

New species of the genus *Kolopterna* Graham, 1987 (Hymenoptera: Eulophidae: Tetrastichinae) from Middle Volga Region of Russia

Новые виды рода *Kolopterna* Graham, 1987 (Hymenoptera: Eulophidae: Tetrastichinae) из Среднего Поволжья

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KEY WORDS: Hymenoptera, Eulophidae, Tetrastichinae, *Kolopterna nikolskayae* sp.n., *K. kurdjumovi* sp.n., Ul'yanovsk Province, Middle Volga Region, new species.

КЛЮЧЕВЫЕ СЛОВА: Hymenoptera, Eulophidae, *Kolopterna nikolskayae* sp.n., *K. kurdjumovi* sp.n., Ульяновская область, Среднее Поволжье, новые виды.

ABSTRACT. Two new species of Eulophidae, *Kolopternanikolskayae* sp.n. and *K. kurdjumovi* sp.n., from Middle Volga Region (Ul'yanovsk Province, Russia) are described and figured. *Tetrastichus desulcatus* (Kostjukov, 1978) is transferred to the genus *Kolopterna* Graham, 1987. A key of eight species of *Kolopterna* is given.

РЕЗЮМЕ. Два новых вида Eulophidae: *Kolopterna nikolskayae* sp.n. и *K. kurdjumovi* sp.n. описаны из Среднего Поволжья (Ульяновская обл., Россия). *Tetrastichus desulcatus* Kostjukov, 1978 перенесён в род *Kolopterna* Graham, 1987. Приводится определительная таблица восьми видов рода *Kolopterna*.

Introduction

Graham [1987] described the genus *Kolopterna*, which included three new species: *K. kohatensis*, *K. salina* and *K. quartensis* from Pakistan, Spain and Italy respectively. Askew [1997] described the species *K. blascoi* Askew from Spain. Kostjukov and Khomchenko [2004] described the fifth species *K. grahami* from Stavropol Territory, Russia. While studying Tetrastichinae of Ul'yanovsk Province we collected eight females and one male undoubtedly belonging to genus *Kolopterna* and differing from known species of the genus.

Morphological terminology follows Graham [1987]. The abbreviations used in the text are listed below: F1 — first segment of antennal funicle, F2 — second segment, F3 — third segment, F4 — fourth segment, C1 — first segment of clava, C2 — second segment of clava, C3 — third segment of clava; SM — submarginal vein, M — marginal vein, PM — postmarginal vein, ST — stigmal vein.

The following abbreviations are used for depositories of the type collections: ZISP — Zoological Institute of Russian Academy of Science (St.-Petersburg); ZMMU — The Zoological Museum of the Moscow State University, (Moscow).

Kolopterna Graham, 1987

First segment of mid- and hind tarsi much shorter than second segment; malar sulcus (Fig. 1) with oblong or sublinear fovea below eye; forewing (Figs 3, 8) with *M* shorter than or at most as long as costal cell; antenna of female (Figs 2, 7) with 3 anelli, the first and second anelli discoid, the third large and quadrate or slightly transverse; funicle with 3 segments, clava 3-segmented; body non-metallic and usually black and yellow or mainly yellow [Graham, 1987; Askew, 1997; Khomchenko & Kostjukov, 2004].

HOST. Unknown.

DISTRIBUTION. Spain, Italy, Pakistan, Russia — Stavropol Territory and Ul'yanovsk Province.

