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## A NEW SPECIES OF THE GENUS *RHAPHIUM* (DOLICHOPODIDAE, DIPTERA) FROM SIBERIA

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**A New Species of the Genus *Rhaphium* (Dolichopodidae, Diptera) from Siberia.** Negrobov O. P., Barkalov A. V., Selivanova O. V. — *Rhaphium sibiricus* Negrobov, Barkalov et Selivanova, sp. n. is described from the Altai Mountains. The new species is similar to *Rhaphium gruniniani* Negrobov, 1979, differing by black legs, simple, not thickened tip of fore basitarsus, length ratio of apical portion of vein CuA<sub>1</sub> to crossvein dm-cu and by the shape of gonopodes.

**Key words:** Dolichopodidae, *Rhaphium*, Siberia, Altai, new species.

**Новый вид рода *Rhaphium* (Dolichopodidae, Diptera) из Сибири.** Негрбов О. П., Баркалов А. В., Селиванова О. В. — С высокогорного Алтая описан *Rhaphium sibiricus* Negrobov, Barkalov et Selivanova, sp. n. Новый вид близок к *Rhaphium gruniniani* Negrobov, 1979, от которого отличается черными ногами, простыми неутолщенными вершинами передних базитарзусов, соотношением длины вершинной части CuA<sub>1</sub> к длине dm-cu и формой гонопод.

**Ключевые слова:** Dolichopodidae, *Rhaphium*, Сибирь, Алтай, новый вид.

The genus *Rhaphium* Meigen, 1803 used to be divided into three genera: *Porphyrops* Meigen, 1824, *Xiphandrium* Loew, 1857 and *Rhaphium* s. str. O. P. Negrobov (1979) published a revision of these genera and treated them as *Rhaphium* (s. lat.) and 11 Palaearctic species were transferred from the genera *Porphyrops* and *Xiphandrium* to *Rhaphium*. This point of view is widely accepted now by all systematists in the Palaearctic Region. To date, there are 193 species of *Rhaphium* worldwide (taking into account unpublished data). Unlike most of genera of the family Dolichopodidae, the genus *Rhaphium* has good Holarctic connections, with 15 species having the Beringian, circumboreal and siberian-american types of distribution ranges. All of them are distributed in both the Palaearctic and Nearctic Regions. The following species belong to this group: *Rhaphium beringiense* Negrobov et Vockeroth in Negrobov, 1979, *R. boreale* (Van Duzee, 1923), *R. commune* (Meigen, 1824), *R. consobrinum* Zetterstedt, 1843, *R. crassipes* (Meigen, 1824), *R. elegantulum* (Meigen, 1824), *R. fascipes* (Meigen, 1824), *R. firsovi* Stackelberg et Negrobov, 1976, *R. glaciale* (Ringdahl, 1920), *R. macalpini* Negrobov, 1986, *R. nasutum* (Fallén, 1823), *R. nigribarbatum* (Becker, 1900), *R. terminate* (Van Duzee, 1924), *R. tripartitum* (Frey, 1913) and *R. umbripenne* (Frey, 1915).

During the collecting trip conducted by the Siberian Zoological Museum of the Institute of Systematics and Ecology of Animals (SZM of ISEA) four specimens were collected in the high mountains of Altai. They were recognized as a new species of the genus *Rhaphium*. They were captured in the Kurai mountain range (Ulagan District) and on Plateau Ukok in Kozh-Agach district of Republic Altai. The holotype and the paratypes of the new species are deposited in the Siberian Zoological Museum (Novosibirsk), one paratype — in the collection of Department of Ecology and Systematics of Invertebrate Animals, Biological-Soil Sciences Faculty, Voronezh State University.

***Rhaphium sibiricus* Negrobov, Barkalov et Selivanova, sp. n. (fig.1–4)**

**Material.** Holotype, Republic Altai, Ulaganskij District, Kurajskij mountain range, 2500–2800 m a. s. 1, 50,33° N 87,75° E, 29–30.06.2008 (Barkalov), deposited in the Siberian Zoological Museum (Novosibirsk).

