

P122*Rapid expansion of range and population in the social-parasitic hornet***Katsuhiko Sayama**, Jun-ichi Kojima, Fuki Saito-Morooka, Shun'ichi Makino

Vespa dybowskii is the only socially-parasitic species in the hornet genus *Vespa*, and its known hosts are *V. crabro* and *V. simillima*. Overwintered *V. dybowskii* queens are unable to initiate a nest, but they usurp a host hornet nest just after the emergence of the first brood workers of the host (Matsuura, 1995). Once a *V. dybowskii* queen has succeeded in usurpation, she utilizes host workers to produce her own workers. The host workers are gradually replaced by the *V. dybowskii* workers. *Vespa dybowskii* had been considered a rare hornet species in Japan and was found in mainly mountainous areas in the northern half of Honshu (main island in Japan) and Hokkaido (northern island in Japan), with records from 17 prefectures by the early 1990s (Matsuura, 1995). Since the 2000s, however, reports of the occurrence of *V. dybowskii* have shown a dramatic increase in areas new to *V. dybowskii*, exhibiting marked expansion in the westward range. By 2013, *V. dybowskii* was recorded in nearly all the prefectures in Honshu. While the recorded hosts were nearly always *V. crabro* about 60 years ago (Sakagami & Fukushima, 1957), recent host records show that more than half of the host-identified nests originally belonged to *V. simillima*. The population sizes of *V. simillima* have recently increased in urban areas, whereas those of *V. crabro* have decreased in various regions in Japan. These findings suggest that a possible switch in the principal host from *V. crabro* to *V. simillima* is one of the factors underlying the rapid range expansion and increase in the population size of *V. dybowskii*.