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The first record of the myrmecophilous genus *Thiasophila* from China (Coleoptera: Staphylinidae: Aleocharinae)

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ASSING V. 2021: The first record of the myrmecophilous genus *Thiasophila* from China (Coleoptera: Staphylinidae: Aleocharinae). *Acta Musei Moraviae, Scientiae biologicae* **106(2):** 335–341. – *Thiasophila gansuica* sp. nov. (South Gansu), the first representative of the genus to be recorded from China, is described, illustrated, and distinguished from other congeners recorded from the East Palaearctic region. The myrmecophilous species is associated with *Formica chinensis* Wheeler, 1913 of the *F. truncorum* group. *Thiasophila* Kraatz, 1856 currently includes 18 species worldwide, 13 of which are distributed in the Palaearctic region.

Keywords. Coleoptera, Staphylinidae, Aleocharinae, Oxypodini, *Thiasophila*, taxonomy, new species, description, myrmecophily, China

Introduction

According to NEWTON (2019), the myrmecophilous genus *Thiasophila* Kraatz, 1856 includes 18 species worldwide, 13 of them distributed in the Palaearctic, four in the Nearctic, and one in the Neotropical regions. However, this catalogue still includes *T. rufescens* Sharp, 1874, a species transferred to *Homoeusa* Kraatz, 1856 by MARUYAMA & ZERCHE (2014). Seven of the twelve Palaearctic species are distributed in the West Palaearctic region (including Middle Asia). Three of the five East Palaearctic species are known exclusively from Japan, one from Mongolia, and one from Mongolia, East Siberia, and North Korea (SCHÜLKE & SMETANA 2015). All the species of *Thiasophila* are myrmecophilous and associated with formicine ants (genera *Formica* Linnaeus, 1758, *Lasius* Fabricius, 1804, and *Camponotus* Mayr, 1861). The male and female primary and secondary sexual characters are remarkably uniform in the genus.

A study of several nests of *Formica chinensis* Wheeler, 1914 in South Gansu during a field trip to China conducted by Michael Schülke (Berlin), David Wrase (Gusow-Platkow), and the author yielded two species of myrmecophiles, a new species of *Lomechusoides* Tottenham, 1939 (ASSING 2015) and a series of *Thiasophila*. A comparison of the specimens with material of other *Thiasophila* species and with illustrations and descriptions available in the literature eventually revealed that they represented an undescribed species, the first representative of the genus to be recorded from China.

Material and methods

The type material of *T. gansuensis* is deposited in the author´s collection (cAss).

The morphological studies were conducted using Stemi SV 11 (Zeiss) and Discovery V12 (Zeiss) microscopes, and a Jenalab compound microscope (Carl Zeiss

Jena). The images were created using digital cameras (Axiocam ERc 5s, Nikon Coolpix 995), as well as Labscope and Picolay software.

Body length was measured from the anterior margin of the labrum to the apex of the abdomen, the length of the forebody from the anterior margin of the labrum to the posterior margin of the elytra, head length from the anterior margin of the clypeus to the posterior constriction of the head, elytral length at the suture from the apex of the scutellum to the posterior margin of the elytra, and the length of the aedeagus from the apex of the ventral process to the base of the aedeagal capsule. The "parameral" side (i.e., the side where the sperm duct enters) is referred to as the ventral, the opposite side as the dorsal aspect.

Taxonomy

Thiasophila gansuica sp. nov. (Figs 1–13, 17–18)

Type material examined. Holotype ♂ [with worker of *Formica chinensis* attached to the pin]: "CHINA [7a] – S-Gansu, mountains SE Longnan, *Formica*, 33°13′20″N, 105°15′10″E, 2170 m, 31.VII.2012, V. Assing / Holotypus ♂ *Thiasophila gansuica* sp. n., det. V. Assing 2020" (cAss). Paratypes: 6♂♂, 11♀♀: same data as holotype (cAss); 9♂♂, 11♀♀: "CHINA [18a] – S-Gansu, mts. SE Longnan, nest of *Formica*, 33°11′17″N, 105°14′12″E, 2060 m, 7.VIII.2012, V. Assing" (cAss).

Comment. Six additional specimens were collected in the same localities by Michael Schülke and David Wrase. This material has been out on loan to a colleague for several years and is currently inaccessible.

