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New taxonomic data for the Palaearctic species of the genus *Sympycnus* Loew, 1857 (Diptera, Dolichopodidae), with a description of a new species

Новые данные по систематике палеарктических видов рода *Sympycnus* Loew, 1857 (Diptera, Dolichopodidae) с описанием нового вида

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Ключевые слова: Dolichopodidae, *Sympicnus*, новый вид, лектотип, Сибирь.

Abstract. A bibliographic review of the principal publications on the taxonomy of the genus *Sympycnus* in the Palaearctic, together with a description of a new species from Siberia, *Sympycnus subspiculatus* Negrobov, Barkalov et Selivanova, **sp.n.**, synonyms and identification keys, are presented. The type serie of *Sympycnus spiculatus* Gerstäcker, 1864 was examined and the lectotype designated.

Резюме. Проведён обзор литературы по таксономии рода *Sympycnus* Палеарктики с указанием основных публикаций с описаниями новых видов, синонимией и определительными ключами. С территории Сибири описан новый вид *Sympycnus subspiculatus* Negrobov, Barkalov et Selivanova, **sp.n.** Изучена типовая серия и обозначен лектотип *Sympycnus spiculatus* Gerstäcker, 1864.

Introduction

The genus *Sympycnus* was isolated from the genus *Porphyrops* Meigen, 1824 by Loew in 1857. At present more than 360 species of the genus are described. According to the fact that the number of newly described taxa of the genus permanently increases we estimate future diversity as 500 species. The genus is studied well in Europe, where several species regarded both as abundant, *Sympycnus aeneicoxa* (Meigen, 1824), *Sympycnus cirripes* (Haliday, 1851) and *Sympycnus pulicarius* (Fallén, 1823) or relatively rare but with wide European distribution, *Sympycnus spiculatus* Gerstäcker, 1864 and *Sympycnus simplicipes* Becker, 1908. At the same time, most of the species are known only by original description, and considered as contingent endemics.

Detailed description of the morphological features of the genus has been given in a number of papers [Loew, 1857; Kowarz, 1889; Lundbeck, 1912; Becker, 1918; Parent, 1938]. In males the most important diagnostical characters are: shape and chaetotaxy on the 3rd and the 4th segments of hind tarsi, structure of fore tarsi, shape of the 3rd antennal segment and structure of male genitalia. Females of many species of this genus can only be distinguished with difficulty.

The last review of the Palaearctic species of the genus *Sympycnus* was completed by Becker in 1918. The identification key containing 9 species and 1 subspecies was published by Perent in 1938. After these publications the list of species was significantly increased by descriptions of Vaillant's species from Algeria — *Sympycnus muscicolus* (Vaillant, 1952), *Sympycnus hygropetricus* Vaillant, 1952, *Sympycnus deserti* Vaillant, 1953 and from France — *Sympycnus tenuifacies* (Vaillant, 1973) [Vaillant, 1952, 1953, 1973]. Olejniček and Stark described *Sympycnus gregori* Olejniček et Stark, 1999 from Czech Republic and Italy [Olejniček, Stark, 1999], and Tsacas described female of *Sympycnus balearicus* Tsacas, 1960 from Spain [Tsacas, 1960]. Some new species have been described from Mongolia: *Sympycnus changaicus* Negrobov, 1973, *Sympycnus convergens* Negrobov, 1973, *Sympycnus seticosta* Negrobov, 1973, *Sympycnus ur-*

gaicus Negrobov, 1973, *Sympycnus vadimi* Negrobov, 1973 [Negrobov, 1973].

Later, after study of taxonomy of this genus, some species were transferred from other genera to the genus *Sympycnus*, for example *Campsicnemus muscicolus* Vaillant, 1952 and *Campsicnemus tenuifacies* Vaillant, 1973 [Negrobov, Zlobin, 1978]. *Sympycnus hygropetricus* Vaillant, 1952 was removed from synonymy of *Teuchophorus simplex* Mik, 1880 [Meuffels, Grootaert, 1992], and *Sympycnus balearicus* Tsacas, 1960 transferred to the genus *Teuchophorus* [Grichanov, 2008].

