

Histological studies on ovary differentiation in Yemini queen honeybees, *Apis mellifera jemenitica* (Hymenoptera: Apidae), during post-embryonic development

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Abstract

The histological structure of the ovary of queens of the Yemeni honeybee race, *Apis mellifera jemenitica*, was studied in the third and fifth larval instars, 1-, 2- and 3-day old pupae and newly emerged imago queen bees. Queen bee larvae were fed with an intensive royal food throughout the larval stage to avoid compounding regression to worker status. Several differences were found from one developmental stage to another, as well as in the different ages of each stage. The queen bee's ovaries were observed to go through several discernable stages during metamorphosis. Large cells, from which the germ cells originate, are surrounded by tiny flat cells that form the future general shape of the ovarioles (the peritoneal cover). The queen's ovaries continue to grow and differentiate after the fifth (final) larval stage and during the three pupal stages, where the ovarioles include two areas; the germ cells and the peripheral thread. However, at emergence the germ cells are not yet mature.