

Studies on the development of the ovaries of the malaria mosquitoes (*Anopheles pharoensis*)

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For the gonotrophic concordance of the Anophelini, the full blood-meal is necessary for the maturing of one batch of eggs. The whole period from the beginning of one blood-meal to the next includes three phases: (1) the searching for a host and the obtaining of the blood-meal; (2) digestion of the blood and egg formation; and (3) the search for breeding- places and ovipositions. These phases comprise one gonotrophic cycle. During this gonotrophic cycle, seven growing stages of the oocyte are observed in the adult stage. The gradual increase in the oocyte size during these phases is attributed to yolk deposition. During vitellogenesis, the oocyte and nurse cell nucleus are similar in size (stage I). Then, the oocyte enlarges and occupies one third of the egg follicle, while the nurse cell (NC) occupies the remaining two thirds. The yolk granules (stage III) enlarge, occupying about half of the egg follicle, while the NC contains the other half (stage IV). An increase and accumulation of yolk granules leads to the filling of about three fourths of the egg bulk and makes the oocyte nucleus hardly visible during stage V. The oocyte occupying nine tenth of the length of the follicle in stage VI. Stage VII corresponds to a mature cigar shaped egg and contains two kinds of yolk globules. The oocyte and the NC at all stages are surrounded by a single layer of epithelial cells which increase in number and form the vitelline membrane and the chorion. The mitochondria in the NC, oocyte, and follicular epithelium appear as granules of different sizes. The Golgi apparatus appears in different sizes and shapes, since in the early stages of development, it is restricted to the perinuclear zone. When the development proceeds, it enlarges in size, spreads over the whole cytoplasm, and participates in the formation of the yolk. The number of gonotrophic cycles undergone by each female represents her physiological age. The ability to determine the duration of each gonotrophic cycle makes it possible to assess also the calendar age of the vector. Where the gonotrophic concordance exists in blood-sucking Diptera, the determination of the physiological age of the females enables us at the same time to establish the number of blood-meals the females have taken.

Biography

Abeer has completed her Ph.D at the age of 32 years from Heinrich-Heine University, Germany with Zagazig University, Egypt. She is the assistant professor of Zoology department, Zagazig University. She has published more than 3 papers in reputed journals. She had training courses from Heinrich_Heine University in Embedding technique, Semithin and ultrathin sectioning for light and electron microscopy, Transmission and Scanning electron microscopy, Protein electrophoresis, PCR, German languish, Pedagogy, Preparing and writing research and publishing internationally, Time management and work stress, Use of technology in teaching, Ethics and Professional Ethics, Effective Presentation skills, economics of marketing, TOEFL and ICDL.