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The first record of *Micaria bonneti* (Aranei: Gnaphosidae) in Mongolia

Первая находка *Micaria bonneti* (Aranei: Gnaphosidae) в Монголии

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KEY WORDS: Araneae, spider, China, Tuva, new record, accessorial gland, receptacular gland, type locality.

КЛЮЧЕВЫЕ СЛОВА: Araneae, паук, Китай, Тува, новая находка, вспомогательная железа, железа рецептакулы, типовое местообитание.

ABSTRACT: *Micaria bonneti* Schenkel, 1963, a species known only from China, is reported from Mongolia. Conspecificity of this species with specimens from Hubei Province and the central part of Inner Mongolia (type locality) is doubtful. *M. mongunica* Danilov, 1997, a species known by the holotype female from Western Tuva, is most likely a junior synonym of *M. bonneti*. Erroneous data about the type locality of *M. bonneti* is corrected. The epigyne of *M. bonneti* is illustrated in detail, and its structure is discussed.

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РЕЗЮМЕ: *Micaria bonneti* Schenkel, 1963, вид ранее известный только из Китая, впервые отмечен в Монголии. Конспецифичность популяций из провинции Хебей и центральной части Внутренней Монголии (типовое местообитание) ставится под сомнение. *Micaria mongunica* Danilov, 1997 известная по голотипу из Западной Тувы возможно является младшим синонимом *M. bonneti.* Уточнено типовое местообитание *M. bonneti*. Эпигина *M. bonneti* детально проиллюстрирована, обсуждаются детали её строения.

Introduction

While identifying spiders from Mongolia, I found four specimens of gnaphosids that resembled by light coloration *Synaphosus* Platnick et Shadab, 1980 or *Leptodrassex* Murphy, 2007; however, the epigynes indicated that they belong to *Micaria* Westring, 1851. Most *Micaria* have dark areas on some parts of the body and are covered with numerous, flat iridescent scales. Study of these specimens reveal that they belong to *Micaria bonneti* Schenkel, 1963, a species only known from females, distributed in Gansu, Inner Mongolia and Hebei Provinces of China [Song *et al*., 2004; Li, Lin, 2016]. A literature search revealed that the record of this species from Gansu is incorrect, as the specimen referred to in Schenkel [1963] is actually from Inner Mongolia (type locality). Additionally, the record from Hebei may refer to another species, and *M. bonneti* may be a senior synonym of *M. mongunica* Danilov, 1997, a species only known from Tuva. The goals of this paper are to provide detailed illustrations of *M. bonneti* based on the specimens from Mongolia and to discuss the distribution, and importance of the accessorial gland in distinguishing *Micaria* species.

