

PEST ALERT

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Tropilaelaps: an obligate pest of honey bees

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INTRODUCTION

In October 2025, the State of New Jersey reported the successful interdiction and eradication of a swarm of the giant honey bee (*Apis dorsata* Fabricius; Hymenoptera, Apidae), aboard a vessel 3,600 miles offshore. This swarm was euthanized and stored in a freezer before docking at Port Newark-Elizabeth. Upon arrival, samples were sent to the USDA APHIS National Identification Services. In addition to the confirmation of the bee species, the mite *Tropilaelaps mercedesae* Delfinado and Baker was identified. *Tropilaelaps mercedesae* and *T. clareae* Delfinado and Baker (Acari, Laelapidae) originated as pests on *Apis dorsata*; however, have been demonstrated to parasitize western honey bees (*Aphis mellifera* Linnaeus; Hymenoptera, Apidae).

DISTRIBUTION

While *Tropilaelaps mercedesae* has expanded beyond its original native range and has been documented in Russia (Brandorf et al., 2024), the Republic of Georgia (Janashia et al., 2024) and Uzbekistan (Mohamadzade Namin et al., 2024) (Figure 1), *T. clareae* has remained confined to Indonesia and the Philippines (de Guzman et al., 2017).

GENERAL BIOLOGY

Unlike the varroa mite (*Varroa destructor* Anderson and Trueman; Acari, Laelapidae), *T. mercedesae* does not have a prolonged dispersal phase on adult bees and survives only briefly on adult hosts, around seven days (Gill et al., 2024). Feeding on adult honey bees is not required between rounds of reproduction, as *Tropilaelaps* rely primarily on brood for nutrition and can only sustain themselves for short periods on adult bees. Following reproduction, *Tropilaelaps* leave a cell and reenter another cell immediately. *Tropilaelaps* mites feed almost obligately on the hemolymph of brood. Consequently, the southern United States, where brood production is continual or only briefly interrupted during winters, offer likely locations for this species' establishment. Dissemination of this pest is through infested hives and, to a lesser extent, through phoresy of adults.

IDENTIFICATION

Tropilaelaps are approximately 0.9 mm long × 0.5 mm wide and about one-third the size of *Varroa* (de Guzman et al., 2017) (Figure 2). *Tropilaelaps* have longer and narrower body shapes, and move about hives and frames more rapidly. Foundress mites will enter a cell and lay at least four eggs after the larval cell is capped (Chantawannakul et al., 2018). The next generation of mites requires six to nine days to mature, well before the parasitized bee emerges from its cell (Chantawannakul et al., 2016; Woyke, 1986). There are no available treatments that are entirely effective, although brood breaks combined with formic acid and/or oxalic acid can greatly reduce population numbers (Tokach et al., 2024).

SYMPTOMS AND DAMAGE

In addition to direct predation contributing to weight loss and reduced longevity (Khongphinitbunjong et al., 2016), *Tropilaelaps* can vector honey bee viruses (Dainat et al., 2008). Heavily infested colonies oftentimes display spotty, bald brood, as well as the removal of cell cappings from infested brood (de Guzman et al., 2017) (Figure 3).

If the presence of *Tropilaelaps* is suspected, the Division of Plant Industry should be contacted at DPIHelpline@FDACS.gov or 1-888-397-1517.



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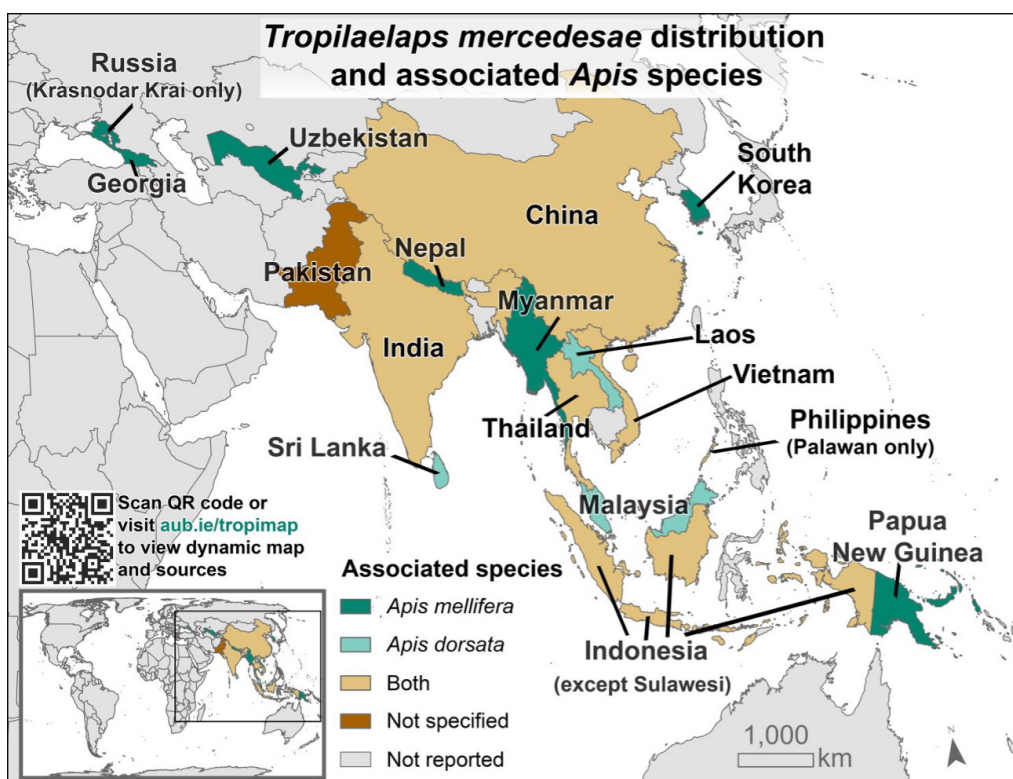


