

A PRELIMINARY STUDY ON THE LIFE CYCLE OF *DERMESTES FRISCHI* (KUGELANN, 1792)

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Within the field of forensic entomology, much effort and interest are put on the observation and research of flies (Diptera), for they are the first insects to sense a dead carcass and start visiting it a short time after its exposure. Much less is known about necrophilous and necrophagous beetles (Coleoptera). Some families of Coleoptera are predatory and feed on maggots which are present on the carcass. There are families of Coleoptera, however, that are not predatory and that are actually attracted to the carcass itself as it represents a source of food for adult specimens and their immature stages; one of these families is Dermestidae. *Dermestes* sp. feed indeed on dehydrated skin, hair, and cartilage and arrive on the remains in the later stages of decomposition, when almost all fluids are lost, or when at least some part of them is dehydrated. Since a carcass/corpse in the dehydrated stage represents the ideal trophic substrate for this family, *Dermestes* sp. visit and lay their eggs on the dry substrate so that their offspring will have a source of food upon hatching. For this reason, Dermestidae is the only family of Coleoptera whose life cycle occurs entirely on the remains. This makes *Dermestes* sp. an important indicator of the post mortem interval and for this reason, we carried out a preliminary experiment to collect information on their developmental time under certain conditions; indeed, this area lacks exhaustive data at the moment. The aim of this project was therefore to observe several colonies of one species of *Dermestes*, *Dermestes frischi* (one of the most abundant in Northern Italy) to gain a better understanding of the immature developmental stages and to collect morphometric data on the specimens, which could have forensic applications.

For this experiment, several colonies of *Dermestes frischi* were reared in an incubator where the temperature was maintained at 27°C and the humidity at 80%. Eggs, immature stages, pupae and adults were sampled, fixed and measured. The duration of the life cycle was measured in each single stage and in total; mortality was also considered in each stage and overall.

The results of this preliminary study have shed light on the morphometry of *Dermestes frischi* as well as on the immature stages of the development of this species at the experimental temperature and lay the foundation for further trials that could expand information related to *D. frischi* and its forensic applications.