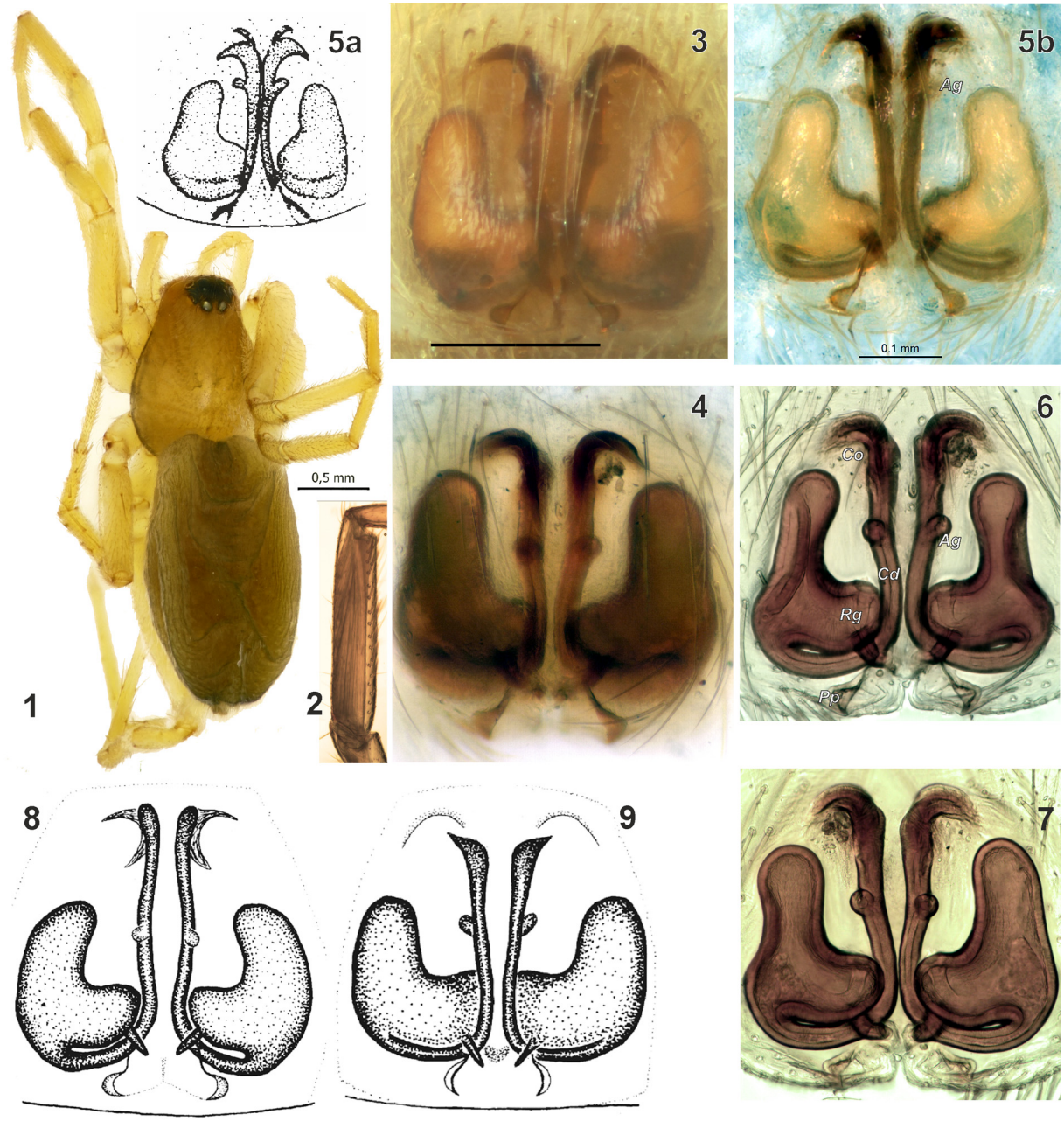
Material and methods

Specimens were photographed with a Canon EOS 7D camera attached to an Olympus SZX16 stereomicroscope and Pro-Microscan camera attached to the Olympus BH-2. Digital images were montaged using CombineZP and Helicon focus 3.10 image stacking software. Epigynes were cleared in a KOH/water solution until soft tissues were dissolved. Material studied here will be shared between the Zoological Museum of Moscow State University and the Hungarian Museum of Natural History (Budapest).

Taxonomy

Micaria bonneti Schenkel, 1963
Figs 1–8, Map 1.

M. b. Schenkel, 1963: 274, f. 155 (♀).
M. b.: Zhang, 1987: 182, f. 153.1–3 (♀).
M. b.: Danilov, 1997a: 114, f. 1C–D (♀).
M. b.: Song *et al.,* 1999: 452, f. 264A (♀).
M. b.: Song *et al.,* 2001: 347, f. 224A–B (♀).



Figs 1–5. Habitus and epigyne of *Micaria bonneti* (1–8) and *M. mongunica* (9). 1 — habitus, dorsal; 2 — tibia I, prolateral; 3, 5 — intact epigyne, ventral; 4, 5b, 6–9 — dissected epigyne, ventral. 1–4, 6–7 — specimen from Mongolia; 5a — specimen from Hubei, after Zhang (1987); 5b — specimen from Hubei (photo by Zhang Feng); 8–9 — holotypes (after Danilov, 1997). Scale 0.2 mm (Figs.3–4).

Abbreviations: *Ag* — accessorial gland, *Cd* — copulatory duct, *Co* — copulatory opening, *Pp* — posterior pocket, *Rg* — receptacular gland.

Рис 1–5. Габитус и эпигина *Micaria bonneti* (1–8) и *M. mongunica* (9). 1 — габитус, сверху; 2 — голень I, спереди; 3, 5 — интактная эпигина, снизу; 4, 5b, 6–9 — отпрепарированная эпигина, снизу. 1–4, 6–7 — экземпляры из Монголии; 5a — самка из провинции Хэбэй, по Zhang [1987]; 5b — самка из провинции Хэбэй (фото Zhang Feng); 8–9 — голотипы (по Danilov [1997]). Масштаб 0,2 мм (рис.3–4).

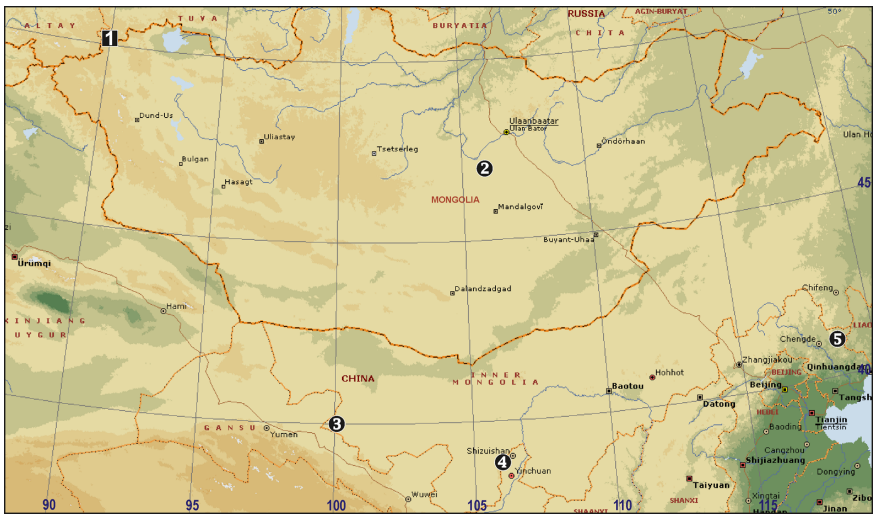
Сокращения: *Ag* — вспомогательная железа, *Cd* — копулятивная канал, *Co* — копулятивное отверстие, *Pp* — задний карман, *Rg* — железа рецептакулы.