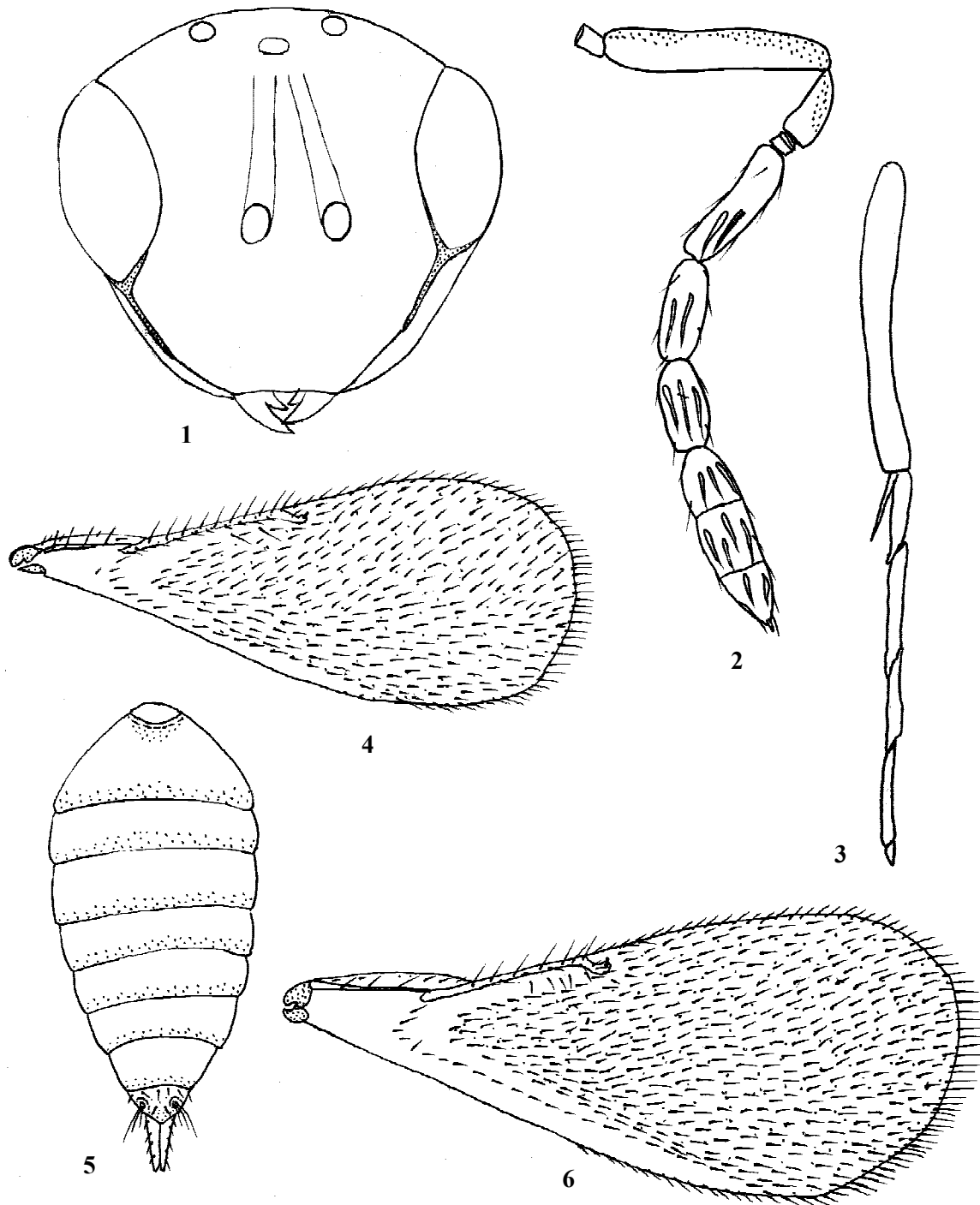
Kolopterna nikolskayae Kostjukov et Yegorenkova, sp.n. Figs 1–6.

TYPE MATERIAL, HOLOTYPE: ♀, Russia, Ul'yanovsk Prov., vil. Vyazovka, Radishchevo dist., 60 km S Ul'yanovsk, 52°53'N, 48°26'E, 21.VII.2005, leg. Yegorenkova (ZISP).

PARATYPES: 4 ♀♀, same data as in holotype (ZISP); 1♀, Russia, Ul'yanovsk Prov., env. Mar'evka, Novospasskij distr., 133 km SW Ul'yanovsk, 53°13'N, 47°46'E, 19.VII.2005, leg. Yegorenkova (ZISP); 1♀, Ul'yanovsk Prov., vil. Vyazovka, Radishchevo dist., 60 km S Ul'yanovsk, 52°53'N, 48°26'E, 16.V.1995 leg. Yefremova (ZISP); 1♂, Ul'yanovsk Prov., vil. Vyazovka, Radishchevo dist., 60 km S Ul'yanovsk, 52°53'N, 48°26'E, 16.V.1995, leg. Yefremova (ZISP).

