

PARASITIC *TROPILAEELAPS* SPP. MITES: CONFINED TO ASIA OR GLOBAL BEEKEEPING THREAT?

Jeff S. Pettis

Institute for Bee Health, University of Bern, Bern, Switzerland

At least two parasitic mites have moved from Asian species of honeybees to infest *Apis mellifera*. Of these two, *Varroa* spp. is more widespread globally while *Tropilaelaps* spp. has remained largely in Asia. *Tropilaelaps* mites are most problematic when *A. mellifera* is managed outside its native range in contact with Asian species of *Apis*. In areas where this occurs, beekeepers of *A. mellifera* treat aggressively for *Tropilaelaps*, and *Varroa* is either outcompeted or is controlled as a result of the aggressive treatment regime used against *Tropilaelaps*. *Tropilaelaps* mites are very similar to *Varroa* as both are honeybee ectoparasites that feed on immature developing bees (brood). Mite parasitism can cause brood mortality and colony decline. Currently four species of *Tropilaelaps* are recognized, *Tropilaelaps clareae* Delfinado and Baker, *Tropilaelaps mercedesae* Anderson and Morgan, *Tropilaelaps thaii* Anderson and Morgan and *Tropilaelaps koenigerium* Anderson and Morgan (henceforth collectively referred to as *Tropilaelaps*).

Tropilaelaps mites have expanded their host range as *A. mellifera* were introduced into Asia. The giant honeybee (*Apis dorsata* F.) is thought to be the original host of *Tropilaelaps*. *Tropilaelaps* mites now pose a major threat to managed *A. mellifera* but the mite has not expanded its range as has *Varroa*. For many years it has been predicted that *Tropilaelaps* would spread outside of Asia to other areas where honey bees are managed; to a large degree this spread has not occurred. However, *Tropilaelaps* has recently been found in Korea and in Northern areas of China, challenging the assumption that cold climates alone would limit *Tropilaelaps* spread.

The current distribution pattern of *Tropilaelaps* mites will be presented. Additionally, the current methods for mite detection and data on mite control will be discussed in order to better understand the threat that *Tropilaelaps* mites pose to beekeepers worldwide.

Keywords: *Tropilaelaps* spp, *Apis mellifera*, honey bee, parasite, host range