


THE POTENTIAL AND PROMOTION OF ENTOTOURISM IN GUNUNG
LEDANG, JOHOR, MALAYSIA

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A thesis submitted in
Fulfillment of the requirement for the award of the
Degree of Master of Science



Faculty of Science, Technology and Human Development
University Tun Hussein Onn Malaysia

April 2015

ABSTRACT

This research tries to provide the scientific evidence that insect tourism or entotourism has potential and is viable. This is achieved through two methods – field observation and data collection, and through questionnaire surveys on tourist perceptions on insects and entotourism. Gunung Ledang was chosen as the research site for several reasons including the easy access to tourist respondents. Surveys showed that tourists are interested in insect. Supported by field observations and data collection, insects have potential to be excellent nature tourism product. Closer examination pointed out that insect groups that are reliable and visible are ants, butterflies, termites, dragonflies, moths, beetles, cicadas and damselflies. Field trials indicated that these insects were viable attractions as they are readily visible, safe, easily recognizable, with some having linkage to local culture. Regardless of the different environmental ambience, time of observation (except early mornings) and seasons, insect were always present. The tendency is there however, that particular environment such as water body (pool/waterfall) would attract certain insects such as odonates. Further surveys on tourists' perception indicated that they supported entotourism and were willing to participate in one. As Gunung Ledang is a national and state park under the jurisdiction of the Perbadanan Taman Negara Johor (PTNJ), their staff would likely be the candidates as entotourism operators. Thus, this research also gauged the present level of understanding and knowledge on insects by PTNJ staff, supplemented by a training course. Statistically, there is significant increase in the understanding and knowledge of insects after the training. A small booklet was developed based on collections of insects from Gunung Ledang and used during the training. Although, much of the research is about evaluating the potential and viability of insects as tourism product, to diversify tourism products, in line with the Malaysia Government's agenda, it also pointed out the need to conserve Gunung Ledang (watershed with high ecological values and with cultural heritage).

ABSTRAK

Kajian cuba menyediakan bukti saintifik bahawa pelancongan serangga atau entopelancongan berpotensi dan viabel, melalui dua kaedah - pemerhatian lapangan dan pengumpulan data, dan penggunaan borang kaji selidik bagi mendapatkan pandangan pelancong berkaitan serangga dan entopelancongan. Gunung Ledang dipilih sebagai lokasi kajian kerana akses yang mudah kepada pelancong (responden). Dapatan kaji selidik menunjukkan pelancong berminat terhadap serangga. Ini disokong oleh pemerhatian di lapangan dan pengumpulan data; serangga mempunyai potensi untuk menjadi produk pelancongan alam semula jadi yang baik. Analisis mendapati kumpulan serangga yang mudah dijumpai adalah semut, kupu-kupu, anai-anai, papatung, rama-rama, kumbang, riang-riang dan papatung jarum. Kajian menunjukkan serangga-serangga ini merupakan tarikan yang viabel dengan sifat-sifat seperti mudah dilihat, selamat, mudah dikenali dan sebahagian mempunyai hubungan dengan budaya tempatan. Walaupun dalam persekitaran berbeza, tempoh pemerhatian (kecuali pada waktu awal pagi) dan musim berbeza, serangga sentiasa ada. Walau bagaimanapun terdapat kecenderungan tertentu seperti badan air (kolam/air terjun) akan menarik kehadiran sesetengah serangga seperti Odonata (papatung). Tinjauan lanjut mengenai persepsi pelancong menunjukkan mereka menyokong entopelancongan dan bersedia melibatkan diri. Oleh kerana Gunung Ledang adalah taman negara dan negeri, di bawah bidang kuasa Perbadanan Taman Negara Johor (PTNJ), kakitangan mereka berkemungkinan mengendalikan entopelancongan. Oleh itu, kajian ini juga mengukur tahap pemahaman dan pengetahuan kakitangan PTNJ mengenai serangga yang kemudian diikuti suatu kursus latihan. Secara statistik, terdapat peningkatan ketara dalam pemahaman dan pengetahuan kakitangan tentang serangga selepas latihan. Sebuah buku kecil telah dibangunkan berdasarkan koleksi serangga daripada Gunung Ledang untuk digunakan semasa sesi latihan. Selain menilai potensi dan keviabelan serangga sebagai produk pelancongan baru, selaras dengan agenda kerajaan Malaysia, usaha ini turut menunjukkan perlunya memulihara Gunung Ledang (kawasan tadahan air, dengan menilai ekologi dan warisan budaya).

