

# Varroa Mite

## *Varroa destructor*

### (Acari: Varroidae)

Christopher A. Rosario, Ross H. Miller, and Aubrey Moore  
University of Guam  
July 25, 2014  
Updated July 29, 2014

University of Guam research assistant Christopher Rosario collected honeybees infested with varroa mites from a feral hive at the Southern Comfort Ranch in Merizo, Guam (13.15058°N, 144.41474°E) on March 3, 2014. Samples were sent to the USDA Bee Research Laboratory in Maryland where Grace Kunkel identified the mites. The hive was subsequently destroyed on May 27, 2014.

This is the first detection of varroa mites on Guam and elsewhere in Micronesia. To date, only the single infested hive has been found.



Fig. 1. Varroa mite. (Courtesy of BBC)

#### DESCRIPTION

*Varroa destructor* is an external parasitic mite that attacks the Asian honey bee, *Apis cerana*, and the European honey bee, *Apis mellifera*. Adult varroa mites are tiny 1–1.5 mm reddish-brown, crab-shaped, flattened mites (Fig. 1). They attack honey bee adults, larvae, and pupae (Fig. 2) and use their piercing-sucking mouthparts to feed on the hemolymph (blood) of bees. In varroa mite-infested honey bee colonies, newly emerging bees are malformed. Severe infestations of the mite will result in an eventual decline of bee colonies and a reduced honey bee population.

#### DISTRIBUTION

Varroa mites were originally found only in Asia as parasites on the Asian honey bee (*Apis cerana*). Until recently, all varroa mites were classified as *Varroa jacobsoni*, a species first characterized in Java in 1904 and later discovered to inhabit much of mainland Asia. Genetic analysis, however, has identified two distinct species in this range. The 'new' species, christened *Varroa destructor*, is endemic to Korea, Japan, and Thailand. Of the two, *V. destructor* has been definitively identified as the variety involved in current infestations of European honeybees. First detections include: Early 1960s: Japan, USSR; 1960s-1970s: Eastern Europe; Late 1970s: South America; 1980: Poland; 1982: France; 1984: Switzerland, Spain, Italy; 1987: Portugal; 1987: USA; 1989: Canada; 1992: United Kingdom; 2000: New Zealand (North Island); 2006: New Zealand (South Island); and 2007: Hawaii (Oahu and Hawaii Islands).



Fig. 2. Varroa mites infesting a honeybee pupa. (Courtesy of Scott Bauer, USDA-ARS)

#### ACKNOWLEDGMENTS

Thanks to Grace Kunkel for species determination. The mites were discovered during participation in the National Honeybee Survey with support from USDA-APHIS grant 13-8515-1650-CA.

#### REFERENCES

- James D. Ellis and C. M. Zettel Nalen. Featured creatures: Varroa mite, June 2013. URL [http://entomology.ifas.ufl.edu/creatures/misc/bees/varroa\\_mite.htm](http://entomology.ifas.ufl.edu/creatures/misc/bees/varroa_mite.htm). [Online; accessed 25-July-2014].
- Mohsen M. Ramadan, Neil J. Reimer, Darcy E. Oishi, Cheryl L. Young, and Ronald A. Heu. Varroa mite, December 2008. URL <http://hdoa.hawaii.gov/pi/files/2013/01/npa07-01-Varroa1.pdf>. [Online; accessed 25-July-2014].
- Brenden Reid. Introduced species summary project: Varroa mite (*Varroa destructor*)varroa mite, November 2004. URL [http://www.columbia.edu/itc/cerc/danoff-burg/invasion\\_bio/inv\\_spp\\_summ/varroa\\_destructor.html](http://www.columbia.edu/itc/cerc/danoff-burg/invasion_bio/inv_spp_summ/varroa_destructor.html). [Online; accessed 27-July-2014].
- Wikipedia. Varroa destructor — wikipedia, the free encyclopedia, 2014. URL [http://en.wikipedia.org/w/index.php?title=Varroa\\_destructor&oldid=614653057](http://en.wikipedia.org/w/index.php?title=Varroa_destructor&oldid=614653057). [Online; accessed 25-July-2014].