

Eumenes labiatus labiatus (Hymenoptera: Vespidae): A New Host Record of *Macrosiagon nasuta* (Coleoptera: Ripiphoridae)

FANG-SHUO HU^{1,†}, MEI-LING LO^{2,3}

¹ Department of Entomology, National Chung Hsing University, No. 250, 145 Xingda Rd., Taichung, 40227, Taiwan.

² The Society of Warness, Taoyuan Branch, Republic of China, No. 10, Ln. 122, Puguang 2nd St., Zhongli Dist., Taoyuan City 320, Taiwan (R.O.C.)

³ The Butterfly Conservation Society of Taiwan, 1F., No. 19, Ln. 103, Wanquan St., Datong Dist., Taipei City 103, Taiwan (R.O.C.) E-mail: m026802@yahoo.com.tw

† Corresponding author: fangshuo_hu@smail.nchu.edu.tw

Abstract: Within the genus *Macrosiagon* Hentz, 1830, *M. nasuta* (Thunburg, 1784) (Coleoptera: Ripiphoridae) is one of the most thoroughly investigated parasitoids with respect to its host requirements. We report a new host record of *M. nasuta*, *Eumenes labiatus labiatus* (Hymenoptera: Vespidae) from Taiwan based on a specimen reared from a *E. l. labiatus* nest. This observation, along with the published data, support the notion that *M. nasuta* is exclusively a parasitoid of vespid wasps in the subfamily Eumeninae.

Key words: Parasitoids, Host associations, Oriental region, Palearctic region, Taiwan, Ripiphorinae, Eumeninae

The ripiphorid beetles (Ripiphoridae) are an interesting family due to their parasitoidal lifecycles and diverse host preferences. Within the subfamily Ripiphorinae, hosts preferences are restricted to hymenopterans, including the families Apidae, Crabronidae, Halictidae, Pompilidae, Scoliidae, Sphecidae, Tiphidae and Vespidae (Selander, 1991; Falin, 2002; Batelka & Hoehn, 2007). *Macrosiagon nasuta* (Thunburg, 1784) is widely distributed throughout the Oriental and Palearctic regions, with records from: China; India (Nicobar Islands); Indonesia (Sumatra, Sulawesi); Japan; Korea; Laos; Malaysia (Borneo); the Philippines; Taiwan and Tibet (Batelka, 2004; 2011). The larva of *M. nasuta* is thought to only attack members of the vespid subfamily Eumeninae, based on 14 recorded hosts (Batelka & Hoehn, 2007). *M. nasuta* was first reported in Taiwan by Schilder (1923), but until now, there have been no host records for this Taiwanese population. In this paper, we report the first host record of *M. nasuta* in Taiwan, *Eumenes labiatus labiatus*, one of three *Eumenes* spp. known to be parasitized by *M. nasuta*. This record is based on an observation made by the second author in Hutou Mountain (虎頭山), Taoyuan City, Taiwan (near 25.00, 121.33) from October to November in 2016, with a live *M. nasuta* specimen released back to the same locality after eclosion.

The second author collected an *E. l. labiatus* nest from the field: the upper half of the nest was removed and a mature larva of the wasp and at least five mature lepidopteran larvae in the family Geometridae were found in the cell of the host wasp (Fig. 1A). After 16 days, all geometrid larvae, as well as the larva of the wasp, unexpectedly disappeared, presumably having been consumed by the *M. nasuta* larva; the pre-pupa of *M. nasuta* was found at the same time (Fig. 1B). A *M. nasuta* pupa was found in the cell 9 days after the discovery of the pre-pupa (Fig. 1C) and the newly eclosed adult was found after 6 days of pupation (Fig. 1D).

Batelka & Hoehn (2007) concluded that *M. nasuta* attacks only eumenine wasps, and our observation supports this hypothesis. Unfortunately, we did not get an opportunity to make detailed observations of the process by which the *M. nasuta* larva attacked the wasp larva, and such observations in the future may provide further interesting studies.