ACKNOWLEDGEMENT

First of all, I would like to thank the **Almighty God** for all the blessing that he has given me, including the opportunity to finish this study. Thank you for blessing me much more than I deserve, without you, I am nothing.

I would like to express my deepest gratitude and appreciation to my beloved supervisor Prof. Datin Dr Maryati Mohamed for the continuous support of my MSc for her excellent guidance, patience, motivation, enthusiasm, and immense knowledge and also for the co-supervisor Dr. Siti Noor Asyikin bt. Mohd Razali for all her supports and guidance.

I would also like to express my sincere gratitude to Prof. Dr. Ahmad Shakri bin Mat Seman, Dean of Center for Graduates Studies of Universiti Tun Hussein Onn Malaysia (UTHM) for the Scholarship.

I also thank the Johor National Parks Corporation (JNPC) Committee for permission to conduct the research at Gunung Ledang National Parks and also to all the staff who helped me to distribute the questionnaires for the tourist.

I would like to thank to all CoR-SUNR members (Nor, Sal, Fatimah, Shikin, Izzat and Adlil) who helped me to translate the Mini Booklet on Insects to Bahasa Melayu. To Prof. Dr. Idris Ghani and the member of Pusat Sistemik Serangga, Universiti Kebangsaan Malaysia (UKM) for allowing and assisting us to use the facility and expertise for identification of insects.

I will forever be thankful to Associate Professor Dr Alona Cuevas Linatoc-Flores and Jonathan Flores for providing assistance in numerous ways and also to my aunt Bebot and cousin Agnes for their support before I started this study. I owe them a huge debt of gratitude.

I would also like to thank all the special people that surround me. My CoR-SUNR Family: Norradiah, Salasiah, Fatimah, Arney, Shikin, Izdihar, Amira, Amalina, Nazrin, Izzat, Adlil, Taufik, Shafiq, Amin and Nizam – thank you for helping me in so many ways and for your friendship. I will forever remember in my heart the moments and stories you shared with me during these years together.

I extend my sincere word of thanks to Prof. Datin Dr. Maryati Mohamed, who always been there not just only a supervisor or mentor but also a mother. She taught me how a person can succeed in achieving what seems impossible to begin with. There are no words that can express my gratitude and appreciation for all you have done for me. I would also like to thank Prof. Dato Dr. Mohamad Noh the Vice-Chancellor of institutions (University Tun Husein Onn Malaysia) where my dreams are gradually fulfilled.

To my cherish friends' onef'zky Analyn and Ailen: Through it all – the good, the bad, the ups and downs – thank you for being there. A special thanks goes to all my friends in Macau (Flexee, Lerma, Ruby, Maribel, Gerlie, Eunice, Samuel, Jeronimo, Bernard, Paul and Michael) and Gin-Psyche Berkz (Sheila, Leslie, Armella, Maricar, Dowell, Juan Victor, Ryan and Shyrose) thank you very much guys. To Tatay Edz, thank you for providing comfort and advices.

To all my beloved family, Mailyn, Marlene, Mannylyn, Michael, kuya Greg, kuya Jun-Jun, kuya Gomer, Tess, Yaya, Anabel, nieces' and nephews' although you have not been literally beside me during my study, I would like you to know that you are all my inspiration and motivation for everything, as I dedicate this accomplishment to all of you especially to our loving and supportive mother Clara Buena Cuevas David. Thank you for supporting me and allowing me to follow my dreams despite of everything, without your endless support, enduring love, guidance, motivation and encouragement I could not made it this far. Thank you for untiring support and guidance throughout my journey. And lastly, a very special thanks to my father.

