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NEW SPECIES, NEW SYNONYM, AND ADDITIONAL RECORDS OF *GYROPHAENA* (COLEOPTERA, STAPHYLINIDAE, ALEOCHARINAE) FROM THE PALAEARCTIC REGION

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New Species, New Synonym, and Additional Records of *Gyrophæna* (Coleoptera, Staphylinidae, Aleocharinae) from the Palaearctic Region. Glotov S. V. — *Gyrophæna plutenkoi* Glotov, sp. n. is described from Russia (Primorskiy Krai). New synonymy are proposed: *Gyrophæna orientalis* A. Strand, 1938 = *Gyrophæna transsylvanica* Ádám, 2008, syn. n. Lectotypes are designated for *Gyrophæna fusicornis* Eppelsheim, 1887 and *Gyrophæna orientalis* A. Strand, 1938. *Gyrophæna cultellata* Assing, 2009 is recorded from Ukraine and *Gyrophæna taiwaspinosa* Pace, 2007 from Russia (Primorskiy Krai) for the first time.

Key words: Coleoptera, Staphylinidae, Aleocharinae, *Gyrophæna*, taxonomy, Russia, Ukraine.

Новый вид, новый синоним и новые находки *Gyrophæna* (Coleoptera, Staphylinidae, Aleocharinae) из Палеарктики. Глотов С. В. — Из Приморского края описан *Gyrophæna plutenkoi* Glotov, sp. n. Установлена новая синонимия: *Gyrophæna orientalis* A. Strand, 1938 = *Gyrophæna transsylvanica* Ádám, 2008, syn. n. Обозначены лектотипы *Gyrophæna fusicornis* Eppelsheim, 1887 и *Gyrophæna orientalis* A. Strand, 1938. Впервые отмечены: *Gyrophæna cultellata* Assing, 2009 для фауны Украины и *Gyrophæna taiwaspinosa* Pace, 2007 для фауны России.

Ключевые слова: Coleoptera, Staphylinidae, Aleocharinae, *Gyrophæna*, таксономия, Россия, Украина.

Introduction

The rove beetle genus *Gyrophæna* Mannerheim, 1830, includes 562 described species in the world fauna (Newton et al., 2005). Of these, 193 species are known from the Palaearctic Region (Smetana, 2004). Larvae and adult beetles of *Gyrophæna* are obligate fungivores feeding on mature spores, basidium, or fungal hyphae, scraping spores off from the surface of fungal hymenium. Several species can form mass aggregations in one fungal body, and particular species are repeatedly found together in one complex of co-existing species. Some species of *Gyrophæna* demonstrate associations with particular species of fungi (Ashe, 1984; SeEVERS, 1951). Though often very similar in external characters, the species are readily separated based on the form of male tergite VIII and morphology of the aedeagus, which is usually relatively large and distinctive. A reliable identification of females, however, is often difficult. The present paper is based on an examination of material of both genera from various public and private collections, including one species new to science, new synonym and numerous records of zoogeographic interest.

Material and methods

The material is deposited in the following collections and was examined through the kindness of the following curators: Schmalhausen Institute of Zoology, NAS of Ukraine, Kyiv (SIZK), A. A. Petrenko; Naturkunde Museum Berlin, Germany (ZMHB), J. Frisch; Naturhistorisches Museum, Wien (NHMW) H. Schillhammer; Natural History Museum, Oslo (NHMO), V. Gusarov; Hungarian Natural History Museum, Budapest (HMNH), Gy. Makranczy, O. Merkl; Field Museum of Natural History, Chicago (FMNH), J. Boone, A. Newton; private collection M. Schülke, Berlin (cSch); private collection S. Glotov, Lugansk (cGl).

Gyrophaena cultellata Assing, 2009

Assing, 2009: 145.

Material examined. Ukraine: Crimea, Chatyrdagh mountain (44°47'20.78" N, 34°18'23.91" E), 26.08.1978, 6 exs. (A. Petrenko) (SIKZ).

Comments. The species was previously known only from Turkey (Assing, 2009) and is here reported from Ukraine for the first time.

Distribution. Turkey, Ukraine (Crimea).

