



New and little known species of the genus *Songi* (Coleoptera: Staphylinidae: Pselaphinae) in China

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Abstract

Two new species of the myrmecophilous genus *Songi*, *S. kiwi* **new species** (from Guangxi, southern China), and *S. pseudohlavaci* **new species** (from Hunan, central China), are described and illustrated. Additional collection records for *S. lasiuohospes* and *S. hlavaci*, as well as an identification key to the species, are given.

Key words: myrmecophile, *Songi*, *Lasius*, new species, new collection records, key, China

Introduction

The recently created genus *Songi* Yin & Li contains two species from the West Tianmu Mountain (eastern China: Zhejiang): the type species *S. lasiuohospes* Yin, Li & Zhao and *S. hlavaci* Zhao, Yin & Li (Yin, Li & Zhao 2010; Zhao, Yin & Li 2010). Though sometimes collected from litter samples, adults of *Songi* are commonly discovered with *Lasius* ants, and males are more rarely collected than females. The presence of trichomes at the sides of the head, the moniliform antennae, and the stout body form are suggestive of myrmecophily, while the biology of these inquilines, e.g. how they communicate with ants, their feeding and mating behaviors, still remains unclear. The immature stage of *Songi* is poorly documented, with only a presumed larva of *S. hlavaci* described (Zhao, Yin & Li 2010), however this larva-adult association still needs to be confirmed.

During visits to the National Museum of Nature and Science, Tokyo and the Muséum d'histoire naturelle, Geneva in 2012 and 2013, the senior author spotted a small number of *Songi* from several nature reserves in China, including Hailuoguo (Sichuan), Xiaoxiang Ling (Sichuan), Qing Ling (Shaanxi), Daba Shan (Shaanxi), Gongga Shan (Sichuan), and Maoer Shan (Guangxi). Unfortunately, each locality was represented by a single female, preventing further description of these potentially different species.

Recently, a small series of *Songi* collected from Guangxi and Hunan was available to us. The Guangxi material contains one male and five females collected during the 2012 and 2014 expeditions at the Maoershan Mountain, together with a single male from the Yangming Mountain of the Hunan Province collected in 2004. Both populations exhibit a unique suite of morphological characters that provides ready separation from the two known congeners in Zhejiang, representing two new species which are formally described here. Additional collection data of *S. lasiuohospes* and *S. hlavaci* in Zhejiang are provided, as well as an updated identification key to the males.

Material and methods

Material treated in this paper is housed in the following public institutions:

SNUC Insect Collection of the Shanghai Normal University, Shanghai, China (Zi-Wei Yin)

NSMT National Museum of Nature and Science, Tokyo, Japan (Shûhei Nomura)

Additional records for known species

Songius lasiuohospes Yin, Li, and Zhao

Figs 4A, 5A–B

Songius lasiuohospes Yin, Li, and Zhao, 2010: 245.

Additional material. 1 ♀, labeled ‘China: Zhejiang, Linan City, West Tianmu Shan, firebreak nr. Immortal Peak, 1400 m, 30°21’02’’N, 119°25’10’’E, *Lasius* nest in fallen rotten tree, 13.viii.2013, Zhao & Yin leg.’ (SNUC).

Distribution. Eastern China: Zhejiang.

Comments. This species was originally described from a single male collected with *Lasius* ants under a rock. The present female (Fig. 4A), was discovered in a *Lasius* colony nesting in a fallen rotten tree. Distribution of this species is currently restricted to the high altitude area of the West Tianmu Mountain.

Songius hlavaci Zhao, Yin and Li

Figs 4B, 5C–D

Songius hlavaci Zhao, Yin and Li, 2010: 79.

Additional material. (2 ♂♂, 6 ♀♀). 1 ♂, 3 ♀♀, labeled ‘China: Zhejiang, Anji County, Longwang Shan, N. R., Qianmutian–Qianmu Peak, 30°23’47’’N, 119°26’17’’E, 1250–1450 m, mixed leaf litter, sifted, 14.v.2013, Chen & Pan leg.’ (SNUC); 1 ♂, also from Longwang Shan, ‘Qianmutian, 30°24’20’’N, 119°26’39’’E, ca. 1300 m, sifted from mixed leaf litter, 2012.vi.08, Zi-Wei Yin & Jia-Yao Hu leg.’ (SNUC); 1 ♀, also from Longwang Shan, ‘Tonghang-gang Hill, 30°24’54’’N, 119°26’53’’E, bamboo, pine leaf litter, sifted, 10.vi.2012, Jia-Yao Hu & Zi-Wei Yin leg.’ (SNUC); 1 ♀, labeled ‘CHINA: Zhejiang, Linan City, W. Tianmu Shan N. R., firebreak between peak and Longfengjian Park, 30°20’56’’N, 119°25’55’’E, 1320 m, from of nest of *Lasius* sp., 06.ix.2012, Feng, Hu, Yin leg.’ (SNUC); 1 ♀, labeled ‘China, Zhejiang, Qingliangfeng Mt., Luminyougu Valley, ca. 30°06’32’’N, 118°54’01’’E, 890 m, 20.vii.2009, Feng, Yuan & Yin leg.’ (SNUC).

Distribution. Eastern China: Zhejiang.

Comments. *Songius hlavaci* (Fig. 4B) was described based on one male and two females from the West Tianmu Mountain (1200–1400 m). The additional material extends the distributional range of this species to the Longwang Mountain and the Qingliangfeng Mountain.

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References

- Chandler, D.S. (2001) Biology, morphology, and systematics of the ant-like litter beetles of Australia (Coleoptera: Staphylinidae: Pselaphinae). *Memoirs on Entomology International*, 15, 1–560.
- Yin, Z.W., Li, L.Z. & Zhao, M.J. (2010) Contributions to the knowledge of the myrmecophilous pselaphines (Coleoptera, Staphylinidae, Pselaphinae) from China. III. Two new genera and two new species of the subtribe Batrisina (Staphylinidae, Pselaphinae, Batrisitae) from a colony of *Lasius niger* (Hymenoptera, Formicidae, Formicinae) in East China. *Sociobiology*, 55, 241–253.
- Zhao, M.J., Yin, Z.W. & Li, L.Z. (2010) Contributions to the knowledge of the myrmecophilous pselaphines (Coleoptera, Staphylinidae, Pselaphinae) from China. IV. The second species of the genus *Songius* (Coleoptera, Staphylinidae, Pselaphinae), with description of its probable mature larva. *Sociobiology*, 56, 77–89.