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Morphology as a tool to understand ant physiology

Maria Izabel Camargo-Mathias

The new era of the studies of insect makes use of tools that allow to perform the morphological analysis telling a story which contained many facts to be reported through new information obtained mainly by the application of histological and histochemical techniques as well as by the improvement of the researchers knowledge. Exemplifying the use of the morphohistological tools in studies with insects, we mention those which the internal organs like: exocrine glands, reproductive, nervous and digestive systems. Specifically with ants, many knowledge acquired were obtained from the application of the morphohistological techniques, which provided data those when associated with another ones like taxonomic, behavioral and molecular allowed to draw a more accurate profile of the biology of the animals. In the last decade, such studies have been carried out by researchers such: Ortiz et al, 2012; Vieira et al, 2012; Roma et al, 2008, 2010, Pavon, 2009, under the supervision of Camargo-Mathias, M.I. leader of the group, which showed different aspects of the morphology and physiology of internal and external ants organs. Specific studies with ants and using morphology techniques, have shown the fat body, like responsible for the synthesis and storage of proteins, lipids and carbohydrates specially of the vitellogenin, important in the reproduction. Roma et al (2009) performed a study of the fat body and showed results that helped in better understanding of the phylogenetic relations between basal and derived species of the Attini ants using ultrastructural cytochemistry. Vieira et al (2012) showed important differences of the metapleural glands among several species of ants, making use of morphological tools like histology and ultrastructure. Like this another studies have been performed using the morphology as a main tool to understand the physiology and behavior of the ants, by the analyses of tissues organization and cell specialization.