Figure 1. Live global distribution of *Tropilaelaps mercedesae* and status of parasitization in *Apis dorsata* and *Apis mellifera*. Map by Tokach et al., 2026, Department of Entomology and Plant Pathology, Auburn University



Figure 2. *Tropilaelaps* sp. A. Dorsal view. B. Ventral view.
Photo by Lyle J. Buss, University of Florida

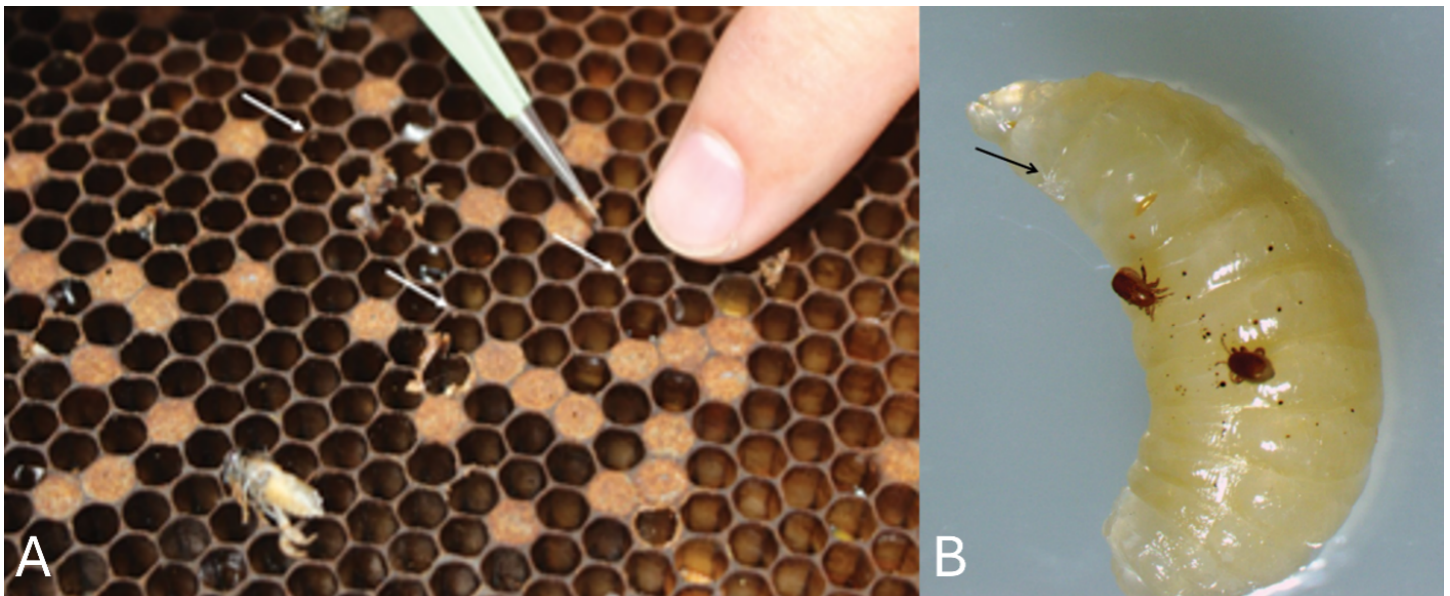


Figure 3. *Tropilaelaps* infestation. A. Spotty brood pattern characteristic of heavy infestation by *Tropilaelaps*.
Photo by K. Khongphinitbunjong, USDA-ARS. Honey Bee Breeding, Genetics, and Physiology Laboratory
B. *T. mercedesae* adult females. The brown flecks on the larva are from wounds inflicted by *T. mercedesae* feeding.
Photo by K. Dongwon, USDA-ARS. Honey Bee Breeding, Genetics, and Physiology Laboratory