

Scientific note

A scientific note on the occurrence of *Varroa* mites on adult worker bees of *Apis nuluensis* in Borneo

LI de Guzman ¹, TE Rinderer ¹, RR Whiteside ²

¹ USDA/ARS, Honey-Bee Breeding, Genetics and Physiology Laboratory,
1157 Ben Hur Road, Baton Rouge, LA 70820

² Department of Entomology, Louisiana State University, Baton Rouge, LA 70803, USA

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While examining adult worker honey bees of the new honey bee species, *Apis nuluensis* Tingek, Koeniger and Koeniger, 1996, collected by TER from a mixed colony of *A nuluensis* and *Apis cerana* Fabricius, we found two species of *Varroa* mites on the *A nuluensis* worker bees: two *Varroa jacobsoni* Oudemans and one that looked similar to *Varroa underwoodi* Delfinado-Baker and Aggarwal, which was tightly tucked in between the sternites of its host *A nuluensis* worker bee. The mixed colony was obtained by introducing brood combs and adult bees from one colony of *A nuluensis* collected from the high mountains of Sabah, Malaysia in Borneo into a queenless *A cerana* colony located 200 km away from the collection site.

The 'underwoodi-like' mite was compared to *V underwoodi* from Korea and was found to have only small morphological differences. Both the Sabahn 'underwoodi-like' and Korean *V underwoodi* are smaller in size and have longer marginal setae than *V jacobsoni*. However, the 'underwoodi-like' mite from Sabah is larger, and has fewer endopodal setae than the *V underwoodi* from Korea. The species identity of this Sabahn mite cannot be determined since we cannot conduct thorough morphological and molecular comparisons with only one mite sample. However, it is certain that the mite is a member of the genus *Varroa*.

A cerana is the original host of *V jacobsoni* and *V underwoodi*. While *V jacobsoni* is cosmopolitan in distribution, *V underwoodi* has only

been reported in Nepal (Delfinado-Baker and Aggarwal, 1987), Korea (Woo, 1993), and recently in Papua New Guinea (Lee, 1995). The existence of *V underwoodi* on *A nuluensis* or *A cerana* colonies in Sabah is very difficult to explain since no importation is allowed into the country. In addition, the indigenous host of the 'underwoodi-like' *Varroa* cannot be determined since infested bees were collected from a mixed population of *A nuluensis* and *A cerana*. However, this is the first observation of this mite in Borneo and the coincidence of its collection with *A nuluensis* workers suggests that it likely came from the *A nuluensis* colony.

Regardless of the exact species identity and host bee species of this 'underwoodi-like' mite, it is clear that three species of *Varroa* mites coexist in Borneo, namely: *V jacobsoni* infesting *A cerana* and perhaps *A nuluensis*, *V rindereri*, a parasite of *A koschevnikovi* (de Guzman and Delfinado-Baker, 1996); and *V underwoodi* or a similar species probably parasitizing *A nuluensis* or *A cerana*.

Eine wissenschaftliche Notiz zum Fund von *Varroa* – Milben auf Arbeiterinnen von *Apis nuluensis* in Borneo

Note scientifique sur la présence d'acariens *Varroa* sur des ouvrières d'*Apis nuluensis* à Bornéo

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