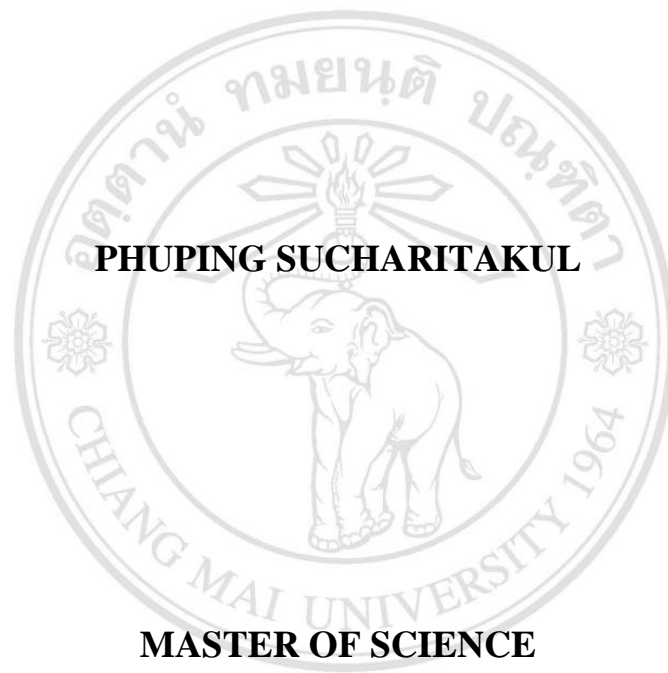


**IDENTIFICATION OF BOX JELLYFISH GENUS**  
***Chironex* FROM THE GULF OF**  
**THAILAND**



**PHUPING SUCHARITAKUL**

**MASTER OF SCIENCE**

**IN BIOLOGY**

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่  
Copyright© by Chiang Mai University  
All rights reserved

**GRADUATE SCHOOL**  
**CHIANG MAI UNIVERSITY**  
**MAY 2016**

**IDENTIFICATION OF BOX JELLYFISH GENUS *Chironex*  
FROM THE GULF OF THAILAND**

**PHUPING SUCHARITAKUL**



**A THESIS SUBMITTED TO CHIANG MAI UNIVERSITY IN PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF SCIENCE  
IN BIOLOGY**

ลิขสิทธิ์ © โดย มหาวิทยาลัยเชียงใหม่  
Copyright © by Chiang Mai University  
All rights reserved

**GRADUATE SCHOOL, CHIANG MAI UNIVERSITY  
MAY 2016**

**IDENTIFICATION OF BOX JELLYFISH GENUS *Chironex*  
FROM THE GULF OF THAILAND**

PHUPING SUCHARITAKUL

THIS THESIS HAS BEEN APPROVED TO BE A PARTIAL FULFILLMENT OF  
THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF SCIENCE  
IN BIOLOGY

**Examination Committee:**

**Advisor:**

*Somchai Bussarawit*  
..... Chairman

(Dr. Somchai Bussarawit)

*Siriwadee Chomdej*  
.....

(Asst. Prof. Dr. Siriwadee Chomdej)

*Siriwadee Chomdej*  
..... Member

(Asst. Prof. Dr. Siriwadee Chomdej)

*Ch. Wongsawad*  
..... Member

(Assoc. Prof. Dr. Chalobol Wongsawad)

Copyright © by Chiang Mai University  
All rights reserved

24 May 2016

Copyright © by Chiang Mai University

*This thesis is dedicated to*

- 1. The mysterious Chirodropid that stung me on 23 March 2013, this study would not have been initiated without you*
- 2. My family for their financial and spiritual support*



*'Be a good faith individual'*

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่  
Copyright© by Chiang Mai University  
All rights reserved

## ACKNOWLEDGEMENT

First of all, I would like to express my appreciation to examination committee for devoting their precious time to act as my examination committee. The first committee, Dr. Somchai Bussarawit, a person who introduced me to the jellyfish world. The second committee, Assoc. Prof. Dr. Chalobol wongsawad, who allowed me to utilize facilities in her lab. Finally, Asst. Prof. Dr. Siriwadee Chomdej, my dearest advisor who sees the best in me. I wholeheartedly thank you her for guidance and support. Without her, I would not have come this far.

I would also like to express my sincere gratitude to Mrs. Krittaya Chanachon for her kind assistance on specimen collection and examination. Likewise, I am grateful for the specimens Ms. Isara Arsiranant and Mrs. Thunyaporn Achalawitkun collected and stored in their collection at Marine and Coastal Resources Research and Development Center, the Eastern Gulf of Thailand and the Central Gulf of Thailand respectively. Besides, I am thankful for kind assistances I received from Dr. Charatsee Aungtonya, a head of reference collection at Phuket Marine Biological Center. Moreover, I owe many thanks to Dr. Allen Collins at Department of Invertebrate Zoology, Smithsonian Institution for his advice and a sequence of *Chironex yamaguchii*. In addition, my gratitude to members of parasitology research laboratory and members of animal genetics and molecular ecology laboratory, especially Dr. Kittisak Buddhachat, for research advices and facilities.

This work would not have been started without the mysterious chirodropid that stung me. Some might say it was unfortunate to get stung by you; however, I am grateful that you stung me severely enough that I wanted to explore into your world. I promise that I would be a world class jellyfish expert one day.

Finally, I am obliged to my whole family for their supports both financially and spiritually. Raising me by love and care, Mr. Chumroon Sucharitakul and Mrs. Chitraporn Harnhirun immunized me a vaccine that allows me to go through difficulties in life easily. No matter what will happen, I know that they will always be there fondling me with their love. Also, I would like to acknowledge Dr. Somchai Harnhirun and his family for taking

good care of me and allowing me to stay with them during the time I had to collect specimens from the Gulf of Thailand. I do appreciated that indeed. This thesis was funded by graduate school, Chiang Mai University and Mr. Chumroon Sucharitakul.



ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่  
Copyright© by Chiang Mai University  
All rights reserved