DESCRIPTION. Female. Body length 1.65–2.0 mm. Head (Fig. 1) 2.3–2.6 times as broad as long, slightly broader than mesoscutum and slightly broader than its own height. POL 1.6–1.8 OOL. Eyes 1.03–1.30 times as long as broad. Malar space about 0.9–1.0 length of eye. Malar sulcus with sublinear fovea below eye about 0.6–0.85 malar space. Mouth

1.0–1.1 malar space. Toruli placed above at level of the lower margin of eyes. Scrobes depressed and connected in mid distance to median ocellus. Mandibles with two big teeth. Antenna (Fig. 2) with scape 1.0–1.2 times longer than eye length; 1.55–1.75 times as long as F1; not reaching median ocellus; pedicel plus flagellum 1.75–2.0 times as long as



Figs 1–4. *Kolopterna nikolskayae* sp.n.: 1 — head, frontal view; 2 — antenna; 3 — mid leg; 4, 6 — forewing; 5 — gaster; 1–5 — female; 6 — male.

Рис. 1–4. *Kolopterna nikolskayae* sp.n.: 1 — голова, спереди; 2 — антенна; 3 — средняя нога; 4, 6 — переднее крыло; 5 — брюшко; 1–5 — самка; 6 — самец.

breadth of mesoscutum; pedicel 2.0–2.3 times as long as broad, 1.35–1.5 times as short as F1; F1 3.7–4.2 times as long as broad, 1.2–1.3 times as long as F2; F2 2.8–3.2 times as long as broad, 1.1–1.2 times as long as F3; F3 1.7–2.4 times as long as broad. Clava 3-segmented, 3.1–4.1 times as long as broad; 1.6–1.9 times as broad as F1. Cl 1.2–1.5 as long as broad; C2 1.1–1.2 as long as broad; C3 1.1 as long as broad.

Thorax 1.3–1.4 times as long as broad. Pronotum 1.1–1.5 times as short as mesoscutum, 1.9–2.1 times as broad as long, with short light setae, except for middle part. Midlobe of mesoscutum 1.1–1.3 times as broad as long, without median line, with 2–3 rows of 10–12 setae, short, pale and decumbent. Scutellum 1.1–1.3 times as broad as long, without or with weak median line, distance between submedian lines 1.14 times as short as scutellum, setae pale. Dorsellum 2.7 times as broad as long. Propodeum medially 1.0–1.25 times as long as dorsellum; median carina fine; spiracles oval, touch anterior margin, spiracles diameter 1/4 as long as propodeum; callus with 4–5 dark long setae, situated from posterior margin to level of mid spiracles. Coxa, femora and tibia of fore legs 1.7 : 4.6 : 5.5 times as long as wide; coxa, femora and tibia middle legs 1.8 : 6.6 : 8.8 times as long as wide; coxa, femora and tibia hind legs 1.7 : 3.4 : 8.0 times as long as wide. Spur of midtibia (Fig. 3) 0.75 times as long as basitarsus. Forewing (Fig. 4) 2.4 times as long as broad; costal cell 1.2 times as long as M, with 5–7 dorsal setae. SM with 4 dorsal setae, M with 8–10 frontal setae, 5.3–6.2 times as long as ST; speculum closed, rather narrow but extending as broad strip below M and reaching ST, interrupted medially by only a few setae; cilia 0.3–0.7 length of ST. Hind wing rounded.

Gaster (Fig. 5) longish-oval, 1.2–1.3 times as long as thorax plus head, 1.6 times as long as thorax, 2.2–2.4 times as long as broad; 0.9–1.0 times as broad as thorax; thin part of ovipositor extended less than 0.3–0.4 length of hind tibia; last tergite 1.2–1.3 times as long as broad.

Body pale yellow with usual darker pattern restricted to the following: vertex with brown spot around lateral and

median ocellii; antenna yellow or testaceous, except dorsal part of scape, pedicel and anelli blackish; scapulae testaceous; apex of scape and pronotum with a central brownish spot, mesoscutum with brown spots medially in front of mesoscutum touching each other; propodeum brown; tegulae yellowish. Gaster yellow with lateral brown spots. Legs yellow, except brown 1/3–1/2 hind coxae and fourth tarsal segments.