Gyrophaena fusicornis Eppelsheim, 1887

Eppelsheim, 1887: 419.

Material examined. **Type.** Lectotype (here designated): ♂, "Ussuri [Ussuri River] 48° latbor. / *fusicornis* Fvl [Fauvel] / c. Eppish. Steind, d. / *fusicornis* Epp.[elsheim] Deutsch.[e] Ent.[omologische] Zeit.[schrift] 1887. /s [page] 419 / TYPUS [red label] / LECTOTYPE ♂ *Gyrophaena fusicornis* Eppelsheim, 1887 des. S. Glotov 2010 [red label]" (NHMW). Paralectotypes: 2 ♂ [mounted on the same card on one pin] "♂. / *fusicornis* Fauv.[el] Fluss [river] Ussuri, Amur.[Amur River] Akinin [collector] / TYPUS [two red labels] / PARALECTOTYPE des. S. Glotov 2010 [two yellow label]" (NHMW); 2 ♀ [mounted on the same card on one pin] "♀ / same data as in males" (NHMW). **Not-type.** Russia: Primorsky Krai, Lazovskiy District, Lazo Village, Lazovka Valley, (133°54'01" E, 43°22'43" N), 2 exs., 20.08.1999, leg. J. Sundukow (cSch); Ussuri State Nature Reserve, Kordon Peshula, 22 exs., 13–20.08.1998, leg. J. Sundukow (cSch).

Redescription. Measurements (mm): length of antenna: 0.53–0.65; maximal head width (including eyes): 0.38–0.44; head length (the anterior margin of the clypeus to the posterior margin of the head) 0.23–0.25; maximal width of pronotum: 0.45–0.55; length of pronotum (measured along its midline): 0.26–0.33; length of elytra at suture: 0.30–0.35; maximal width of elytra (combined width of each elytron when elytra closed along suture): 0.59–0.70; total length of body (from anterior margin of labrum to posterior margin of tergite VIII): 1.6–2.0.

Coloration: head black, glossy; pronotum dark-brown, glossy; elytra pale-brown, with slightly darkened posterior angles, sometimes with brown spot in the area of scutellum; abdomen dark brown or black, posterior margin of abdominal tergite VII pale brown, tergite VIII pale brown or brown; mouthparts, antennae and legs yellow.

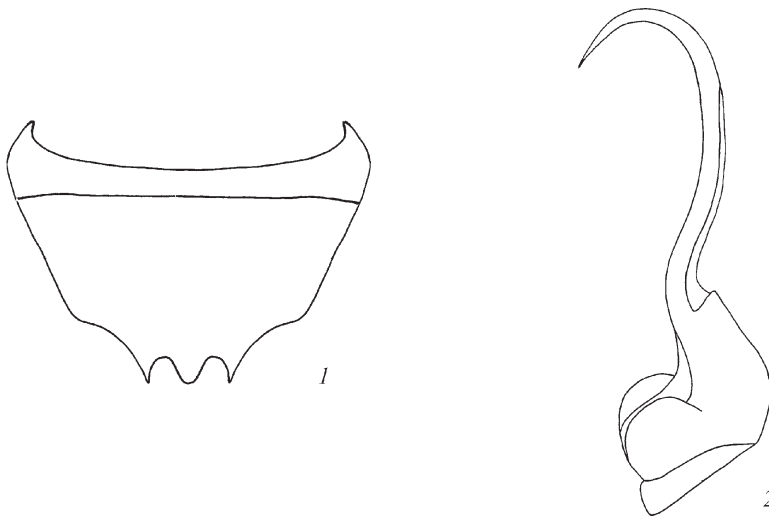


Fig. 1. *Gyrophaena fusicornis*: 1 — 8th abdominal tergites of male; 2 — aedeagus in lateral view.

Рис. 1. *Gyrophaena fusicornis*: 1 — 8-й тергит самца; 2 — эдеагус, сбоку.

Head strongly transverse, 1.65–1.76 times as wide as long, with very sparse and small punctation, vertex with 2 or 3 sparse, small, round punctures on each side; microsculpture dense and distinct. Antennae: antennal segments I and II long; segment III narrower and shorter than segments I and II each; segment IV small and short, strongly widened towards apex; segments V–X, each, transverse, 1.33–1.67 times as wide as long and slightly widened apicad.