Two species as homonyms received new names: *Sympycnus kowarzi* Parent, 1925 for *Sympycnus cirripes* Kowarz, 1889, nec Haliday, 1851 and *Sympycnus strobli* Parent, 1927 for *Sympycnus simplicipes* Strobl, 1909, nec Becker, 1908 [Parent, 1925, 1927]. Four species identified in the World Catalogue of Dolichopodidae [Yang et al., 2006] currently belong to synonyms: *Sympycnus brunnitibialis* Santos Abreu, 1929 (noted as variation of *Sympycnus annulipes* Meigen, 1824) = *Sympycnus pulicarius* (Fallén, 1823) [Frey, 1936], *Sympycnus imperfectus* Becker, 1918 synonymized with *Nematoproctus presectus* Loew, 1878 [Negrobov et al., 2008], *Sympycnus hygropetricus* Vaillant, 1952 is a synonym of *Teuchophorus simplex* Mik, 1880 [Meuffels, Grootaert, 1992] and *Sympycnus thoracicus* Santos Abreu, 1929 a synonym of *Sympycnus pulicarius* (Fallén, 1823) [Frey, 1936].

Material

This paper is based on material collected by A.V. Barkalov on the East Taimyr Peninsula (in the North of Central Siberia) and also from materials of various collectors, deposited in the Zoological Institute, Saint-Petersburg. The material from the Taimyr was collected by two methods — sweep netting and yellow pan traps. A large and diverse material was collected by yellow pans standing on a swampy river with sedges (Fig. 1).

The holotype and some paratypes of the new species are deposited in the Siberian Zoological Museum (Novosibirsk), other paratypes — in the collection of Department of Ecology and Systematics of Invertebrate Animals, Biological-Soil Sciences Faculty, Voronezh State University and in Zoological Institute Russian Academy of Sciences, Saint-Petersburg.

Taxonomy

Sympycnus spiculatus Gerstäcker, 1864

Material. Lectotype, ♂, № 5959, Kreuth (Germany) (present designation). Paralectotypes, 1♂, 2♀♀, ibidem.

Comments. While preparing this paper the syntypes of *Sympycnus spiculatus* Gerstäcker, 1864, from the collection of Zoological Museum of Humbold University (Berlin, Germany) were studied. Since neither the holotype of this species does not appear extant, we here designate a lectotype.

Sympycnus olejnicheki
Negrobov, Barkalov et Selivanova, **sp.n.**
Fig. 1.

Material. Holotype, ♂, **Russia,** ***Krasnoyarskij Kraj*****:** East Taimyr, bank of river Zakharova Rassokha, 72.7° N, 101.08° E, yellow pan traps, 1–10.07.2011, A. Barkalov leg. Paratypes: 72♂♂, 4♀♀ — the same label data as holotype; **Russia,** ***Republic Sakha:*** 1♂ — Momskij district, Indigirka river, lower reaches of the river Ystan-Yuryakh, 2.07.1976, V. Kovalev leg.; 1♂ — Indigirka river, lower reaches of the river In'yali, 19.08.1976, V. Kovalev leg; 1♂ — Verkhoyansk settlement, Yana riverbank, on *Salix* sp., 13.08.1972, K. Gorodkov leg.

Description. *Male.* Face silver-white with sides converging down, its width in middle scarcely broader than 3rd antennal segment (ratio 0.4 : 0.3). Proboscis dark-brown, palpus yellow, with black hairs and silver-white pollinosity. Frons dark-green with brown dusting. Antenna black, postpedicel long, triangular, its length distinctly longer width (Fig. 1C); stylus located in middle of dorsal surface of postpedicel. Ratio of length of postpedicel to its width and stylus length as 0.5 : 0.3 : 1.5. Lower postocular setae white.