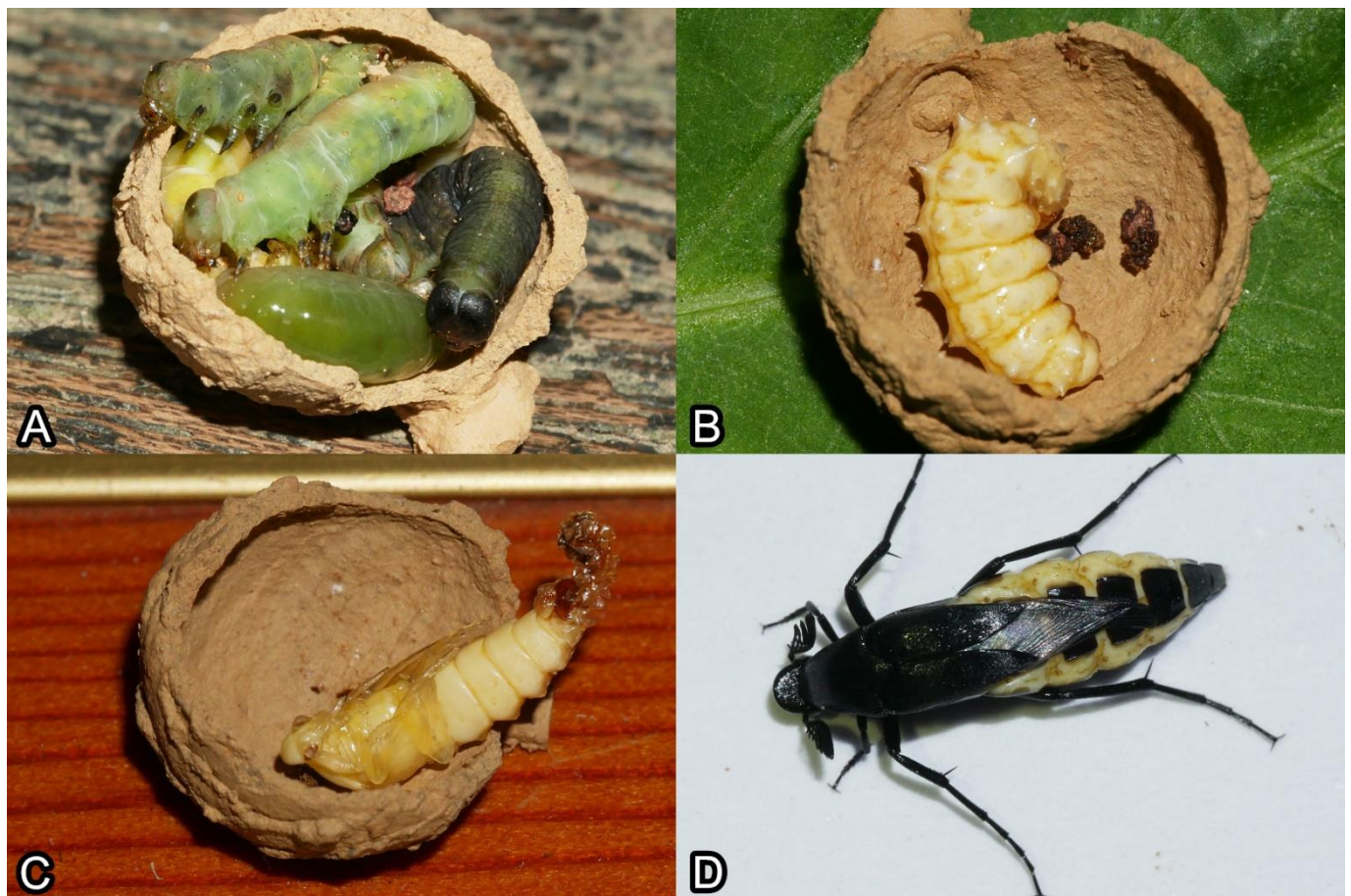


Figure 1. Food source of *Macrosiagon nasuta* in the cell of *Eumenes labiatus labiatus*, prepupa of *M. nasuta*, pupa of *M. nasuta* and newly enclosed *M. nasuta*. A - Mature larva of *E. l. labiatus* and mature larvae of Geometridae (Lepidoptera) in the cell of *E. l. labiatus*; B - Prepupa of *M. nasuta* in the cell of *E. l. labiatus*; C- Pupa of *M. nasuta* in the cell of *E. l. labiatus*; D - Newly enclosed adult of *M. nasuta*.

References

- Batelka, J. 2004. Contribution on the synonymy of Palaearctic and Oriental species of *Macrosiagon* (Coleoptera: Ripiphoridae). Part II. *Acta Societatis Zoologicae Bohemicae* 68: 9–13.
- Batelka, J. 2011. Contribution to the synonymies, distributions, and bionomics of the Old World species of *Macrosiagon* (Coleoptera: Ripiphoridae). *Acta Entomologica Musei Nationalis Pragae* 51 (2): 587–626.
- Batelka, J. & Hoehn, P. 2007. Report on the host associations of the genus *Macrosiagon* (Coleoptera: Ripiphoridae) in Sulawesi (Indonesia). *Acta Entomologica Musei Nationalis Pragae* 47: 143–152.
- Falin, Z. H. 2002. Ripiphoridae Gemminger & Harold 1870 (1853). pp. 431–444. In: Arnet R. H., Thomas M. C., Skelley P. E. & Frank J. H. (eds) *American beetles, Volume 2: Polyphaga: Scarabaeoidea through Curculionioidea*. CRC Press, Boca Raton, FL, USA.
- Schilder, F. A. 1923. Sauter's Formosa-Ausbeute Rhipiphoridae (Col.), (Zugleich: Rhipiphoriden-Studien III). *Entomologische Mitteilungen* 12: 202–204.
- Selander, R. B. 1991. Rhipiphoridae (Tenebrionidea). pp. 509–512. In: Stehr, F. W. (eds) *Immature Insects Volume 2*. Kendall/Hunt Publishing Company, Iowa.

赭褐凹背蜾蠃（膜翅目：胡蜂科）：無紋巨噬蜂大花蚤之新寄主紀錄（鞘翅目：大花蚤科）

胡芳碩^{1,†}、羅美玲^{2,3}

¹國立中興大學 昆蟲學系 402 臺中市南區興大路145號

²中華民國荒野保護協會 桃園分會 桃園市中壢區普光二街122巷10號

³台灣蝴蝶保育學會 臺北市大同區萬全街103巷19號1樓

† Corresponding author: fangshuo_hu@smail.nchu.edu.tw

摘要：無紋巨噬蜂大花蚤為巨噬蜂大花蚤屬中寄主偏好被調查最徹底的種類，本篇文章中我們藉由自赭褐凹背蜾蠃的巢中成功飼養出無紋巨噬蜂大花蚤之成蟲，佐證此為無紋巨噬蜂大花蚤的新寄主紀錄，總結已發表資料與本篇觀察，無紋巨噬蜂大花蚤被認為只寄生蜾蠃亞科（胡蜂科）的蜂類。

關鍵字：擬寄生性昆蟲、寄主關係、東方區、古北區、臺灣、大花蚤亞科、蜾蠃亞科