

**CAMOUFLAGE INSECTS IN CROCKER RANGE PARK HEADQUARTERS  
(HQ), KENINGAU SUBSTATION**

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(Fatin Amirah Binti Ahmad Anuar)



## ABSTRACT

### CAMOUFLAGE INSECTS IN CROCKER RANGE PARK HEADQUARTERS (HQ), KENINGAU SUBSTATION

Camouflage insects is one of the fascinating occurrence in nature, however with nondependent mechanisms of camouflage changes together with human distraction, their ecosystem may be highly disturbed. A study to identify camouflage insects in the Crocker Range Park HQ was conducted at 4 different stations for a period of two months starting from March to April 2016. All images of the potential insects found were taken by using two main cameras, Nikon Coolpix P6000 and Casio EX-ZR1000 with both set up to micro and aperture properties. Some of the specimens were captured manually by hand or nets after photographed yet they can be further be identified. Specimens were then killed in killing jars containing cotton wool soaked with chloroform and kept in dry killing bags (plastic and/or paper). After that, they were dried, spread, pinned, labelled, identified and classified up to species and presented in the Makmal Entomologi, Kompleks Makmal Sains dan Agroteknologi (KOMSAT), UiTM. From the study, 8 orders of insects were identified with a total of 183 individuals recorded, which then were further divided into three types of camouflage. Study indicated that there were three main types of camouflage (blending, disguise and pattern) while there were four types been proposed (blending-disguise, disguise-pattern, blending-pattern, blending-disguise-pattern). The criteria for camouflage types was classified in term of color, surroundings and habitats (rocks, sticks, leaves, soil, barks of the tree). Lepidopterans order found to be the frequent users of the main type of camouflage whereas the Phasmatodeans was the frequent users of the proposed ones. The highest average (SD) recorded was 3.2 belonged to Lepidopterans while the lowest average (SD) was 0.5 belonged to both orders, Blattodeans and Homoptera. It showed the best camouflage strategy used by the insects to escape from predators were disguise and blending-disguise.

## CHAPTER 1

### INTRODUCTION

#### 1.1 Background of Study

Most insects encountered in everyday lives are representatives of one of those diverse species in the world, and some of them are living in close association with human (New, 2009). Insects are affected by the longitudinal and latitudinal trends of vegetation (Novotny and Miller, 2014; Idris *et al.*, 2002) and it is important to all living organisms. In forests, they are crucial to each living organisms as they act as decomposers, pollinators, food resources and are involved in nutrient cycle (Jaroensutasinee *et al.*, 2011).

Chance survival of insects can be increasing as almost all of them have the ability to camouflage themselves to the surroundings, despite the ability in seeing things widely with the help of correct distance and directions through their compound eyes. For instance, an event where they may be resting on flowers are able to confuse the predators which may have an intention to eat on them, due to their morphology structures have a similar appearances and properties to the flowers' structure.