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LIST OF ABBREVIATIONS

CoR-SUNR	-	Centre of Research on Sustainable Uses of Natural Resources
MNS	-	Malaysian Nature Society
MOCAT	-	Ministry of Culture, Arts and Tourism
MOTOUR	-	Ministry of Tourism, Malaysia
NKEA	-	National Key Economics Areas
PTNJ	-	Perbadanan Taman Negara Johor
SPSS	-	Statistical Package for Social Science
UKM	-	Universiti Kebangsaan Malaysia
IUCN	-	International Union for Conservation of Nature

CHAPTER 1

INTRODUCTION

1.1 Introduction

Malaysia is one of the world's richest in biodiversity of flora and fauna and this has enabled the country to excel in nature based tourism. One of the ecosystems that harbour this rich biodiversity is the tropical rainforest a typical of Malaysia's forest.

Malaysia's forest is one of oldest in the world, for example, a rock from Endau Rompin National Park has been carbon dated to about 240 million years old (MPN, 2006). Another example is Langkawi Island, Many of the forests and mineral deposits here are more than 500 million years old (Hughes, *et al.*, 2010).

A total of 45% land area in Peninsular Malaysia is still forested (MTC, 2007). In addition, according to Forestry Statistics 2012, the land area of peninsular Malaysia is about 13.18 million hectares, and the forested area covers about 5.79 million hectares while the non-forested area covers of 7.39 million hectares (Forestry Department Peninsular Malaysia, 2012).

Insect is the most diverse organism in the world. For example, there are estimated 100,000 species of beetles (Thiessen, 2012), 28,000 species of butterflies (Islam, *et al.*, 2011), 3,000 species of phasmids (Australian Museum, 2013), 2,500

species of cicadas (Sueur, Windmill and Robert, 2009), 5,500 species of dragonflies (Abbott, 2005), 2,600 species of termites (Ahmed, *et al.*, 2011), and more than 12,000 species of ants are reported worldwide with further expected numbers of species up to 22,000 (Umair, *et al.*, 2012). For Malaysia, in an assessment made by MONRE 2007, invertebrates that have been identified are about 150,000, most of them are insects. With this, insect is not only species rich but is generally abundant and a potential conspicuous tourism product.

This thesis endeavours to introduce insects as a tourism product. Its viability was studied indicating groups that are visible and recognizable by practitioners and tourists. This work was carried out in Gunung Ledang National Park a renowned tourist destination in Johor. To support the continuous promotions of insects as a tourism product a training course was carried out among staff of *Perbadanan Taman Negara Johor* (PTNJ) who are responsible in managing the Park.

As more people get to know nature tourism products of Malaysia it is good to introduce new products and diversify. An example of new nature tourism product is the frog. Frog tourism or anuran tourism is popular in Sabah, showcasing about 63 anuran species recorded at Crocker Range Park, 33 and seven species are endemic to Borneo and Sabah (Kueh, *et al.*, 2006). Anurans in Crocker Range Park fulfil the seven criteria to measure the potential of Anurans or Frog Tourism which are endemism, rarity, reliability of sightings, morphological attractiveness, behavioural enticement, safety and linkage to local cultures (Kueh, *et al.*, 2006) This proves that anurans really possess big potential as nature tourism product and subsequently, substantiate anurans tourism (Kueh, 2004).

As Malaysia is biodiversity rich it is good to look around and promote other organisms for tourism. Among the biodiversity being species rich abundant and closely associated with people yet no much information is known to the common people, insects hold potential. Information obtained through research at universities could be translated to further develop entotourism.

Entotourism is not a totally new idea. As example, there are several butterfly farms around the country, including Kuala Lumpur, Penang, Sabah, and the Cameron Highlands, which is known as the butterfly capital of Malaysia (Eliot and

Bickersteth, 2002). For the record, there are more than 6,000 species of butterflies and moths in Malaysia (Lee and Krishnapillay, 2004).

1.2 Potential and Promotion of Insect in Tourism

Insects have a long history in Asia. They had been part of recreation and tourism activities, and some species reared as pets, such as the rhinoceros beetles (Geoff, 2011). While the role of insects in recreation and tourism (i.e. dragonfly gatherings, and educational outings) is slightly modest in some parts of the world like in North America, Europe, Australia and Japan, some of these activities are increasing in popularity (Lemelin, 2009).

Given the vast forest of Malaysia, the country is home to countless population of insect species (Eliot and Bickersteth, 2002).