Pronotum strongly transverse, 1.67–1.73 times as wide as long and 1.18–1.25 times as wide as head; with even, small punctation of moderately large, round, not numerous punctures; microsculpture dense and distinct.

Elytra 1.31–1.27 times as wide as pronotum; with sparse, round, small punctation; microsculpture dense and distinct; with sparsely distributed fine setae.

Abdomen: abdominal tergites, each, with relatively dense, small punctation and dense and distinct microsculpture. Male: posterior margin of tergite VII in the middle with 1 row of longitudinal, long and narrow striae; tergite VIII: posterior margin with 1 short and small appendage in the middle and with 2 short and wide appendages laterally. Female: posterior margin of tergite VIII rounded, without incision or appendages (fig. 1, 1). Aedeagus (fig. 1, 2).

Comments. The original description of *G. fusicornis* is based on an unspecified number of syntypes from “Ussuri 48° latbor” (Eppelsheim, 1887). Five syntypes, three male and two females were located in the collections of the NHMW, one of the males is designated as the lectotype. The designation of the male specimen as lectotype is done for the better fixation of the identity of the name. Male primary and secondary sexual characters are very important for species diagnostics in *Gyrophaena*.

Distribution. Russia, Primorsky Krai.

Gyrophaena orientalis A. Strand, 1938

Gyrophaena orientalis A. Strand, 1938: 39.

Gyrophaena transsylvanica Ádám, 2008: 164, **syn. n.**

Material examined. Type. Lectotype *Gyrophaena orientalis* (here designated): ♂, Russia: “Sistkem [Sisti-Khem River] Sibir [Siberia] Fr.[itz] Jansen [collector] / *Gyrophaena orientalis* A. Strand TYPUS [pink label] / NHMO: type collection 1000176722 / LECTOTYPE ♂ *Gyrophaena orientalis* A. Strand, 1938 des. S. Glotov 2010 [red label]” (NHMO). Holotype *Gyrophaena transsylvanica*: ♂ “Herkulesfürdő [Băile Herculane] Coll.[ector] Mihók / Holotypus *Gyrophaena transsylvanica* sp. n. det. Ádám, 2008. [red label] / *Gyrophaena orientalis* A. Strand, 1938 det. S. Glotov 2010 [white label]” (HMNH). Paratypes: 2 exs. “1 ♂ or 1 ♀ / Hu.[ngarian] Bihar Galbina Bokor / *fasciata* Mars[ham] det. Bernh.[auer] / Chicago NHMus M. Bernhauer Collection / Paratypus *Gyrophaena transsylvanica* sp. n. det. Ádám, 2008. [yellow labels] / *Gyrophaena orientalis* A. Strand, 1938 det. S. Glotov 2010 [white labels]” (FMNH). **Not-type.** Ukraine: Kyiv: Novobelichi vicinity (50°27'21.77" N 30°20'1.18" E), 14.07.1985, 7 exs., leg. A. Peterenko (SIZK).

Redescription. Measurements (mm): length of antenna: 0.64–0.66; maximal head width (including eyes): 0.44–0.48; head length (the anterior margin of the clypeus to the posterior margin of the head): 0.29–0.34; maximal width of pronotum: 0.48–0.54; length of pronotum (measured along its midline): 0.33–0.38; length of elytra at suture: 0.36–0.39; maximal width of elytra (combined width of each elytron when elytra closed along suture): 0.66–0.79; total length of body (from anterior margin of labrum to posterior margin of tergite VIII): 2.3–2.5.

Coloration: head dark-brown, glossy; pronotum brown, glossy; elytra yellow-brown, posterior angles and base with 2 (1 on each elytron) triangle, apically pointed, dark brown spots; abdomen pale brown, abdominal tergites VI and VII dark brown; mouthparts, antennae and legs yellow.

Head strongly transverse, 1.45–1.38 times as wide as long, vertex with 6 or more sparse, small, round, distinct punctures on each side; microsculpture hardly distinct or absent. Antennae length; antennal segment I long strongly widened towards apex; segment II long,

narrower and shorter than segments I; segment III narrower and shorter than segment II; segment IV small and short; segments V-X slightly strongly transverse, 1.33–1.50 times as wide as long, segments each, almost parallel-sided.