Male. Length 1.4 mm. Head 2.3 times as broad as long, 1.5 times as broad as mesoscutum. Eyes 1.33 times as long as broad. Scape 1.35 times as long as eye, 3.5 times as broad as long, 2.21 times as long as F1; not reaching median ocellus, with ventral plaque about 0.50 length of scape. Plaque situated in proximal part of scape. Pedicel about 1.9 times as long as broad, 1.1 times shorter than F1; F1 1.5 times as long as broad 1.3 times shorter than F2; F2 2.5 times as long as broad, equal in length to F3 and F4; F3 4.0 times as long as broad. Antenna with 4 funicular segments with whorled setae, brownish.

Thorax 1.43 times as long as broad. Pronotum 1.6 times as short as mesoscutum, 2.7 times as broad as long, with short light coloured setae on pronotum. Midlobe of mesoscutum 1.1 times as broad as long, without median line. Scutellum 1.3 times as broad as long, without median line; setae pale. Dorsellum 2.8 times as broad as long. Propodeum medially 1.7 times as longer as dorsellum.

Forewing (Fig. 6) 2.48 times as long as broad; costal cell 1.03 times as long as M, with 5–7 setae. SM with 3 dorsal setae, M with 8–11 frontal setae, 3.8 times as long as ST; speculum closed. Hind wing rounded.

Gaster oval, nearly as long as thorax, 1.64 times as broad as mesoscutum, 1.6 times as long as broad.

Colour range as in female.

HOST. Unknown.

ETYMOLOGY. The species is named in honour of Dr. M.N. Nikolskaya, a prominent Russian entomologist.

DIFFERENTIAL DIAGNOSIS. Female of new species differs from *K. quartensis* in following morphological features:

<i>K. quartensis</i> Graham	<i>K. nikolskayae</i> sp.n.
Pedicel plus flagellum 1.20–1.35 times breadth of mesoscutum	Pedicel plus flagellum 1.75–2.0 times breadth of mesoscutum
Antenna with scape not reaching median ocellus	Antenna with scape reaching median ocellus
F1 3.2–3.5 times as long as broad	F1 3.7–4.2 times as long as broad
F2 2.1–2.5 times as long as broad	F2 2.8–3.2 times as long as broad
Spur of midtibia about as long as basitarsus	Spur of midtibia 0.75 times as long as basitarsus.
Gaster 1.8 times as long as thorax.	Gaster 1.6 times as long as thorax
Pronotum 0.25 times as long as mesoscutum	Pronotum 0.6–0.9 times as long as mesoscutum

Kolopterna kurdjumovi
Kostjukov et Yegorenkova, sp.n.
Figs 7–8.

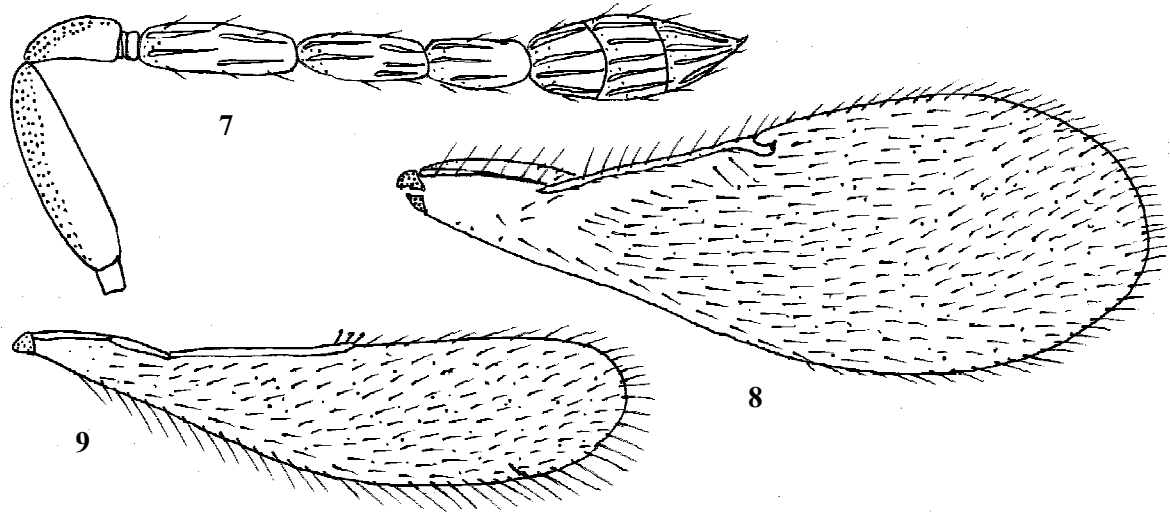
TYPE MATERIAL, HOLOTYPE: ♀, Russia, Ul'yanovsk Prov., vil. Vyazovka, Radishchevo dist., 60 km S Ul'yanovsk, 52°53'N, 48°26'E, 21.VII.2005, leg. Yegorenkova (ZISP).