Another interesting insect species unique to Malaysia are fireflies (*Lampyridae*). Fireflies are commonly found in mangrove areas, and some of the popular places for fireflies tourism are Kuala Selangor and Leban River (both in Peninsular Malaysia) and the Garama River in Sabah

Insect resources have showed their potentials in industry, agriculture and ecological environment, and also have been considered important resources to solve the problem for food shortage (Chuanhui, *et al.*, 2010). People used to think that silkworm and bees are the few insects that could benefit human being whilst most bring disadvantages and even considered distasteful by mankind (Chuanhui, *et al.*, 2010). In addition, because of their harmful despite small bodies and unappealing appearances many people are not fond of insects. However, the advantages that insects brought to people are far more than the disadvantages. In order to improve the utilization of insect-resources, people should be educated and people's traditional mind set and perception towards insects should be changed (Chuanhui, *et al.*, 2010).

Malaysia is one of the leading countries in terms of nature tourism. It can be attributed to its rich biodiversity. Being in the tropics, Malaysia is endowed with a diverse flora and fauna both in terrestrial and marine ecosystems. Currently, Malaysia has designated 24 national parks and Gunung Ledang is one of them.

In some countries insect has been successfully packaged as nature tourism product particularly for the dragonfly, order Odonata. In some regions of China, Odonata are sold for their colours, while in other Chinese provinces and some Asian countries like Malaysia, Thailand, Laos, and Bali, dragonflies serve a culinary purpose (Lemelin, 2009). Odonata are also found in Japanese leisure activities where they serve as pets and as inspirations for various art forms including Haiku poetry (Lemelin, 2009).

1.3 Research Questions

This research study was engaged to answer the following questions.

1. What kinds of insects are suitable to be promoted as nature tourism product?
2. What insects are viable as tourism product?
3. What is the potential of Entotourism in Gunung Ledang, Johor?

1.4 Aim and Objectives of the Study

This study introduces the importance and evaluates the potential of insects as nature tourism product. Efforts to promote insects in tourism and increase awareness of society to the conservation of biodiversity of insects were done.

The aim of this study is to promote another potential nature tourism product the insect; thus provide diversification for the tourism industry in Malaysia in line with the National Key Economic Areas (NKEA) of the Malaysian government.

The study has the following objectives:

1. To investigate the kinds of insect that have potential to be promoted as nature tourism product in Gunung Ledang, Johor
2. To determine the viability of insect as nature tourism product in Ledang, Johor
3. To assess the potential of Entotourism in Ledang Johor

1.5 Significance of the Study

This study will enable nature tourism practitioner to present another viable natural product that will be based on its constant visibility and occurrence. This would add value to the value of insect to form another basis for its conservation.

Entotourism initiated in Gunung Ledang will promote further nature tourism in the State of Johor. This can then be used as a model for other tourist destinations in Johor and elsewhere.

Gunung Ledang has been chosen as the study area because it is one of the National Parks in Johor whose insects have not been completely studied by researchers, despite being considered as one of the popular areas among the local people and foreigners. Moreover, Gunung Ledang is a popular destination for local and international nature-lover tourists.

1.6 Scope

The scope of the study is focused on the entotourism potential in Gunung Ledang National Park, Johor, Malaysia. It explores the commonly found insect groups that have the potential for tourism and why promote insects in nature-based tourism. Furthermore, this study will enhance the economic value of insect in our ecosystem.

The study was conducted in two trails (Trail A- most visited trail and Trail B – less visited trail) that are commonly trekked by tourists visiting Gunung Ledang. The study focuses on eight commonly found insect groups: ants (Hymenoptera), butterflies (Lepidoptera: Rhopalocera), Termites (Isoptera), Dragonflies (Odonata: Anisoptera), Moth (Lepidoptera: Heterocera), beetles (Coleoptera), cicadas (Homoptera) and damselflies (Odonata: Zygoptera). Observation and collections of insects were conducted at the time tourists are practically exploring Gunung Ledang (8:00am to 12:30pm and from 1:00pm to 5:30pm).

This is to provide realistic accounts of what tourists can actually encounter upon visiting Gunung Ledang. Finally, to be able to determine the viability of running entotourism in Gunung Ledang tourists as well as staff of PTNJ were given a structured questionnaire to determine their perception of entotourism.

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