



Three new species of genus *Sinophorus* Förster (Hymenoptera, Ichneumonidae) parasitizing twig and defoliating Lepidoptera

MAO-LING SHENG^{1,3}, TAO LI¹ & JIANG-FENG CAO²

¹General Station of Forest Pest Management, State Forestry Administration, Shenyang, Liaoning, 110034, China

²Forestry Pest Control and Quarantine Station of Chengde, Hebei, 067000, China

³Corresponding author. E-mail: shengmaoling@163.com

Abstract

Three new wasp species are described from the subfamily Campopleginae (Hymenoptera: Ichneumonidae), *Sinophorus bazariae* Sheng, **sp. n.**, reared from *Bazaria turensis* Ragonot (Lepidoptera, Pyralidae) in Dulan County, Qinghai Province, China, *S. nigrus* Sheng, **sp. n.**, reared from *Epinotia rubiginosana rubiginosana* (Herrich-Schäffer) (Lepidoptera, Tortricidae) in Weichang, Hebei Province, and *S. zeirapherae* Sheng, **sp. n.**, reared from *Zeiraphera grisecana* (Hübner) (Lepidoptera, Tortricidae) in Liupanshan, Ningxia Hui Autonomous Region. A key to the species of Chinese *Sinophorus* is provided.

Keywords: Campopleginae, new species, key, hosts, Pyralidae, Tortricidae, China

Introduction

Sinophorus Förster, 1869 belongs to the subfamily Campopleginae (Hymenoptera: Ichneumonidae), and comprises 114 species (Yu *et al.* 2012, Sheng & Sun 2014a), of which 47 are from the Palaearctic Region (one also distributed in the Afrotropical, eight in Oriental Regions) (Sanborne 1984), 11 from the Oriental (two also distributed in the Palaearctic and Afrotropical regions) (Sheng & Sun 2014a), one from the Afrotropical, 63 from the Nearctic (three also distributed in the Palaearctic). So far, nine species are known from China (Sheng & Sun 2010, 2014b).

The world species of *Sinophorus* Förster were revised with a key by Sanborne (1984). A supplement was provided by Sanborne (1986). Later, a new species distributed in Taiwan was described by Sanborne (1990). The parasitoid of *Dioryctria rubella* Hampson (Lepidoptera, Pyralidae), *S. fuscicarpus* (Thomson, 1887), was reported by Sheng & Sun (2010, 2014b), and Sun *et al.* (2006). The Japanese species parasitizing *Amphipoea* spp. (Lepidoptera, Noctuidae) was described by Kusigemati (1993).

The status of the genus was elucidated by Sanborne (1984), Sheng & Sun (2010), and Townes (1970).

In this article, three new species of *Sinophorus*, reared from twig pest insects in Hebei and Qinghai Provinces and Ningxia Hui Autonomous Region, situated in the southern border of the Palaearctic Region of China, are reported.

Material and methods

Insects for this study were collected using the following techniques. Mature larvae and cocoons of hosts were collected from three forests where there had been an outbreak and lasting at least three years. The first forest is located in Dulan County, Qinghai Province. The forest is a shrubby and composed of *Nitraria tangutorum* Bobr., *Lycium chinense* Miller var. *potaninii* (Pojarkova) A.M.Lu, *Kalidium foliatum* (Pall.) Moq. The second forest composed of *Pinus tabulaeformis* Carrière, is located in Weichang County, Hebei Province. The third forest composed of *Larix principis-rupprechtii* Mayr., is located in Liupanshan, Ningxia Hui Autonomous Region.

corresponding author was working in respective collections. The authors also wish to thank Profs. De-Jia Li (Forestry Pest Control and Quarantine Station of Ningxia Hui Autonomous Region, Yinchuan, China) and Yan-Ling Zhang (Forestry Pest Control and Quarantine Station of Dulan, Qinghai, China) for their help in the course of exploration in Qinghai Province and Ningxia Hui Autonomous Region, and Dr Dicky S.K. Yu (Canadian National Collection, Ottawa, Canada) for presenting valuable materials. This research was supported by “Twelfth Five-year” National Science and Technology Support Program of China (Grant No. 2012BAD19B0701) and by the National Natural Science Foundation of China (NSFC, No. 31070585, No. 31310103033).

References

- Förster, A. (1869) Synopsis der Familien und Gattungen der Ichneumoniden. *Verhandlungen des Naturhistorischen Vereins der Preussischen Rheinlande und Westfalens*, 25 (1868), 135–221.
- Kasparyan, D.R. (1976) The new species of Ichneumonids of the subfamily Campopleginae (Hymenoptera: Ichneumonidae) from the eastern Palearctic. *Trudy Zoologicheskogo Instituta*, 64, 68–75.
- Kusigemati, K. (1993) Description of a new Ichneumonfly (Hymenoptera) parasitic on *Amphipoea* spp. (Lepidoptera, Noctuidae) from Japan. *Memoirs of the Faculty of Agriculture, Kagoshima University*, 29 (38), 89–91.
- Sanborne, M. (1984) A revision of the world species of *Sinophorus* Förster (Ichneumonidae). *Memoirs of the American Entomological Institute*, 38, 1–403.
- Sanborne, M. (1986) A revision of the world species of *Sinophorus* Förster (Ichneumonidae): Supplement 1. *Contributions to the American Entomological Institute*, 22 (11), 1–8.
- Sanborne, M. (1990) Description of *Sinophorus wushensis*, a new species of Ichneumonidae from Taiwan (Hymenoptera). *Canadian Entomologist*, 122, 109–111.
- Sheng, M.-L. & Sun, S.-P. (2010) *Parasitic ichneumonids on woodborers in China (Hymenoptera: Ichneumonidae)*. Science Press, Beijing, China, 338 pp.
- Sheng, M.-L. & Sun, S.-P. (2014a) A new species of genus *Sinophorus* Förster (Hymenoptera, Ichneumonidae) from China. *Proceedings of the Russian Entomological Society*, 85 (1), 133–137.
- Sheng, M.-L. & Sun, S.-P. (2014b) *Ichneumonid Fauna of Liaoning (Hymenoptera: Ichneumonidae)*. Science Press, Beijing, China, 464 pp.
- Sonan, J. (1939) Four new species of the Ichneumon-flies from Formosa (Hymenoptera). *Transactions of the Natural History Society of Formosa, Taihoku*, 29, 201–204.
- Sun, S.-P., Guo, Z.-H., Zhang, Y.-Q., Sheng, M.-L. & Chen, G.-F. (2006) Ichneumonids (Hymenoptera: Ichneumonidae) parasitizing *Dioryctria rubella* in Shengyang. *Forest Pest & Disease*, 25 (2), 11–13.
- Townes, H.K. (1970) The genera of Ichneumonidae, Part 3. *Memoirs of the American Entomological Institute*, 13 (1969), 1–307.
- Yu, D.S., van Achterberg, C. & Horstmann, K. (2012) Taxapad 2012 - World Ichneumonidae 2011. Taxonomy, Biology, Morphology and Distribution. On USB Flash drive. Ottawa, Ontario, Canada. Available from: www.taxapad.com (Accessed 20 Apr. 2015)