

## Correspondence

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**M. V. Mokrousov<sup>1)</sup>, A. S. Lelej<sup>2)</sup>. TO THE TAXONOMY AND BEHAVIOR OF *APTEROGYNA MLOKOSEVITZII* RADOSZKOWSKI, 1879 (HYMENOPTERA: BRADYNOBAENIDAE). – *Far Eastern Entomologist*. 2016. N 324: 17-21.**

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**Summary.** The lectotype is designated for *Apterogyna mlokosevitzii* Radoszkowski, 1879 and new synonymy is proposed for this species (= *Apterogyna volgensis* Panfilov, 1954, **syn. n.**). New data on distribution, biology and behavior of this species are given.

**Key words:** Hymenoptera, Apterogyninae, new synonymy, biology.

**М. В. Мокроусов, А. С. Лелей. К систематике и поведению *Apterogyna mlokosevitzii* Radoszkowski, 1879 (Hymenoptera: Bradynobaenidae) // Дальневосточный энтомолог. 2016. N 324. С. 17-21.**

**Резюме.** Обозначен лектотип *Apterogyna mlokosevitzii* Radoszkowski, 1879 и предложена новая синонимия для этого вида (= *Apterogyna volgensis* Panfilov, 1954, **syn. n.**). Даны новые сведения о распространении, биологии и поведению этого вида.

## INTRODUCTION

Genus *Apterogyna* Latreille, 1809 numbers 35 species distributed in arid areas of the Old World. *Apterogyna mlokosevitzii* Radoszkowski, 1879 is widely distributed Palearctic species.

## MATERIAL AND METHODS

The studied material of *Apterogyna mlokosevitzii* is deposited in the Zoological Institute (St. Petersburg, Russia) [ZISP], Zoological Museum of Moscow State University (Moscow, Russia) [ZMMU] and personal collection of M.V. Mokrousov (Nizhny Novgorod, Russia) [MC]. Photographs were taken with a digital camera Canon Ixus 115 HS.

## Subfamily Apterogyninae

### *Apterogyna mlokosevitzii* Radoszkowski, 1879

*Apterogyna Mlokosevitzii* Radoszkowski, 1879: 151, ♀, ♂. Lectotype (designated here): ♂, Azerbaijan, Baku [ZISP].

*Apterogyna nigra* Dover, 1924: 255. Holotype: ♂, Pakistan, Quetta [Natural History Museum, London, Great Britain]. Synonymized with *Apterogyna mlokosevitzii* by Pagliano, 2002: 81.

*Apterogyna volgensis* Panfilov, 1954: 149. Holotype: ♀, Russia, Stalingrad [now Volgograd] [ZMMU], **syn. n.** Lelej, 1978: 71; Panfilov, 2001: 156; Andreev, 2004: 153; Prisyazhnyuk *et al.*, 2008: 244; Pirogovskij, 2014: 189; Grebennikov, 2015: 173.

*Apterogyna mlokosewitszi* (!): Radoszkowski, 1885: 42; André, 1899: 75, 86; Dover, 1924: 256; Invrea, 1951: 151, 153, 170; 1953: 271; 1962: 132; Pagliano, 2002: 81; Standfuss & Standfuss, 2003: 281. Incorrect subsequent spelling.

*Apterogyna mlokosevitzii* (!): Morawitz F., 1894: 327. Incorrect subsequent spelling.

*Apterogyna mlokosiewitzii* (!): Bischoff, 1920: 40; Skorikov, 1935: 283; Panfilov, 1954: 148. Incorrect subsequent spelling.

*Apterogyna dorsostrinata*: Skorikov, 1935: 283.

*Icalantica mlokosewitszi* (!): Argaman, 1994: 48 (new combination); Komarov, 2004: 45.

**MATERIAL EXAMINED.** Type material. Lectotype of *Apterogyna mlokosevitzii* (designated here), ♂, "Bacu [=Azerbaijan, Baku] // к. Ф. Моравица // *Apterogyna Mlokassewiczii* Radoszk. Typ. [handwritten by F. Morawitz] // *A. dorsostrinata* det. Skor. // *Apterogyna mlokosiewitzii* Rad D. Panfilov det. 1952 // Lectotype *Apterogyna mlokosevitzii* Rad. design. Mokrousov *et al.* 2016 // *Apterogyna mlokosevitzii* Rad. Mokrousov det., 2016". Holotype of *A. volgensis*, ♀, Stalingrad (now Volgograd), Gornaja Poliana, 11.VIII 1951 (L. Zhiltsova) [ZMMU]. Other material. **Armenia:** 4♀, 19♂ (Arax valley, Vagharshapat [=Etchmiadzin], Sevan [=Helenovka], Arzakan, Shatin, Yerevan [=Erevan], Mountains of Armenia) [ZISP]. **Azerbaijan:** 3♀ (Tazakend, Ordubad, Bank vill.) [ZISP]. **Georgia:** 1♀ (Kakheti Prov., David Gareji monastery) [MC]. **Russia:** 19♀, 3♂ (Astrakhan Prov.: 13 km S Liman, B. Bogdo mount.; Dagestan, 9 km SSE Kochubey; Kalmykia: 20 km E Khulhuta, 3 km SE Idjil, 3 km S Tsagan-Nur, 4 km NE Yashkul', 22 km E Yashkul'; Volgograd Prov.: 2 km W Peskovatka) [MC, ZMMU]; **Tadjikistan:** 3♀ (near Khorugh [=Khorog], Panj [=Baumanabad, =Sarai-Kamar]) [ZISP]. **Turkmenistan:** 12♀, 6♂ (Ashgabat [=Ashkhabad], 25 km SE Ashgabat, Firjuza, Gyaurs, 15 km S Isgender [=Iskander], Chikishlyar [=Tschikischljär], Esenguly [=Gasankuli], Garrygala [=Kara-Kala, =Makhtumkuli], Turkmenbashi [=Krasnovodsk], Yarty-Kala, 180 km S Merv, Yoloten [=Iolotan]) [ZISP]. **Uzbekistan:** 2♀, 2♂ (Kagan, Karshi, near Kattakurgan [=Kumak]) [MC, ZISP].