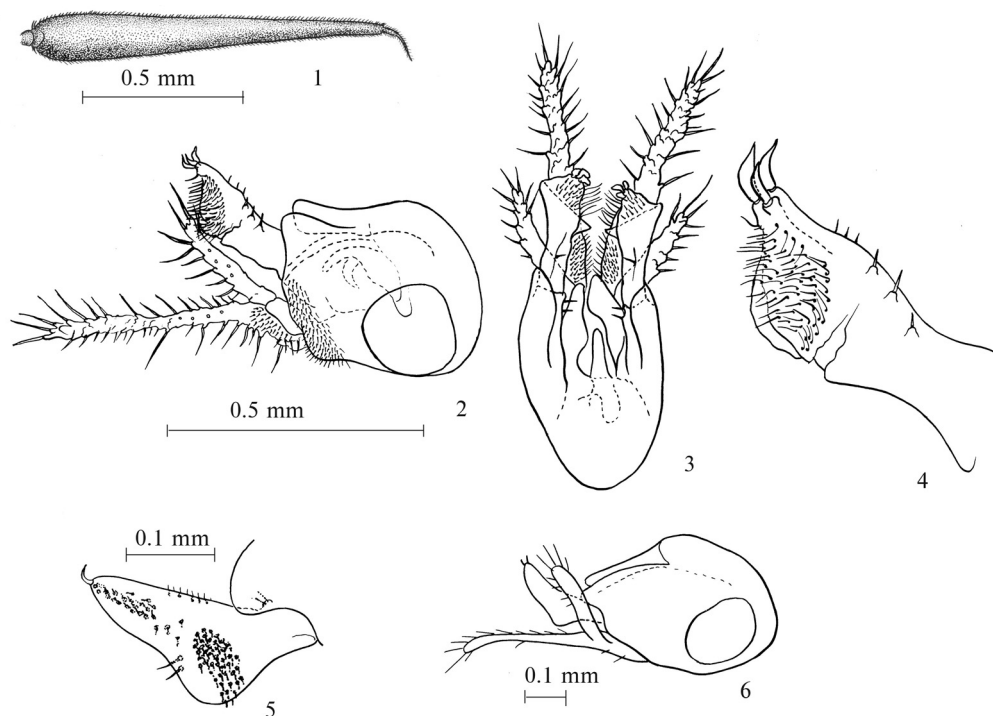


Fig. 1–6. *Rhaphium sibiricus* sp. n.: 1 — antenna lateral; 2 — hypopygium lateral; 3 — the same ventral; 4 — gonopode lateral. *Rhaphium gruniniani*: 5 — gonopode lateral; 6 — hypopygium lateral.

Рис. 1–6. *Rhaphium sibiricus*, sp. n.: 1 — усик сбоку; 2 — гипопигий сбоку; 3 — тоже снизу; 4 — гонопода сбоку. *Rhaphium gruniniani*: 5 — гонопода сбоку; 6 — гипопигий сбоку.

Paratypes: 2 same labels as in holotype (Barkalov); 1 Altai, plateau Ukok, 4–6 km N.-W. Kal'dzhinkul'-Bas lake, 2550 m a. s. l., alpine meadow, 17–19.07.2006 (Sorokina), deposited in the Siberian Zoological Museum (Novosibirsk), one paratype — in the collection of Department of Ecology and Systematics of Invertebrate Animals, Biological-Soil Sciences Faculty, Voronezh State University.

**Description. Male. Head.** Face silver-white, not reaching lower margin of eyes, in middle part slightly broader than 3rd antennal segment at base. Proboscis and palpus dark-brown with black hairs. Frons green with brownish pollinosity. Antennae black, 3rd segment long, gradually tapering, 7.5 times as long as broad near base. Arista apical, covered with short hairs, nearly as long as 3rd antennal segment is wide at base (fig. 1). Length : width of 3rd antennal segment : length of arista ratio — 7.5 : 1.0 : 1.0. Postocular bristles in lower part of head white.

