# Generalities on the mites present on honeybees

**Colin M.E.**

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**Colin M.E. (ed.), Ball B.V. (ed.), Kilani M. (ed.).**
**Bee disease diagnosis**

**Zaragoza : CIHEAM**
**Options Méditerranéennes : Série B. Etudes et Recherches; n. 25**

**1999**
pages 117-120

# Generalities on the mites present on honeybees

**M.E. Colin**
INRA - Zoologie et Apidologie, Site Agroparc, 84914 Avignon Cedex 9, France

According to Evans (1992), the Acari form a large group of Arachnida characterized by their small size and the birefringence of body and leg setae. Ten external morphological characters distinguish the two superorders: Actinotrichida and Anactinotrichida. The latter includes the order of the Mesostigmata, in which the main distinguishing characteristic is the position of the stigmata behind coxae III, rarely behind coxae IV.

The super family Dermanyssoidea includes many species which have developed associations with other animals, ranging from commensalism to parasitism, especially with bees. Members of two families (Laelapidae and Varroidae) are parasites of bees of the genus *Apis*, which is sub-divided in four species: *A. mellifera, A. cerana, A. florea* and *A. dorsata* (see Table 1).

Table 1. Parasites of the genus *Apis* (After Delfinado-Baker and Styer, 1983; Eickwort, 1988)

| Family and species | Host (*Apis*) | Reproduction |
|---|---|---|
| Laelapidae | | |
| *Tropilaelaps claerae* | *florea* | Worker and drone brood |
| | *dorsata* | Brood |
| | *mellifera* | Worker and drone brood |
| *Tropilaelaps koenigerum* | *dorsata* | Worker brood and queen cells |
| Varroidae | | |
| *Euvarroa sinhai* | *mellifera* | Drone brood |
| | *cerana* | Drone brood |
| | *florea* | Drone brood |
| | *dorsata* | Drone brood |
| *Euvarroa wongsirii* | *andreniformis (florea)* | Drone brood |
| *Varroa jacobsoni* | *mellifera* | Worker and drone brood |
| | *cerana* | Drone brood |
| *Varroa underwoodi* | *cerana* | |
| *Varroa rindereri* | *koschevnikovi* | Drone brood |

Members of the family Laelapidae (Fig. 1) are characterized by the presence of a fixed digit on the chelicerae and three pairs of setae on the hypostome. Peritremes are well developed. The legs are without metatarsus. The tarsopalpal claw is bi- or tridactyl.

The family of Varroidae is mainly defined by the lack of the fixed digit on the chelicerae. The reduction of the number of setae on the palpus and on the leg, in comparison with the Laelapidae, is also a noticeable difference (Delfinado and Baker, 1974).

In the genus *Varroa*, the deutosternal groove is smooth, lacking denticles. The form and location of the stigmata is similar in both sexes. The peritreme and stigmata are ventrolateral. The peritreme is strongly looped.

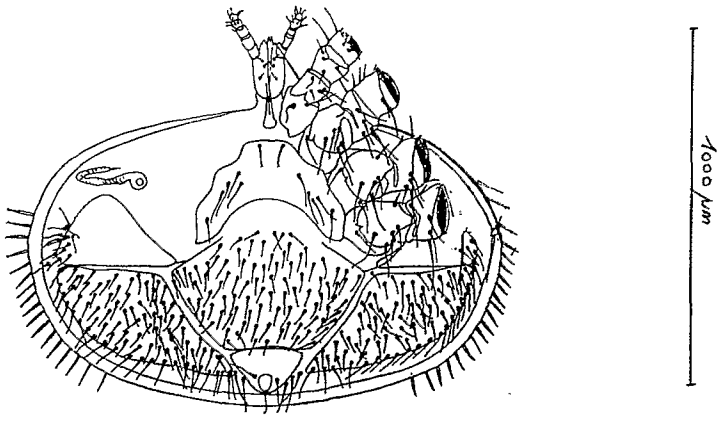


Fig. 1. Ventral face of *Tropilaelaps claerae*.

*Varroa underwoodi* (Fig. 2) is very similar to *V. jacobsoni* (Fig. 3). The main difference is its smaller size: 758 µm length and 1162 µm width for *V. underwoodi*; 1160 µm x 1620 µm for *V. jacobsoni*. Another difference is the greater length of lateral marginal setae in *V. underwoodi*.