**DISTRIBUTION.** Russia (Volgograd Prov., Astrakhan Prov., Kalmykia, Dagestan), Morocco, Algeria, Tunisia, Libya, Greece, Turkey, Lebanon, Syria, Israel, Georgia, Armenia, Azerbaijan, Iran, Turkmenistan, Uzbekistan, Tajikistan, ?Pakistan.

**REMARKS.** The syntypes of *Apterogyna mlokosevitzii* include at least two females and two males, because body length in description 7–9 mm for female and 10–12 mm for male which are originated from Caucasus (Radoszkowski, 1879). One male (syntype) is deposited in ZISP and designated here as lectotype. The previous designation of lectotype (as holotype) by G. Pagliano (2002: 81) is invalid according to Article 74.7 of ICZN (1999). G. Pagliano has not examined the syntypes of *A. mlokosevitzii* and regarded the specimen from Khodzhakala or Chikishlyar (Turkmenistan) collected by I. Pomeranzev (Morawitz, 1894) [after 1880, later than description of *A. mlokosevitzii*] as holotype.

Quite possible that another paralectotypes of *A. mlokosevitzii* are deposited in the Museum für Naturkunde der Humboldt-Universität, Berlin, Germany where the part of O.I. Radoszkowski collection was stored.

The female of *Apterogyna volgensis* Panfilov, 1954 differs from that of *A. mlokosevitzii* by denser pubescence and broader mesosoma (Panfilov, 1954). These characters are the part of variability *A. mlokosevitzii*. Thus, *A. volgensis* Panfilov, 1954 is a new junior subjective synonym of *A. mlokosevitzii* Radoszkowski, 1879.

**BIOLOGY AND BEHAVIOR.** The hosts of Bradynobaenidae still unknown. The information about the bradynobaenid species which was ectoparasitoid of Solifugae (Arachnida) and pupation within the shelter of the host in North America (Goulet, Huber, 1993) is quite debatable. Indeed the distribution of Solifugae and Bradynobaenidae very similar in both the New and Old World.

For the checking of host relations between Solifugae and *Apterogyna* species the experiment was made. One specimen of solifuge *Galeodes araneoides* (Pallas, 1772) (Galeodidae) was collected in Volgograd Province and placed in the terrarium where solifuge prepared burrow. Somewhat later in the opposite corner of terrarium the apterogyne female (collected in Volgograd Province) was placed also. After a while, apterogyne began to explore new territory, demonstrating behavior similar to hunting. During experiment apterogyne does not respond to solifuge in burrows, not trying to go inside the burrows. In some cases, apterogynes were eaten by solifuge. The experiment was repeated several times with different sizes of solifuges, but without positive result.



Figs 1–2. *Apterogyna mlokosevitzii*, lectotype, ♂. 1 – habitus, 2 – labels.

Observations of the behavior of *A. mlokosevitzii* in nature was carried out in 2012–2015. Apterogynes are most often found in well warmed sites with heavy clay soil (edges of dirt roads, slopes of hills and ravines). Rarely apterogynes were registered on sandy soils. In some localities, *A. mlokosevitzii* is common species, especially in the second half of the summer and autumn.

The apterogyn females are active in daylight hours, and contrary to the velvet ants (Mutillidae), they are rare in the evening time before sunset. Females are quickly running on the soil keeping the metasoma in vertical position. From time to time they stop and dig the soil,

usually in places with no visible burrows. Occasionally they dig down metasoma and carry it on the ground making a belly oscillatory motion. Finding burrows and cracks in the ground, apterogyne only briefly run into them, quickly crawl back to the surface and continue to survey. Double cases were noted when apterogyne long examined cow feces and went deep into the kaphrophagous trenches. In these cases, females were lost and it was impossible for them to dig out.

Based on our experiments and observations in nature we propose the hypotheses, that most likely the hosts of *Apterogyna* is scarabaeid larvae likely to the biology of related Scoliidae and Tiphiidae. One specimen of *A. mlokosevitzii* was collected by P. A. Petrisheva (Yoloten, Turkmenistan) in the nest of rodents.

The males visited the flowers *Alhagi pseudalhagi* (Fabaceae).

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