PARATYPES: 1 ♀, same data as in holotype (ZISP).

DESCRIPTION. **Female.** Head 2.7 times as broad as long, 1.1–1.2 times as broad as high, as broad as mesoscutum. POL 1.7–1.8 OOL. Eyes 1.30 times as long as broad. Malar space about 0.9–1.0 length of eye. Malar sulcus with sublinear fovea below eye about 0.7–0.8 malar space. Mouth 1.0–1.1 malar space. Toruli situated above at level of lower margin of eyes. Scrobes depressed and connected medially to median ocellus. Antenna (Fig. 7) with scape 1.2 times as long as length of eye;

1.70–1.80 times as long as F1; not reaching median ocellus; pedicel plus flagellum 1.70–2.0 times as long as breadth of mesoscutum; pedicel about 2.0 times as long as broad, 1.6–1.7 times shorter than F1; F1 2.9–3.3 times as long as broad; 1.3 times as long as F2; F2 1.9–2.1 times as long as broad, 1.2–1.3 times as longer as F3; F3 1.5 times as long as broad. Clava 3.1–3.3 times as long as broad; 1.3 times as broad as F1. Cl 1.1 as long as broad; C2 quadrate; C3 1.15 as broad as long.

Thorax 1.6–1.7 times as long as broad. Pronotum 0.8–0.84 times as long as mesoscutum, 1.5–1.6 times as broad as long, covered with shorter light coloured setae on all surface, except medially. Midlobe of mesoscutum 1.0–1.1 times as broad as long, without median line, with 2–3 rows of adnotular light coloured short lateral setae. Scutellum 1.2 times as broad as long, without or with weak submedian line; setae pale. Dorsellum 4.5–4.6 times



Figs 7–9. *Kolopterna kurdjumovi* sp.n., female: 7 — antenna; 8 — forewing; 9 — hindwing.

Рис. 7–9. *Kolopterna kurdjumovi* sp.n., самка: 7 — антенна; 8 — переднее крыло; 9 — заднее крыло.

as broad as long. Propodeum medially 0.95–1.0 times as long as dorsellum; median carina thick; spiracles rounded, touching front edge, diameter of spiracles 1/3 as long as propodeum; callus with 4–5 dark long setae. Coxa, femora and tibia of fore legs, respectively in 1.7 : 4.7 : 8.6 times as long as breadth; coxa, femora and tibia of middle legs, respectively in 2.0 : 5.8 : 8.75 times as long as wide; coxa, femora and tibia of hind legs, according in 2.5 : 3.7 : 9.7 times as long as wide respectively. Forewing (Fig. 8) 2.4–2.5 times as long as broad; costal cell 1.1–1.1 times as long as M, ST 5.5–6.0 times as short as M; SM with 4–5 dorsal setae, M with 9–11 frontal setae; speculum closed; forming medium square area below M and reaching ST, interrupted medially by only a few setae; cilia 0.3 length of ST. Hind wing rounded.

Gaster lanceolate, 1.3 times as long as thorax plus head, 1.5 times as long as thorax and 3.8–4.2 times as long as broad; extending part of ovipositor sheath less than 0.4–0.5 length of hind tibia. Last tergite 1.8–2.6 times as long as broad.

Body yellow, mesoscutum with testaceous spots medially touching each other and situated in front of mesoscutum; middle part of pronotum and axilla brown; propodeum brown; vertex with brown spot around lateral and median ocellii; antenna yellow or testaceous, except brownish ventral part of scape, pedicel and anelli; mandibles sometimes testaceous; scapulae testaceous; tegulae yellowish. Gaster yellow with transverse brown spots. Legs yellow, except brown fourth segments of tarsus.

Body length 2.4 mm.

Male. Unknown.

HOST. Unknown.