**Thorax** green with metallic bronze shading. Mesonotum metallic shining, pleura grey pollinose. Propleuron with short pale hairs. 4 pairs of strong dorsocentral bristles, with 2–3 short hairs anteriorly. 5–6 pairs of short acrostichal bristles arranged in 1–2 irregular rows in anterior part of mesonotum. Scutellum with 2 strong apical bristles and 2 short hairs laterally. Legs mostly greenish-black with black bristles and hairs, only pulvilli white and knees of mid legs sometimes dirty-yellow. Coxae with white hairs, mid coxa sparse ventral bristles not forming spur. Hind coxa with 1 white bristle and some white hairs. Femora without long hairs. Tarsomeres simple, not broadened. Fore tibia with 2 anterodorsal and 1 posteroventral bristles. Fore tibia and 5 tarsomeres (from 1st to 5th) lengths ratio — 6.5 : 2.9 : 1.5 : 1.0 : 0.7 : 0.7. Mid femora with 1 black preapical bristle. Mid tibia with 2 anterodorsal, 2 posterodorsal and 1 posteroventral bristles. Mid basitarsus with very short hairs ventrally. Relative length of mid femur and 5 tarsomeres — 8.2 : 3.7 : 1.8 : 1.3 : 1.0 : 0.9. Hind tibia not swollen, with 2 anterodorsal,

2 posterodorsal and short ventral bristles. Hind basitarsus without strong bristles. Relative length of hind tibia and 5 tarsomeres — 10.2 : 3.1 : 1.9 : 1.4 : 1.2.

Wings slightly darkened, more intensively in anterior part.  $R_{4+5}$  and  $M_{1+2}$  hardly convergent near wing tip.  $M_{1+2}$  weakly curved in apical part. Costal vein last sections (between  $R_{2+3}$  and  $R_{4+5}$  and between  $R_{4+5}$  and  $M_{1+2}$ ) ratio — 3.3 : 1.3. The ratio of basal and apical portion of  $M_{1+2}$  — 9.5 : 11.2. Apical part of  $CuA_1$  longer than crossvein (dm-cu) — 5.0 : 2.0. Lower calypter yellow, with white hairs. Halter yellow.

Abdomen green, with bronze shading, dorsal part of abdomen bright shining without microtrichia (“tomentum”). Bristles and hairs on abdomen mostly black, except white hairs on sides of 1st tergite. Hypopygium withdrawn with only brown, white haired cercus visible. Gonopodes slightly broadened on mid part, short, triangular in apical half (lateral view) with 2 broadened curved bristles apically, with group of short hairs dorsally and some short hairs ventrally. Cercus long, longer than epandrium, divided into two lobes: lateral lobe approximately twice as short as medial one; covered with hairs, bearing bristles on tip and on dorsal side of basal half (fig. 2–4).

Female. Single specimen with missing antennae and destroyed abdomen. Similar to male in most characters. Face broader than in male, dark, brownish-grey. Width to length of face ratio — 2.1 : 3.0. Palpus and proboscis brown, palpus shorter than face wide (1.3 : 2.1).

Body length 2.7–2.8 mm, wing length 3.2–3.3 mm.

Diagnosis. In the key to the genus *Rhaphium* of the Palearctic Region (Negrobov 1979), the new species runs to *Rhaphium gruniniani* Negrobov, 1979 differing by the following characters:

- Legs black, fore metatarsi not swollen on tip. Apical part of  $CuA_1$  x2.5 as long as dm-cu. Gonopodes narrowed in basal half (Fig. 2, 4). .....  
..... *Rhaphium sibiricus* Negrobov, Barkalov & Selivanova, sp. n.
- Femora and tibiae largely yellow, fore metatarsi slightly swollen on tip. Apical part of  $CuA_1$  x3 as long as dm-cu. Gonopodes widened in basal half (fig.5, 6) .....  
..... *Rhaphium gruniniani* Negrobov, 1979

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