Thorax dark-green. Mesonotum weakly shiny with brown dusting; with 5 pairs of strong dorsocentral setae; acrostichal setae short, arranged in two irregular rows in front 2/3 of mesonotum; pleura with short white hairs. Legs mostly yellow, coxae black with yellow tip, fore and hind femora black dorsally, 2–5th segments of fore tarsi, all segments of mid and hind tarsi black; tip of hind tibiae slightly darkened, pulvillae white. Coxae covered with white hairs; setae on tips of mid coxa do not form a spur. Fore femora with short preapical hairs, without long setae. Fore tibia and tarsus without long setae and hairs. The fifth segment of fore tarsus finely thickened. Ratio of fore tibia and tarsus lengths (from 1st to 5th): 3.7 : 1.8 : 0.7 : 0.6 : 0.5 : 0.4. Mid and hind femora with a strong preapical seta. Mid tibia with 3 anterodorsal and 2 posterodorsal setae. Ratio of mid tibia and tarsus lengths: 3.6 : 1.6 : 0.7 : 0.6 : 0.4 : 0.4. Hind tibia with 3 anterodorsal, 3 posterodorsal and a dorsal seta. Third segment of hind tarsus with black curved apical spike, its length approximately equal to length of segment and with a long apical seta and group of hairs (Fig. 1A). The forth segment of hind tarsus anteriorly with erect hairs. Ratio of hind tibia and tarsus lengths: 4.3 : 1.2 : 0.8 : 0.3 : 0.3 : 0.4. Wing: darkened, R_{4+5} and M_{1+2} parallel in apical part, M_{1+2} finely curved apically. Ratio of part of costa between R_{2+3} and R_{4+5} to that between R_{4+5} and M_{1+2} is 1.1 : 0.3. Distal part of M_{3+4} longer than dm-cu: 1.7 : 0.6. Anal lobe well developed, anal angle obtuse. Lower calypter yellow with white cilia. Halter yellow. Abdomen: green with bronze tinge, grey pollinose on sides and at base, covered with black setae, ventrally with white hairs. Hypopygium except brown cercus black, with brown tinge; cercus with white hairs (Figs 1D, E). Surstyli asymmetric (Figs 1F, G), broad-oval, with deep oval excision ventrally and with short setae on apical part. Hypandrium with short spike-like flat projections.

Female differs from male broader grey face with parallel sides (Fig. 1H), shorter postpedicel (Fig. 1I), by absence of black curved apical spike and by absence erect hairs on 3–4 tarsomeres of hind tarsus. Ratio of postpedicel length to its width, arista length and face width: 0.5: 0.5: 2.3: 0.7.

Body length 2.3–2.4 mm, wing length 2.0–2.1 mm.

Etymology. The species is named after famous Czech dipterologist Jiří Olejníček.

Diagnosis. This species is similar to *Sympycnus spiculatus* Gerstäcker, 1864 [Becker, 1918; Parent, 1938] and

