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Letter

Introduction to the Korean Myrmecophilous Carabid, *Lachnoderma asperum* Bates, 1883, with Its Enigmatic Ecology

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Myrmecophily, in which insects live in association with ants for part or all of their life cycle, has been documented across a wide range of insect groups. Coleoptera, in particular, show a high frequency of myrmecophilous taxa, likely due to their hardened elytra and frequent occupation of ground-level microhabitats that facilitate interactions with ants (Parker, 2016). Within Carabidae, myrmecophily occurs in several lineages, with Paussinae and Pseudomorphinae being the most remarkable subfamilies. These two subfamilies exhibit morphological adaptations as symphilies and synechthrans, respectively, whereas in other carabid lineages, myrmecophilous traits occur sporadically. One such example is *Lachnoderma asperum* Bates, 1883, a member of the subfamily Lebiinae.

L. asperum is a ground beetle approximately 8 mm in body length and can be regarded as the only carabid species currently known to be myrmecophilous in Korea. Outside Korea, it is distributed in China, Taiwan, and Japan (Choi et al., 2020). Although its myrmecophilous ecology is recognized, it does not exhibit the dramatic morphological modifications seen in the two aforementioned subfamilies (i.e., Paussinae and Pseudomorphinae) and closely resembles typical non-myrmecophilous carabids.

The first official Korean record was reported by Choi et al. (2020), based on a specimens collected in Uljin, Gyeongsangbuk Province, in 2017. Prior to this, approximately two distribution records from southern Korea had been reported via domestic websites. In addition, the author discovered an individual in Chuncheon, Gangwon Province, in 2018, representing the northernmost record of this species on the Korean Peninsula.

In Japan, the ecology of this species is well documented: its host ant is *Lasius sakagamii*, and individuals are found along ant trails and within nests (Terayama & Maruyama, 2007;

Maruyama et al., 2013). However, because this ant species is not distributed in Korea (Dong et al., 2025), the ecology of *L. asperum* in Korea remains unknown (Choi et al., 2020). Korean records are limited to individuals observed opportunistically or attracted to light traps, and the author's specimen was also observed under a streetlight at night while collecting fireflies. Given the low likelihood of the known host ant occurring in Korea, it is hypothesized that Korean populations of this species either (1) utilize a different ant species as a host, or (2) exhibit an ecology independent of ants. Further study is clearly needed to clarify the ecological associations of this species in Korea.

Figure 1. *Lachnoderma asperum* from Chuncheon, Gangwon Province, 29 September 2018.

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