

Comparative Prevalence of Ectoparasitic Fauna on Birds from Selected Mainland and Island of Sarawak

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ABSTRACT

A survey of ectoparasitic fauna on birds was conducted in October 2017 until January 2018. The aims of this study were to investigate the ectoparasitic fauna on birds and to compare its prevalence in the selected mainland and island of Sarawak. A series of sampling by using mist-net has been done in Mount Sadong and Satang Besar Island with a total of 1440 hours of sampling effort for each locality. A total of 53 individuals of birds were captured and examined for its ectoparasites. Twenty-one species of ectoparasites were recorded comprising four species of lice and 17 species of mites. Four species of lice and 11 species of mites were detected in Mount Sadong while eight species of mites and no lice were detected in Satang Besar Island. The prevalence of ectoparasites infested on birds in Mount Sadong (33.33%) was higher than Satang Besar Island (17.39%). The p -value ($p=0.474$) indicated there was no significant difference between the prevalence of ectoparasites from both localities. The result is important since ectoparasites infestation could affect the survival of birds and has the potential transmission of zoonotic disease.

Keywords: Bird, ectoparasites, island, mainland, prevalence, Sarawak

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INTRODUCTION

Borneo is a huge landmass that provides a home to the biodiversity of tropical life which occupied more than 650 species of birds in which 52 species of them are endemic (Myers, 2016). Birds are the most successful vertebrate group among the others and play their important role as predators, pollinators, scavengers, seed dispersers, and ecosystem engineers (Whelan, Wenny & Marquis, 2008). However, the bird richness may have affected by the distance between the island and the nearest mainland as only certain bird species or families have the ability to disperse far away to the islands (Dalsgaard *et al.*, 2014). This factor may cause remote islands to have smaller numbers of species than the mainland (Kalmar & Currie, 2006; Kier *et al.*, 2009; Simberloff, 1995). Thus, the ectoparasites on birds in the island may tend to have a lower prevalence than the mainland as they increase their preference to one or a few specific hosts due to the limited diversity of birds.

A study by Brown, Brown and Rannala (1995) reported the parasitised birds had an annual survivorship 12% lower than non-parasitised birds. Their findings indicated that the ectoparasites infestation could affect the long-term survival of their host (Sajid & Ehsan, 2017). However, the study of the ectoparasitic fauna on birds was given less priority and almost neglected, due to less contact with human and they are not subjected to sources of protein for human. To date, there is still lacking published data on ectoparasites of birds available in Malaysia in which most of the studies were pertaining to Peninsular Malaysia. In addition, most of the publications locally are subjected to consumable poultry. Therefore, this study is intended to recover the ectoparasitic fauna on the birds and compare their prevalence from selected mainland and island in Sarawak to serve as preliminary references for future understanding on the ecological role of ectoparasites in regulation of population of birds as well as to develop the conservation not solely on bird species but also their habitats.

MATERIALS & METHODS

Sampling Sites

This study has been conducted within October 2017 to January 2018 in Mount Sadong (1.21 °N, 110.50 °E) and Satang Besar Island (1.79 °N, 110.17 °E) (Figure 1). Mount Sadong was considered as a secondary forest that consists of bamboo vegetation, orchards, and small bark trees. This study covered the foothill of the mountain to the hilly area. Satang Besar Island was also considered as a secondary forest which consists of bamboo, small bark trees and the forest floor were mostly covered with leaf litter. This study was covered the island edges to the hilly area.