Description. Body length 3.5–4.7 mm; length of forebody 1.6–2.0 mm. Habitus as in Fig. 1. Colouration: head black; pronotum blackish-brown to black, often with the lateral and posterior margins narrowly and diffusely paler; elytra dark-reddish, usually with the vicinity of the scutellum and the postero-lateral portions extensively infuscate; abdomen with tergites III–IV reddish, V slightly darker in the middle, VI and the anterior portion of VII blackish, and the posterior portions of tergites VII and VIII yellowish to reddish; legs dark-red to reddish-brown; antennae blackish-brown with the basal three antennomeres yellowish to reddish.

Head (Fig. 2) weakly transverse, slightly glossy only in antero-median portion; punctation very dense, moderately coarse, and shallow; interstices with microsculpture. Eyes longer than postocular region in dorsal view. Antenna 1.1–1.2 mm long; antennomeres IV–V as long as broad or weakly oblong, V weakly transverse or as long as broad, VI–X weakly transverse, and XI more than twice as long as broad, longer than the combined length of antennomeres IX and X, and with indistinct sexual dimorphism.

Pronotum (Fig. 2) strongly transverse, 1.55–1.60 times as broad as long and approximately 1.6 times as broad as head, matt; punctation extremely dense and somewhat asperate.

Elytra (Fig. 2) approximately 0.9 times as long as pronotum, matt; punctation extremely dense and asperate. Hind wings present. Metatarsomere I slightly longer than the combined length of metatarsomeres II and III.

Abdomen (Fig. 3): punctation distinct, dense on anterior tergites, rather sparse on tergite VII, and dense on tergite VIII; anterior tergites with shallow, posterior tergites without microsculpture; posterior margin of tergite VII with palisade fringe; tergite VIII (Fig. 4) without sexual dimorphism, posterior margin weakly concave in the middle.

♂: antennomere XI usually weakly constricted in the middle; sternite VIII (Fig. 5) weakly transverse, convexly produced posteriorly; median lobe of aedeagus approximately 0.55 mm long and shaped as in Figs 9–12; paramere 0.8 mm long and shaped as in Fig. 13.

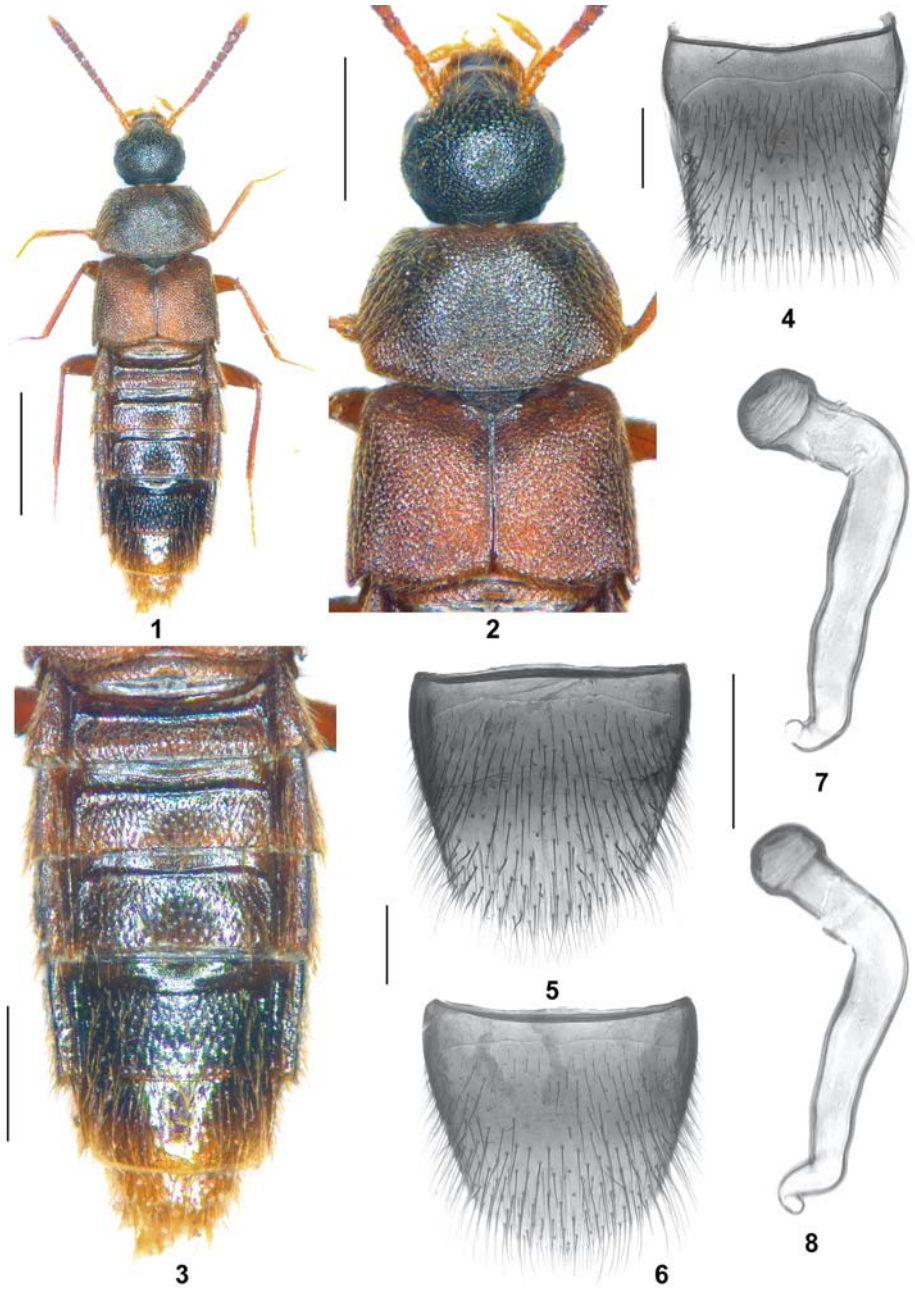
♀: antennomere XI not constricted; sternite VIII (Fig. 6) more transverse and with less strongly convex posterior margin than that of male; spermatheca as in Figs 7–8.

