmen; 92 — aedeagus, lateral; 93 — locality.

- na, 5th segment simple . *Cordylepherus* EVERS, 1985
- Male head with strong horn between antenna which is round and cut at the tip, 5th segment large, funnel-shape *Ceratistes* FISHER DE WALHEIM, 1844
7. Male head excavation located behind the antenna in a distal part of head, protuberance bearing long hairs disposed just inside the excavation, antenna with appendages *Malachius* FABRICIUS, 1775
- Male head excavation located before the antenna, distal part lacking protuberance, antenna simple, appendages lacking *Anhomodactylus* MAYOR et WITTMER, 1981

Acknowledgements

The main new material cited is given by colleagues from the Institute of Biology and Pedology, Kyrgyz Academy of Sciences (Bishkek), Dmitri Milko and Sergei Ovchinnikov. I am pleased to express many thanks for their kind help.

I am grateful to Drs G.S.Medvedev, B.A.Korotyaev (ZIN RAN, St.-Petersburg), N.B.Nikitsky, G.Yu.Lubarsky (ZMUM, Moscow), V.vihla, NMP (Praha), V.G.Shilenkov (Irkutsk University) for the loan of the valuable material under their care.

I am sincerely grateful to Professor E.G. Bellinger, Central European University, Budapest, for the kindest help in correction of the manuscript.

This work is partly supported by a grant of Siberian Branch Presidium of Russian Academy of Sciences, acts 83 of 10.3.2000.

References

ABEILLE DE PERRIN, E., 1890-91. Malachiidae. Malachides d'Europe et pays voisins. *Annales de la Société entomologique de France*. 6 Serie. Tome X. 1(181)- 680(284), Tome. LX. 285(115)- 446(442).

EVERS, A.M.J., 1985. Aufteilung der palaarktischen Arten des Gattungcomplexes *Malachius* F. *Entomologische Blätter*, 81(1-2): 1-40.

GREINER, J., 1937. Malachiidae. In: Junk-Schenking. Coleopterorum Catalogus. Pars 159: 1-199.

KRAUSS, H., 1902. Genus *Malachius*. In: Bestimmungs-Tabellen der europäischen Coleopteren 49: 1-33.

MEDVEDEV, L.N., 1964. New species of Malachiidae (Coleoptera) from Central Kazakhstan. *Trudy ZIN*, 34: 155-158 [in Russian]

SOLSKY, S.M., 1881. New and little known Coleoptera of the suburbs of the Russian Empire and adjacent countries. *Horae Societatis Entomologicae Rossicae*, XII(3-4): 237-261 (In Russian with Latin descriptions)

TSHERNYSHEV, S.E., 1998. Towards the knowledge of the *Malachius* group soft-winged flower beetles (Coleoptera, Malachiidae) of the fauna of Russia and the adjacent countries. Part 1. *Russian Entomological Journal*, 7(3-4): 129-146.

TSHERNYSHEV, S.E., 1999. Beetles of the families Cantharidae, Malachiidae, Oedemeridae, Meloidae, Chrysomelidae of the Dahurian Nature Reserve. *Insects of Dauria and adjacent territories. Proceedings of the Dahurskii State Biosphere*, II: 94-111 (In Russian with English summary)

WITTMER, W., 1979. Zur Kenntnis der Gattung *Malachius* F. sensu lato (Col. Malachiidae). *Entomologischen Arbeiten aus dem Museum G.Frey, Tutzing*, 28: 1-8.

Dr Sergei E. TSHERNYSHEV
Siberian Zoological Museum,
Institute of Animal Systematics and Ecology,
Russian Academy of Sciences,
Siberian Branch,
Frunze street, 11,
Novosibirsk 630091 Russia