M. b.: Song *et al.,* 2004: 168, f. 98A–B (♀).

NOTE: Figures published by Song *et al.* [1999, 2001, 2004] are copies of Danilov's [1997] figures.

MATERIAL EXAMINED: 4 ♀♀, MONGOLIA, *Central Aimag*: 12 km S von Somon Bajanbaraat, 1380 m, 8.VI.1967. — An einem sandigen, steinigen Berghang 10 Ethylenglycol-Bodenfallen ausgegraben. Aufgenommen am 14.VII.1967 (Z. Kaszab).

DIAGNOSIS. This species differs from other *Micaria* species known from the region by light colouration, lack of scales covering the body and the shape of the epigyne.



Map 1. Distribution records of *Micaria mongunica* (1) and *M. bonneti* (2–5). 1, 3 — type localities; 2 — new record from Mongolia; 4 — Inner Mongolia record from Song *et al*. [2004]; 5 — unspecified record from Hebei Province.

Карта 1. Точки находок *Micaria mongunica* (1) и *M. bonneti* (2–5). 1, 3 — типовые местообитания; 2 — новая находка в Монголии; 4 — находка во Внутренней Монголии (по Song *et al*. [2004]); 5 — находка в провинции Хэбэй без указания конкретного локалитета.

Unlike most *Micaria*, it has globular accessorial glands on copulatory ducts. Three species that occur in China, *M. tuvensis* Danilov, 1993, *M. marusiki* Zhang, Song et Zhu, 2001 and *M. pulicaria* (Sundevall, 1831), also have glands associated with the copulatory ducts, but they are digitiform rather than globular. *M. bonneti* is most similar to *M. mongunica* Danilov, 1997 from Tuva. These two species have some differences in the shape of the copulatory openings (see Danilov, 1997) but have the same colouration. Also, the receptacles, copulatory ducts and their glands are the same shape and, thus, the two species are likely conspecific.

DESCRIPTION. A description of the general morphology, including leg measurements, is provided by Song *et al*. [2004]. The tibia, metatarsus and tarsus of legs I and II have paired ventral rows of setae (Fig. 2). The epigyne is as in Figs 3–8; the epigynal plate is as long as wide; fovea absent, copulatory openings (*Co*) located on the anterior edge of the plate, with a semi-circular sclerotized edge, separated by a septum that is less than one diameter of the pocket; posterior pockets (*Pp*) separated slightly more than the anterior ones; receptacles elongate ovals, bent at a right angle, with the vertical part about 1.7 times longer than horizontal part, and the mesal part of the receptacle with a distinct gland (*Rg*); copulatory ducts (*Cd*) long, parallel and almost touching anteriorly, diverging posteriorly; copulatory ducts with globular accessorial gland (*Ag*).

COMMENTS. The holotype female illustrated by Danilov [1997] has shorter receptacles with equally long horizontal and vertical parts. All specimens from Mongolia have receptacles of the same length, as shown in Figs 6–7. The epigyne of *M. mongunica* described from Tuva (Fig. 9) is almost the same as that of the holotype of *M. bonneti* (Fig. 8), differing slightly in the shape of the copulatory openings. The shape of the receptacles, copulatory ducts and posterior pockets are the same, and the location of accessorial glands are equivalent in the two species. Additionally, the general pattern and size of the body and legs are the same. Therefore, *M. mongunica* may be a junior synonym of *M. bonneti*.

Judging from the anterior position of the accessorial glands shown by Zhang [1987: figs 153.2–3 and Fig. 4] in the specimen from Hebei, this specimen may belong to a separate species. Accessorial glands are not properly documented in many *Micaria* species, but it seems they are present in most (cf. Miller, 1967; Wunderlich, 1979; Marusik, Omelko, 2017). The position and shape of these glands can be used for distinguishing sibling species of *Micaria*. Receptacular glands are schematically shown only by Miller [1967] and only for a few species, although they may be present in several species.

DISTRIBUTION (Map 1). Li & Lin [2016] indicate the distribution of *M. bonneti* as Hebei, Inner Mongolia and Gansu. Schenkel [1963] provided a list of all localities and listed “Fluss Bardun” among the Inner Mongolia localities; however, in the text dealing with a description of the new species he indicated “Fluss Bardun, Kansu”. According to Potanin [1893], the Bardun River is located in Inner Mongolia, and therefore all references to Gansu Province are based on a lapsus in Schenkel [1963]. The exact type locality was located in the expedition description and map given in Patanin [1893].

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