

## ABSTRACT

This paper presents the species diversity and distribution of demosponges dwelling in the coral reefs from Khrum Islands, the eastern coast of the Gulf of Thailand. The field surveys were conducted at 13 sites of Khrum islands, over the period December 2002 and February 2003. Most of the investigations were carried out by SCUBA diving during daytime and random observation throughout the reefs. The results yielded 37 species of demosponges from 11 Orders, 25 families and 30 genera. The most abundant and common sponges in this area are: *Iotrochota baculifera* Ridley, *Chondrilla australiensis* (Carter), *Paratetilla bacca* (Selenka), *Xestospongia testudinaria* (Lamarck) and *Oceanapia sagittaria* (Sollas).

## INTRODUCTION

Khrum Islands is one of undisturbed islands of the inner Gulf of Thailand, locating between 12° 40' - 12° 43' N and 100° 40' - 100° 47' E on the east coast of Thailand. It is proximately 5 kilometers from the mainland, and with 12 square kilometers. The Islands play role as marine protected area by Royal Thai Navy for the sanctuary and breeding of sea turtles. Khrum Islands has productive coral reef in the northern and eastern parts. The objective of the present study is to investigate the species diversity and distribution of demosponges from various localities around the Khrum Islands and serves a baseline and updated data for diversity and distribution of marine fauna in coral reef in the Gulf of Thailand.

## MATERIALS AND METHODS

The field surveys were conducted at 13 sites of Khrum islands (as shown in Figure 1), over the period December 2002 and February 2003. The demopong specimens were collected using SCUBA diving during daytime and randomly sampling throughout the coral reefs. Specimens were photographed *in situ* and noted on some morphological and ecological data such as colors, depth, substrates, before preservation in 70% alcohol. The specimens were deposited at Institute of Marine Science, Burapha University, Thailand and voucher specimens were deposited at Zoological Museum Amsterdam, University of Amsterdam, The Netherlands.

For microscopical studies, tangential and perpendicular sections were made and examined using 100-400x magnification. Furthermore, a fragment of sponge was cooked in concentrate nitric acid, the residue was washed and centrifugated 3 times in distilled water and 3 times in 95% alcohol, and suspended in 95% alcohol; spicule suspensions were pipetted on microscopic glass slides; the dried spicules were mounted in Canada balsam for light microscopy. Spicule size data are based on 25 measurements of randomly chosen spicules.

## RESULTS AND DISCUSSION

Thirty-seven species of demosponges from 11 Orders, 25 families and 30 genera were found from the study (as shown in the underwater photos below). Most species of the study are common in coral reefs in the Gulf of Thailand. The most abundant and common sponges in this area are: *Iotrochota baculifera* Ridley, *Chondrilla australiensis* (Carter), *Paratetilla bacca* (Selenka), *Xestospongia testudinaria* (Lamarck) and *Oceanapia sagittaria* (Sollas). Three species are consider to be new species namely, *Plakina* sp. new, *Hymeraphia* sp. new, and *Neopetrosia* sp. new "blue". One species, "*Pachamphilla*" is dubious species which cannot consider into species. Furthermore, the site 1 has the most diversity site among the others. It is because this site has largest area of coral reef.

## ACKNOWLEDGEMENT

This study was supported by Kasetsart University Research and Development Institute and Plant Genetics Conservation Project under the royal Initiative of Her royal Highness Princess Maha Chakri Sirindhorn. We thank Royal Thai Navy for helps and cooperation on accommodation and SCUBA diving equipments. We acknowledge Institute of Marine Science, Burapha University and Zoological Museum, University of Amsterdam for providing facilities for specimen identification

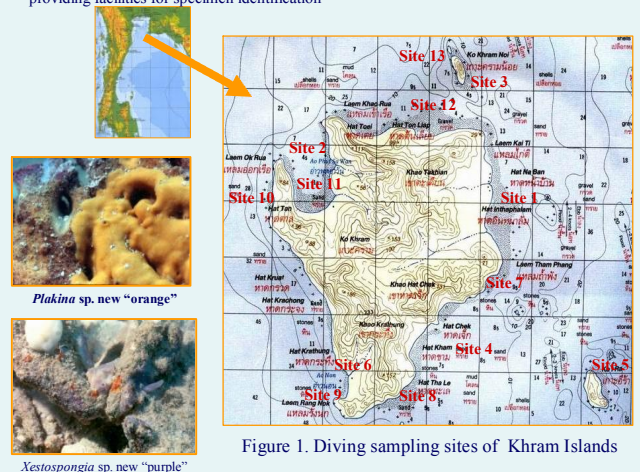


Figure 1. Diving sampling sites of Khrum Islands