Pronotum smooth; strongly transverse, 1.42–1.45 times as wide as long and 1.09–1.13 times as wide as head; posterior angles and posterior margin of pronotal disc rounded; in middle and lateral sides of pronotal disc with sparse, scattered, small, rounded punctures, in the middle near anterior margin with 2 longitudinal discontinuous in centre rows, each with 2 moderately large and some small round, distinct punctures, in the middle near posterior margin with 2 large, round punctures, posterior margin with even, dense, small punctation; microsculpture hardly distinct or absent.

Elytra 1.38–1.46 times as wide as pronotum; with dense and small punctuation; microsculpture dense and distinct; with sparsely distributed fine setae.

Abdomen: abdominal tergites, each, with dense and distinct microsculpture; Male: posterior margin of tergite VII in the middle with 2 large, round striae and lateral some longitudinal, short striae; posterior margin of tergite VII with 1 moderately long, weakly sharpened and curved inwards processes laterally and in the middle with 2 lightly shorter appendages (fig. 2, 1). Aedeagus (fig. 2, 2, 3).

Comments. The original description of *G. orientalis* is based on an unspecified number of syntypes collected “Sistikem Sibir” collected by “Fritz Jansen” (Strand, 1938). A male syntype was located in the collections of the were found at the (NHMO); it is designated as the lectotype.

The original description of *G. transsylvanica* is based on a single holotype male from Romania “Herkulesfürdő” and two paratypes (one male and one female) from Hungary “Hu., Bihar, Galbina, Bokor” (Ádám, 2008). Ádám (2008) compared *G. transsylvanica* with *G. williamsi* A. Strand, 1939 and *G. munsteri* Strand, 1935, but there was no reference whatsoever to *G. orientalis*; the figures of the aedeagus of the holotype and paratype of *G. transsylvanica* in Ádám (2008) are rather misleading. An examination of the holotype and paratypes revealed that it is identical to *G. orientalis* in external characters, as well as in the shape of the male sternite VIII and in the morphology of the aedeagus. An examination



Fig. 2. *Gyrophaena orientalis*: 1 — 8th abdominal tergites of male; 2 — aedeagus in lateral view; 3 — aedeagus in dorsal and in lateral view; 1–3 — redrawn (after Ádám, 2008, with amendments).

Рис. 2. *Gyrophaena orientalis*: 1 — 8-й тергит самца; 2 — эдеагус, сбоку; 3 — эдеагус, вентрально (по: Ádám, 2008, с изменениями).

of the holotype and paratype of *G. transsylvanica* revealed that it refers to *G. orientalis*. Hence the synonymy is proposed above.

Distribution. Finland, Hungary, Latvia, Romania, Russia (European territory, East Siberia), Sweden, Ukraine (Strand, 1938, 1968; Smetana, 2004; Glotov et al., 2011; Enushchenko, Shavrin, 2011, 2012).

***Gyrophæna plutenkoi* Glotov, sp. n.**

Material examined. Type. Holotype ♂: "RUSSIA: Primorie [Primorsky Krai], S Artyom town env., 100–300 m, Ozemyi Kluytch Riv., 20.04.–30.5.1976, leg. A. Plutenko [white label] / Coll. M. Schülke, Berlin, Ankauf A. Plutenko, Oktober 2002 [white labels] / sp. n. ?, det. M. Schülke 2006 [white labels] / Holotypus ♂ *Gyrophæna plutenkoi* sp. n. det. S. Glotov, 2014 [red label]" (ZMHB).

Description. Measurements (mm) of holotype: length of antenna: 0.73; maximal head width (including eyes): 0.44; head length 0.29; maximal width of pronotum: 0.51; length of pronotum (measured along its midline): 0.36; length of elytra at suture: 0.41; maximal width of elytra (combined width of each elytron when elytra closed along suture): 0.73; total length of body (from anterior margin of labrum to posterior margin of tergite VIII): 2.2.