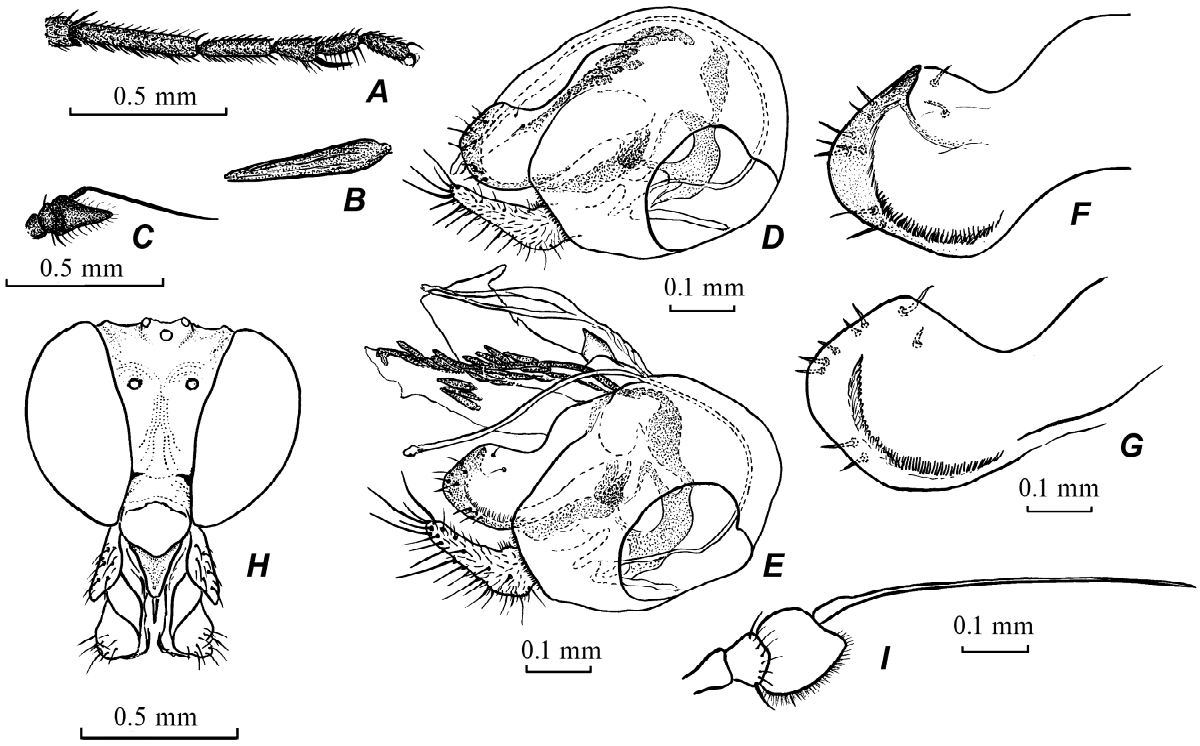

Fig. 1. *Sympycnus olejnicheki* sp.n. A, B, C, D, E, F, G — male, H, I —female. A — hind tarsus, C, I — antenna, B — spike of hypandrium, D — hypopigium lateral, E — hypopigium with detailed hypandrium and fallus, F — left gonopod lateral, G — right gonopod lateral, H — head frontal.

Рис. 1. *Sympycnus olejnicheki* sp.n. A, B, C, D, E, F, G — самец, H, I — самка. A — задняя лапка, C, I —усик, B — шип гипандрия, D — гипопигий сбоку, E — гипопигий с выделенным гипандрием и эдеагусом, F — левая гонопода сбоку, G — правая гонопода сбоку, H — голова спереди.

Sympycnus gregori Olejníček et Stark, 1999. Comparison of the new species with type material of *Sympycnus spiculatus* and specimens of *Sympycnus gregori*, deposited in the collection of Voronezh State University, allowed us to find some significant differences (see key to *Sympycnus spiculatus* species group).

Key to male of *Sympycnus spiculatus* species group

1. Apical spike on tarsomere 3 of hind tarsus straight (Fig. 2D); tarsomere 3 of hind tarsus distinctly longer than tarsomere 4. Postpedicel length sligtly longer its width. Femora yellow ..... *S. spiculatus* Gerstäcker
— Apical spike on tarsomere 3 of hind tarsus curved (Figs 1A, 2B); tarsomere 3 of hind tarsus slightly shorter than tarsomere 4. Femora partly darkened or yellow 2
2. Fore and hind femora darkened dorsally; tarsomere 4 of hind tarsus with erect ventral hairs (Fig. 1A). Postpedicel length approximately 2x longer than its width. Mid basitarsus longer than tarsomeres 2 and 3 together. Surstyli oval at tip ..... *S. olejnicheki* sp.n.
— Fore and hind femora yellow dorsally; tarsomere 4 of hind tarsus without erect ventral hairs (Fig. 2B). Postpedicel slightly longer than wide. Mid basitarsus shorter than tarsomeres 2 and 3 together. Surstyli stright at tip ..... *S. gregori* Olejníček et Stark

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References

Becker T. 1918. Dipterologische Studien. Dolichopodidae Paläarktische Region Erster Teil // Nova Acta der Kaiserlich Leopoldinisch-Carolinische deutschen Akademie der Naturforscher. Bd.102. S.203–315.

Grichanov I.Ya. 2008. Afrotropical *Sympycnus* Loew (Diptera: Dolichopodidae) // International Journal of Dipterological Research. Vol.19. No.1. P.17–65.

Frey R. 1936. Die Dipterenfauna der Kanarischen Inseln und ihre Probleme // Commentationes Biologicae. Bd.6. Ht.1. 237 S.

Kowarz F. 1889. Die europäischen Arten der Dipteren — Gattung *Sympycnus* Lw. // Wiener Entomologische Zeitung. Ht.8. S.175–185.

Loew H. 1857. Neue Beitrage zur Kenntnis der Dipteren. Funfter Beitrag. Die Familie der Dolichopoden // Programme der Koniglichen Realschulezu Meseritz. Berlin. 56 S.

Lundbeck W. 1912. Diptera Danica. Genera and species of flies hitherto found in Denmark. Vol.IV. Dolichopodidae. 407 p. 130 Figs.

Meigen I.W. 1824. Systematische Beschreibung der bekannten europäischen zweiflügeligen Insekten. Bd.4. S.25–104. 9 Tafeln.

