PRELIMINARY STUDY OF ENDOPARASITE FAUNA OF *Hirundo* sp: A CASE STUDY AT UNIVERSITI TEKNOLOGI MARA NEGERI SEMBILAN

HASNORSHARMINI BT HASSAN

Final Year Project Report Submitted in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science (Hons.) Biology in the Faculty of Applied Sciences Universiti Teknologi MARA

JULY 2014

This Final Year Project Report entitled "**Preliminary Study of Endoparasite Fauna of Hirundo sp: A Case Study at Universiti Teknologi Mara Negeri Sembilan**" was submitted by Hasnorsharmini binti Hassan, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons) Biology, in the Faculty of Applied Sciences, and was approved by

Mimi Sophia binti Sarbandi Supervisor B. Sc. (Hons) Biology Faculty of Applied Sciences Universiti Teknologi MARA 72000 Kuala Pilah Negeri Sembilan

Molid Zaim bin Nawahwi Co-Supervisor B. Sc. (Hons) Biology Faculty of Applied Sciences Universiti Teknologi MARA 72000 Kuala Pilah Negeri Sembilan

Sarini binti Ahmad Wakid Project Coordinator B. Sc. (Hons) Biology Faculty of Applied Sciences Universiti Teknologi MARA 72000 Kuala Pilah Negeri Sembilan

Dr.Nor'aistab binti Abu Shah Head of School of Biology B. Sc. (Hons) Biology Faculty of Applied Sciences Universiti Teknologi MARA 72000 Kuala Pilah Negeri Sembilan

Date: 24 7 7014

ACKNOWLEDGEMENTS

Alhamdulillah. In the name of Allah S.W.T, the Most Gracious and the Most Merciful.All praise is belonging to Allah S.W.T. who has given me the health and strength to complete this thesis.

I cannot find words to express my deepest gratitude to my supervisor Madam Mimi Sophia binti Sarbandi for her patience and guidance, encouragement, enthusiasm and the advice she has provided throughout my time as her student. I have been extremely lucky to have a supervisor who cared so much about my work and responded to my questions and queries, promptly. Her guidance has helped me in all the time of research and writing of this thesis.

I must express my appreciation and gratitude to my co-supervisor En Mohd Zaini bin Nawahwi who helped me in my supervisor's absence.

Completing this work would have been all the more difficult were it not for the support and friendship from my beloved friends. I owe my sincere gratitude especially to Halijah and not forgetting my classmates, Faiz and Akmal for their effort to enable me to complete this research project.

I am also deeply thankful to the lab assistants, Madam Norshamsina Daud and Madam Norazahana Baharudin for their kind assistance and insights throughout my research lab work.

Last but not least, I would like to thank my mother, Pn Siti Maryam bt Hj.Yusoff for her unconditional support, both financially and emotionally. In particular, the patience and understanding shown by my mum, brother and sisters are greatly appreciated.

May the Almighty God richly bless all of you.

(Hasnorsharmini bt Hassan)

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vi
LIST OF FIGURES	vii
LIST OF ABBREVIATIONS	viii
ABSTRACT	ix
ABSTRAK	X

CHAPTER 1: INTRODUCTION

1.1	Background Study	1
1.2	Problem Statement	5
1.3	Significance of the Study	5
1.4	Objectives of the Study	6

CHAPTER 2: LITERATURE REVIEW

2.1	Birds	Dropping	<u>y</u> s	7
2.2	Host Parasite Relationship			8
	2.2.1	Classifi	cation of Endoparasites	8
	2.2.2	Parasite	es of Birds	9
		2.2.2.1	Helminth Parasites	11
		2.2.2.2	Protozoan Parasites	16
		2.2.2.3	Blood Parasites	18
2.3	Types of Diseases caused by Parasites on Birds and			
	Huma	ns	-	20

CHAPTER 3: METHODOLOGY

3.1	Mater	24	
	3.1.1	Raw materials	24
	3.1.2	Chemicals	24
	3.1.3	Apparatus	24
3.2	Methods		25
	3.2.1	Bird Trapping	25
	3.2.2	Fecal Collection and Examination	28
	3.2.3	Blood Collection and Extraction	28
3.3	Data Analysis		29

ABSTRACT

PRELIMINARY STUDY OF ENDOPARASITE FAUNA OF *Hirundo* sp: A CASE STUDY AT UNIVERSITI TEKNOLOGI MARA NEGERI SEMBILAN

Parasites are organisms that live in or on another organism and gain an advantage at the expense of the host. A study was carried out in UiTM Negeri Sembilan to identify the presence of endoparasites infesting the Barn Swallow (Hirundo rustica) and the Pacific Swallow (Hirundo tahitica). The prevalence of endoparasites in blood and droppings of the birds were also conducted. Fecal and blood samples were collected from a total number of 86 birds, Hirundo sp comprising of 46 Hirundo tahitica and 40 Hirundo rustica. All samples were individually collected. The fecal samples were examined using the fecal flotation technique and blood sample was examined by blood smear. The prevalence of endoparasites was found to be higher infested on Hirundo tahitica (56.36%) compared to Hirundo rustica (43.64%). Coccidia was found the most frequently prevalent (55.45%) to both species compared to strongyle (44.55%). At 5% significance level, it was concluded that there is no relationship between the type of birds which are the Pacific Swallow (Hirundo tahitica) and the Barn Swallow (Hirundo rustica) with the endoparasites (strongyle and coccidia). As the results may have been influenced by the exposure to contaminated food and the surrounding agricultural environment. This study also shown that parasite was not found detected in the blood due to the absence or scarcity of proper vectors and the host immunological capabilities to prevent infection of parasites.