Coloration: head dark-brown; pronotum pale brown with narrow pale brown margin at base and laterally; elytra yellow; abdomen pale brown, abdominal tergites VI and VII dark brown; mouthparts, antennae and legs yellow.

Head smooth, transverse, 1.52 times as wide as long, vertex with 5 or more sparse, small, round, distinct punctures on each side; microsculpture absent.

Pronotum smooth; strongly transverse, 1.41 times as wide as long and 1.16 times as wide as head; posterior angles and posterior margin of pronotal disc rounded; in middle and lateral sides of pronotal disc with sparse, scattered, small, rounded punctures, in the middle with 2 longitudinal rows of 5 round, distinct punctures each; microsculpture absent.

Elytra smooth and glossy; 1.43 times as wide as pronotum; with sparse, round, small punctuation; microsculpture absent; with sparsely distributed fine setae.

Abdomen: posterior margin abdominal tergites, each, 1 row longitudinal and narrow striae; punctation hardly distinct or absent; abdominal tergites, each, with dense and distinct microsculpture. Male: middle of posterior margin of 8th tergite with wide incision

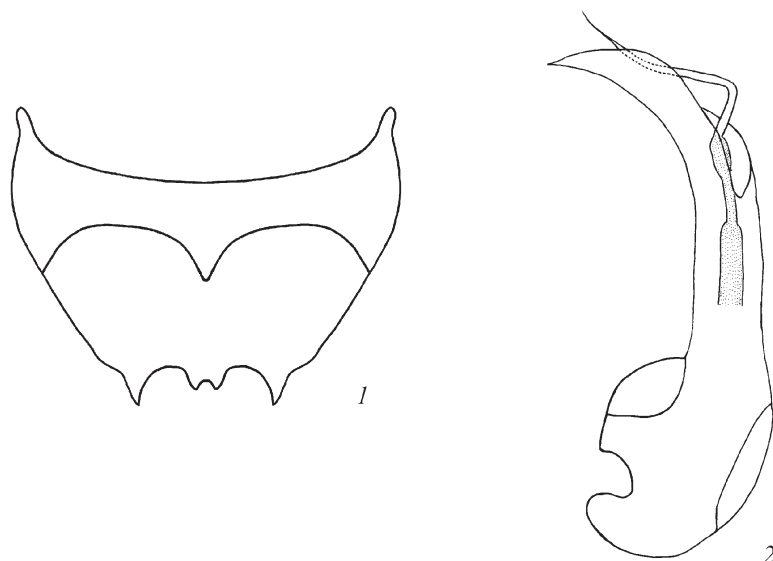


Fig. 3. *Gyrophæna plutenkowi* sp. n.: 1 — 8th abdominal tergites of male; 2 — aedeagus.

Рис. 3. *Gyrophæna plutenkowi* sp. n.: 1 — 8-й тергит самца; 2 — эдеагус, сбоку.

bordered by 2 short, wide, apically weakly pointed, curved inwards appendages and with 2 short, pointed teeth (fig. 3, 1). Aedeagus (fig. 3, 2).

Comparative notes. Based on the similar morphology of the male primary and secondary sexual characters *Gyrophaena plutenkoi* Glotov, sp. n. is similar to *G. simplicitalis* Pace, 2003 and allied species (*G. fusicornis* Eppelsheim, 1887). It can be reliably distinguished from these species by the shape of the male sternite VIII and by the shape of the aedeagus. For illustrations of the aedeagi of *G. simplicitalis* see Pace (2003).

Etymology. The new species is named for Andrey Plutenko (Russia, Smolensk), who collected the holotype and numerous specimens of *Gyrophaena* in the Russian Far East.

Distribution. Russia (Primorsky Krai).

Gyrophaena taiwaspinosa Pace, 2007

Pace, 2007: 109.

Material examined. Russia: Primorsky Krai, Lazovskiy District, Zapovednoe Village, Ussuri Nature Reserve, (132°20'40" E, 43°38'48" N), 6 exs., 29.07.1999, leg. J. Sundukow (cSch).

Comments. The species was previously known only from Taiwan (Pace, 2007) and is here reported from Russia (Primorsky Krai) for the first time.

Distribution. Russia (Primorsky Krai), Taiwan.

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