



UNIVERSITI PUTRA MALAYSIA

***FEEDING HABIT OF MANTIS SHRIMP, *Miyakea nepa* (Latreille, 1828)
FROM COASTAL WATERS OF PANTAI REMIS, PERAK***

NUR SYUHADA BINTI MAT NOOR

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FACULTY OF AGRICULTURE
UNIVERSITI PUTRA MALAYSIA
SERDANG, SELANGOR**

2012

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**This project report is submitted in partial fulfillment of the requirements for
the degree of Bachelor of Agriculture (Aquaculture)**

**DEPARTMENT OF AQUACULTURE
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2012

CERTIFICATION OF APPROVAL
DEPARTMENT OF AQUACULTURE
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This is to certify that I have examined the final project report and all corrections have been made as recommended by the panel of examiners. This report complies with the recommended format stipulated in the AKU4999 project guidelines, Department of Aquaculture, Faculty of Agriculture, Universiti Putra Malaysia.

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ABSTRACT

Studies on feeding habit and diet preference by *Miyakea nepa* was conducted from March to July 2012. The study was done to examine feeding habit and types of food items and diet preference by *M. nepa*. The diets composition of *M. nepa* were examined based on 115 specimens taken from local fishermen in Pantai Remis, Perak. The diet composition were grouped into eight major categories consisted parts of shrimp, polychaete fragments, squid tissues, fish tissues, gastropods, shell fragments, eggs, and unidentified food items. In term of percentage, the most predominant prey items in the stomach of *M. nepa* were parts of shrimp (36.94%), followed by polychaete fragments (29.41%), fish tissues (14.1%), shell fragments (6.64%), squid tissues (5.28%), eggs (4.12%), unidentified food items (2.4%) and gastropods (1.58%). Shrimp is the most dominant food items ingested by *M. nepa* followed by polychaete worms and these both food items could be regarded as important diets for *M. nepa*. On the basis of food composition found in the stomach, it can be referred that *M. nepa* is carnivorous in feeding habit and feed on shrimp, polychaete, fish and squid.

ABSTRAK

Kajian ke atas tabiat pemakanan dan keutamaan diet oleh *Miyakea nepa* telah dijalankan dari bulan Mac hingga Julai 2012. Kajian ini telah dilakukan untuk menentukan tabiat pemakanan dan jenis-jenis item makanan dan keutamaan diet oleh *M. nepa*. Komposisi diet oleh *M. nepa* telah dikaji berdasarkan 115 spesimen yang telah diambil daripada nelayan-nelayan tempatan di Pantai Remis, Perak. Komposisi diet telah dibahagikan kepada lapan kategori utama yang terdiri daripada bahagian udang, serpihan cacing laut, tisu sotong, tisu ikan, siput, serpihan cengkerang, telur dan bahan makanan yang tidak dikenali. Dari segi peratusan, bahan makanan yang paling utama di dalam perut *M. nepa* adalah bahagian udang (36,94%), diikuti oleh serpihan cacing laut (29,41%), tisu ikan (14.1%), serpihan cengkerang (6.64%), tisu sotong (5.28%), telur (4.12%), bahan makanan yang tidak dikenali (2.4%) dan siput (1.58%). Udang merupakan bahan makanan yang paling utama dimakan oleh *M. nepa* diikuti oleh cacing laut dan kedua-dua bahan makanan ini boleh dianggap sebagai penting untuk *M. nepa*. Berdasarkan komposisi makanan dijumpai dalam perut, ia boleh dirujuk bahawa *M. nepa* adalah karnivor dalam tabiat pemakanannya dan memakan udang, cacing laut, ikan dan sotong.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Mantis shrimps or stomatopods are a marine crustacean belonging to the order Stomatopoda (Ahyong, 2004). They belong to phylum Crustacea in the class Malacostraca, subclass Eumalacostraca, and superorder Hoplocarida (Martin and Darvis, 2001). Mantis shrimp are active predatory marine crustaceans and consist of about 450 species worldwide. Their common name “mantis shrimp” is derived from structure of the raptorial claw which are divided into two functional forms: spearers and smashers (Caldwell and Dingle, 1976). Spearing claws have a series of dactyl bears teeth which is used to holding prey such as fish, shrimp, and other soft-bodied preys. Meanwhile, smashing claws have a smooth dactyl and propodus which is used as hammer to break open hard bodied prey such as crabs and snails (Dingle and Caldwell, 1978).

Mantis shrimp body is elongated, flattened from top to bottom and also shrimp-like or lobster-like crustacean. Mantis shrimp is relatively large crustacean that range in size from 2 cm length to 36 cm in length (Barnes, 1974). Most mantis shrimp are found in shallow tropical or subtropical seas. Some species commonly occupy holes and burrows in muddy or sandy sea bottom and also usually live in rock or coral crevices. They are very efficient predators that hunt and kill animals

for their food and feed on various fish, mollusks and other crustaceans (Evans, 2005).

Mantis shrimp are commercially exploited in several parts of the world, such as *Squilla mantis* in the Mediterranean and *Oratosquilla oratoria* in Japan. In several countries such as Spain, Italy, Egypt and Morocco mantis shrimp can be found easily in their fish market (Abello and Martin, 1993). Mantis shrimp is important role in marine ecosystem due to its useful bioindicators of marine pollution stress on coral reefs (Erdmann and Caldwell, 1997). Apart from a commercial food source mantis shrimp is also kept as pet and has become popular hobby among marine pet keepers. But some of aquarist keep assumes mantis shrimp as pest because they prey on others animal in the aquarium tank such as fish, small crustacean and coral. The commercial fishermen in USA consider mantis shrimp as problematic during the fishing operation and also do not have commercial value. However, some country such as Malaysia, mantis shrimp becomes favorite seafood for the Chinese community. In Malaysia, the price for mantis shrimp is around USD 1 to USD 2 per kg for freshly caught mantis shrimp. Meanwhile, in the seafood restaurant the prices of ready cooked is about USD 4 to USD 6 per kg. Therefore, it show that mantis shrimp has a big potential in seafood industry especially in Asia (Musa and Wei, 2008).

Not many works have been reported on mantis shrimp in Malaysia. This is due to the less attention paid to this crustacean by the researchers. These projects were carried out to investigate the diet of mantis shrimp by an analysis of stomach contents with regard to the different months. Thus this study was established to address the following objectives:

1. To examine the types of food items and diet preference by *Miyakea nepa*.
2. To determine feeding habit of *Miyakea nepa*.

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