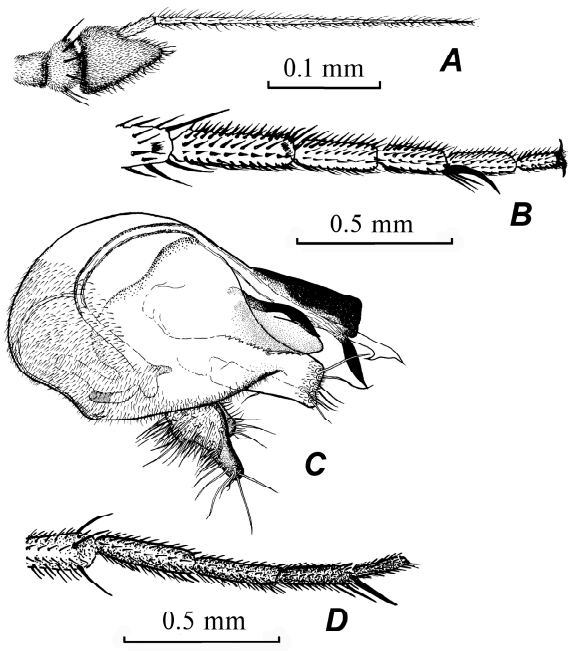

Fig. 2. *Sympycnus gregori* (A, B, C) and *Sympycnus spiculatus* (D): A — antenna, B — hind tarsus, C — hypopigium lateral, D — 1–4 segments of hind tarsus.

Рис. 2. *Sympycnus gregori* (A, B, C) и *Sympycnus spiculatus* (D): A — усик, B — задняя лапка, C — гипопигий, латерально, D — 1–4 членики задней лапки.

Meuffels H., Grootaert P. 1992. A new species of *Teuchophorus* (Diptera, Dolichopodidae) from Sicily // Animalia. Vol.17. P.131–135.

Negrobov O.P. 1973. Die Dolichopodidae-Arten (Diptera) aus der Mongolischen Volksrepublik. II // Acta zoologica Academiae Scientiarum Hungaricae. Bd.19. Nos 1–2. P.133–153.

Negrobov O.P., Maslova O.O., Selivanova O.V. 2008. New data on the systematics of some species of *Sympycnus* Loew, 1857 (Diptera, Dolichopodidae) // Dipterist Digest. Vol.15. P.44.

Negrobov O.P., Zlobin V.V. 1978. Review of the genus *Campsicnemus* Walker (Dolichopodidae, Diptera) of the USSR fauna // Nauchnye doklady vysshei shkoly. Biologicheskie nauki. No.1. P.51–59. [In Russian].

Olejníček J., Stark A. 1999. Description of a new *Sympycnus* species (Diptera, Dolichopodidae) from Italy and the Czech Republic // Studia dipterologica. Vol.6. No.1. P.149–152.

Parent O. 1925. Notes synonymiques // Encyclopédie Entomologique. Ser.B. II Diptera. Vol.1. P.142.

Parent O. 1927. Dolichopodidés paléarctiques nouveaux oupeuconnus // Encyclopédie Entomologique. Ser.IV. Diptera. P.45–96.

Parent O. 1938. Dipteres Dolichopodidés. Faune de France // L'Académie des Sciences de Paris. Vol.35. P.1–720.

Tsacas L. 1960. Sur quelques Dipteres de l'lle Majorque // EOS — Revista de Entomologia. Vol.36. P.237–244.

Vaillant F. 1952. Quelques Dolichopodidae de la zone paléartique (Diptera) // Bulletin de l'Institute Royal des Sciences Naturelles de Belgique. Vol.28. No.65. P.1–15.

Vaillant F. 1953. Sur quelques Dolichopodidae du Tassili u' Ajjer // Mission. Scientifique au Tassili Ajjer (Recherches Zoologiques et Médicales). T.I. P.1–18.

Vaillant F. 1973. Quelques insectes a larve aquatique du parc de la Vanoise // Travaux Scientifiques du Parc National de la Vanoise. T.III. P.133–165.

Yang D., Zhu Y., Wang M., Zhang L. 2006.World Catalog of Dolichopodidae // Beijing: China Agricultural University Press. 704 p.

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