Comparative notes. This species is distinguished from other congeners known from the East Palaearctic region as follows:

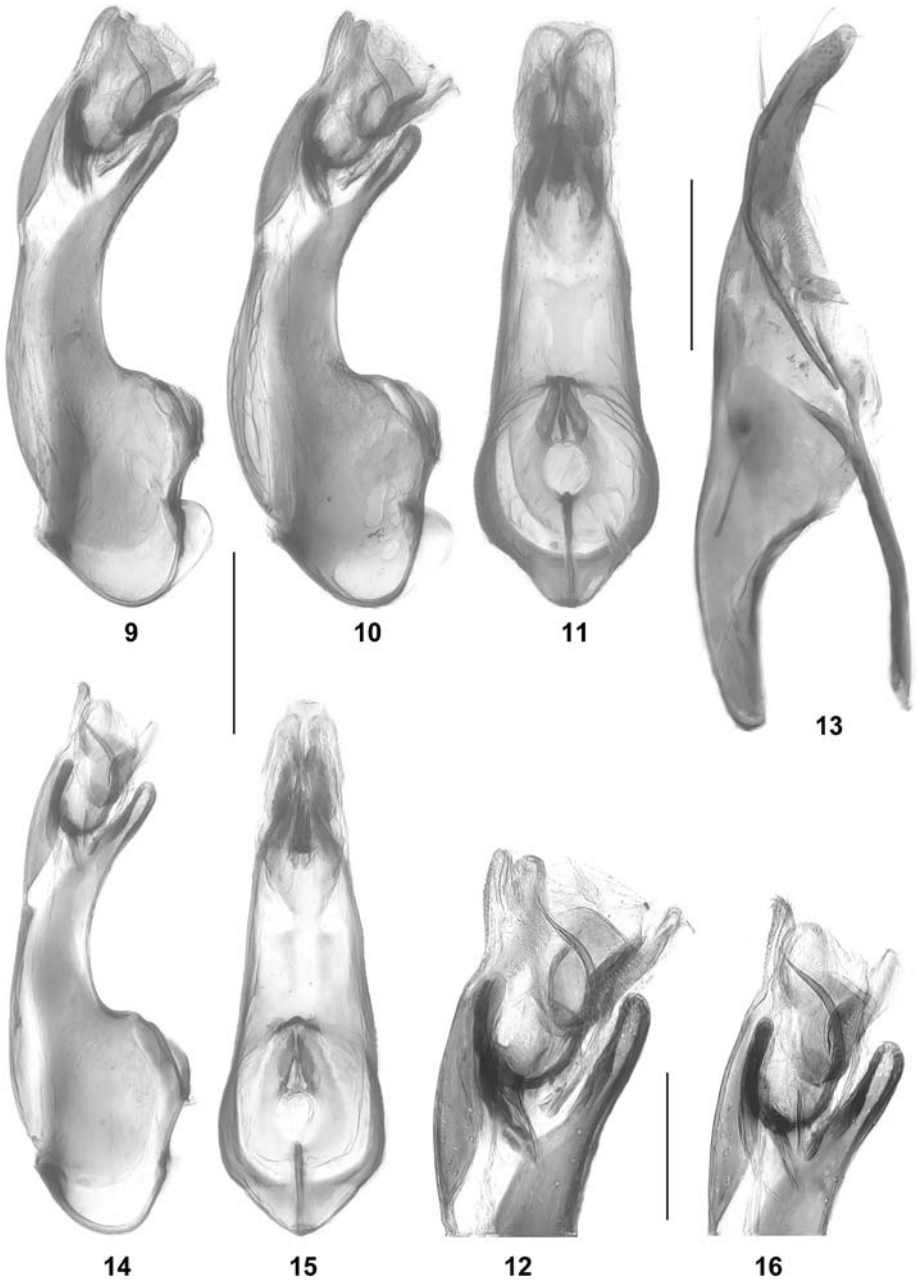
- from *T. pexa* Motschulsky, 1860 (Mongolia, East Siberia, North Korea; host ant: "*Formica cunicularia* Latr.") by larger body size (*T. pexa*: 3.00–3.25 mm), a nearly matt forebody (glossy in *T. pexa*), a less transverse pronotum (*T. pexa*: 1.65–1.75 mm), the presence of microsculpture on the anterior abdominal tergites (absent in *T. pexa*), a larger median lobe of the aedeagus (*T. pexa*: length of median lobe 0.43 mm) with a more slender ventral process (lateral view) and internal structures of different shapes, and by a larger spermatheca;
- from *T. kaszabi* Zerche, 1987 (Mongolia; host ant unknown) by larger body size (*T. kaszabi*: 2.8 mm), darker colouration, and a larger aedeagus (*T. kaszabi*: median lobe approximately 0.4 mm long) with a more pronounced crista proximalis and internal structures of different shapes);
- from *T. shinanonis* Maruyama et Zerche, 2004 (Japan: Honshu; host ant: *Formica yessensis*) by larger body size (*T. shinanonis*: body length 2.9–3.1 mm) and a larger aedeagus (*T. shinanonis*: length of median lobe 0.45 mm) with a larger and more prominent crista proximalis and internal structures of different shapes;
- from *T. nipponica* Maruyama et Zerche, 2004 (Japan: Honshu; host ant: *Lasius* (*Dendrolasius*) sp.) by larger body size (*T. nipponica*: body length 1.95–2.25 mm), longer antennae with a more elongate antennomere XI, and a larger aedeagus (*T. nipponica*: length of median lobe <0.4 mm) with a narrower ventral process in lateral view and internal structures of different shapes.