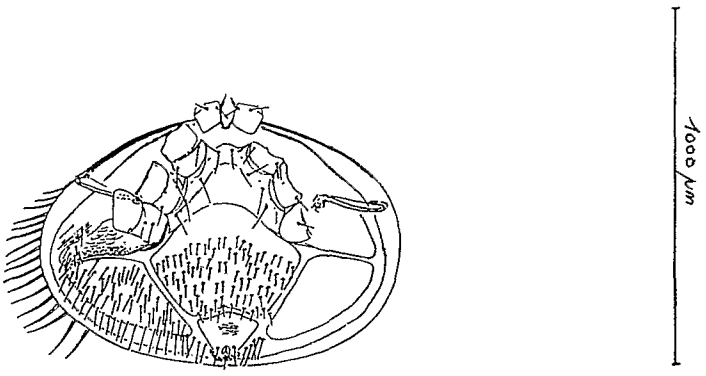


Fig. 2. Ventral face of *Varroa underwoodi*.

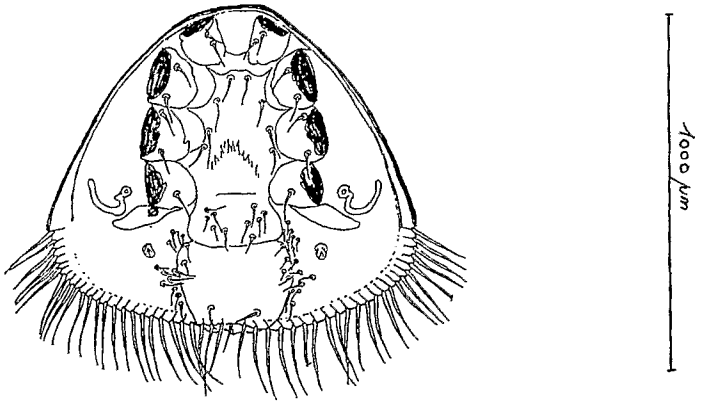


Fig. 3. Ventral face of *Varroa jacobsoni*.

*Varroa rindereri* has just been described by de Guzman and Delfinado-Baker (1996).

The genus Euvarroa is distinguished by the presence of 13 or 14 small triangular denticles in the deutosternal groove and the absence of sternal pores. It includes two species: *E. sinhai* (Fig. 4) and *E. wongsirii* (Fig. 5). The species are distinguished by the width of the body (*E. sinhai*, 1000 µm; *E. wongsirii*, 1100 µm) and by the number and the length of the posterior marginal setae (*E. sinhai*, 40 of 200 µm; *E. wongsirii*, 49 of 230 µm).

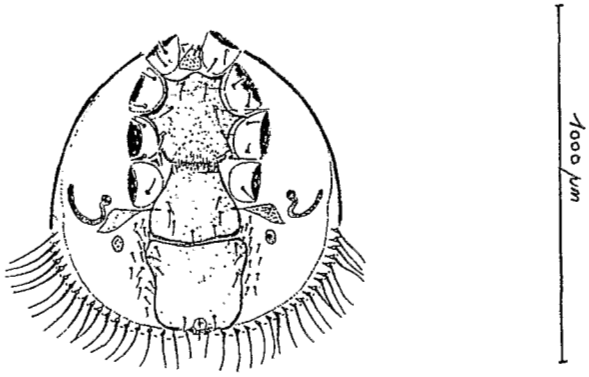


Fig. 4. Ventral face of *Euvarroa sinhai*.

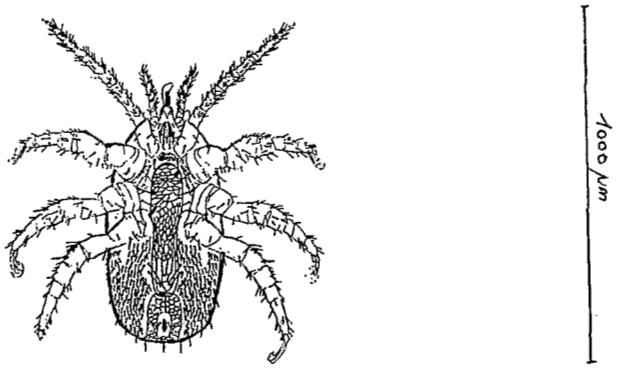


Fig. 5. Ventral face of *Euvarroa wongsirii*.

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