ETYMOLOGY. The species is named in honour of N.V. Kurdjumov, a well-known entomologist.

DIFFERENTIAL DIAGNOSIS. Females of new species differs from *K. quartensis* in following characters:

<i>K. quartensis</i> Graham	<i>K. kurdjumovi</i> sp.n.
Pedicel plus flagellum 1.20–1.35 times breadth of mesoscutum	Pedicel plus flagellum 1.7–1.8 times breadth of mesoscutum
Antenna with scape not reaching median ocellus	Antenna with scape reaching median ocellus
F3 1.7–1.9 times as long as broad	F3 1.5 times as long as broad
Scutellum 1.4–1.5 times as broad as long	Scutellum 1.2 times as broad as long
Pronotum 0.4 as long as mesoscutum	Pronotum 0.8–0.84 as long as mesoscutum
Gaster 2.1–2.5 times as long as broad	Gaster 3.8–4.2 times as long as broad
Gaster 1.8 times as long as thorax	Gaster 1.5 times as long as thorax
Thorax 1.3–1.4 times as long as broad	Thorax 1.6–1.7 times as long as broad
Last tergite about as long as broad	Last tergite 1.8–2.6 times as long as broad

KEYS TO SPECIES OF *KOLOPTERNA*, FEMALES ONLY

1. Forewing with apical margin, at least between PM and apex of wing, bare, basal vein bare, speculum open below and continued as a broad bare strip below M to somewhat beyond ST, distal part of wing, rather sparsely covered with short setae; body almost wholly yellow *K. kohatensis* Graham
- Forewing with apical margin ciliate throughout; basal vein pilose, speculum closed below, continued as a narrow bare wedge only as far as ST, distal part of wing with moderately thick and longer setae; body either mainly testaceous, or black-marked 2

2. Antenna with scape reaching level of vertex or slightly above it, as long as or slightly longer than eye; Fl 4.7–5.0 times, F2 2.5–3.0 times, F3 1.9–2.0 times as long as broad; pedicel plus flagellum 1.4–1.5 breadth of mesoscutum; mesoscutum and scutellum rather dull; body testaceous or yellowish with a few dark markings on head and thorax, usually with fuscous bands on gastral tergites *K. salina* Graham
- Antenna with scape not reaching vertex; Fl 2.5–4.2 times as long as broad 3
3. Gaster less than twice as long as thorax 4
- Gaster about twice or much as long as thorax 7

4. Pronotum 0.25–0.48 length of mesoscutum 5
 — Pronotum 0.8–0.9 length of mesoscutum 6
5. Gaster 1.3 times as long as thorax, last tergite about as long as broad, Fl 3.2–3.5 times as long as broad, pronotum exactly one-quarter as long as mesoscutum *K. quartensis* Graham
 — Gaster 1.6 times as long as thorax, Fl 2.5 times as long as broad, pronotum almost half as long as mesoscutum
 *K. blascoi* Askew
6. Thorax 1.3–1.4 times as long as broad, scutellum about 0.9 length of mesoscutum, gaster (Fig. 5) 2.1–2.4 times as long as broad; pedicel about 1.35–1.5 times shorter than F1, F1 3.7–4.2 times, F2 2.8–3.2 times, F3 1.7–2.4 times as long as broad *K. nikolskayae* sp.n.
 — Thorax 1.6–1.7 times as long as broad, scutellum about 0.8 length of mesoscutum, gaster 3.8–4.2 times as long as broad; gaster about 1.5 times as long as thorax, scutellum about 0.8 length of mesoscutum, pedicel about 1.6–1.7 times as short as F1, F1 2.9–3.3 times, F2 1.9–2.1 times, F3 1.5 times as long as broad *K. kurdjumovi* sp.n.
7. Gaster 2.5 times as long as thorax plus head, thorax 1.25 times as long as broad, scutellum 1.35 times as broad as long, propodeum medially slightly shorter than dorsellum; median carina fine *K. grahami* Kostjukov & Khomchenko
 — Gaster less than twice as long as thorax plus head, thorax 1.2 times as long as broad, scutellum about as long as broad,

propodeum medially as long as dorsellum; clava as long as F2+F3. Pedicel about times 0.7 long as F1
 *K. desulcatus* (Kostjukov), **comb.n.**

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