The comparison is based on descriptions, illustrations, and additional data provided by Zerche (1987) and Maruyama & Zerche (2004).

In external characters, the new species is practically identical to *T. aynumosir* Maruyama et Zerche, 2004 (Japan: Hokkaido; host ant: *Formica truncorum*). A comparison of *T. gansuica* with a male of *T. aynumosir* from Hokkaido revealed that both species are reliably distinguished only by the size of the aedeagus (*T. aynumosir*: median lobe 0.51 mm long) and and its apical internal structures. It should be noted that, according to the description and illustrations provided by Maruyama & Zerche (2004), the pronotum of *T. aynumosir* is brown and the median lobe is 0.5 mm long. The aedeagus of the examined male is illustrated in Figs 14–16.



Figs 1–8. *Thiasophila gansuica* sp. nov. 1 – habitus; 2 – forebody; 3 –abdomen; 4 – male tergite VIII; 5 – male sternite VIII; 6 – female sternite VIII; 7–8 – spermatheca. Scale bars: 1: 1.0 mm; 2–3: 0.5 mm; 4–6: 0.2 mm; 7–8: 0.1 mm.



Figs 9–16. *Thiasophila gansuica* sp. nov. (9–13) and *T. aynusomir* Maruyama et Zerche (14–16). 9–11, 14–15 – median lobe of aedeagus in lateral and in ventral view; 12, 16 – apical portion of median lobe in lateral view; 13 – paramere. Scale bars: 9–11, 14–15: 0.2 mm; 12, 16: 0.1 mm.

Figs 17–18. *Thiasophila gansuica* sp. nov. 17 – type locality; 18 – nest mound of *Formica chinensis*.

Distribution and natural history. The species is currently known only from two close localities in the mountains to the southeast of Longnan, South Gansu. The specimens were sifted from nest mounds of *Formica chinensis* (Fig. 18) in a north slope with shrubs, herbs, and small trees (Fig. 17) and a north slope with scree at altitudes 2170 and 2060 m, respectively. The specimens were found together with the type material of a recently described species of *Lomechusoides* Tottenham, 1939 (Assing 2015).

Etymology. The specific epithet is an adjective derived from Gansu, the province where the species was discovered.

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