

ULTRASTRUCTURE STUDY OF POLYCHAETES -
A CONTRIBUTION TO DEVELOPMENT OF BIODIVERSITY
DATABASE SYSTEM

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ULTRASTRUCTURE STUDY OF POLYCHAETES -
A CONTRIBUTION TO DEVELOPMENT OF BIODIVERSITY
DATABASE SYSTEM

By

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	ii
LIST OF TABLES	v
LIST OF FIGURES	vi
LIST OF ABBREVIATIONS	vii
ABSTRACT	viii
ABSTRAK	ix
CHAPTER 1: INTRODUCTION	1
1.1 General Biology of Polychaetes	2
1.2 Database information system on polychaetes	3
1.3 Objectives	4
CHAPTER 2: LITERATURE REVIEW	5
2.1 Taxonomy of polychaetes	5
2.2 Importance of polychaetes	6
2.3 Polychaetes on seagrass bed	8
2.4 Database on polychaetes	9
CHAPTER 3: METHODOLOGY	10
3.1 Collecting Samples	10
3.2 Samples preservation	11

3.3	Laboratory Work	11
3.4	Database development	11
CHAPTER 4: RESULTS		12
4.1	The systematic taxonomy of polychaetes	12
4.2	Polychaetes Database Implementation	27
4.2.1	Input Interface Design	29
4.2.2	Data Processing	29
4.2.3	Output Interface Design	30
CHAPTER 5: DISCUSSION		33
5.1	Ultrastructure study on polychaetes	33
5.2	Polychaetes Database	35
CHAPTER 6: CONCLUSION AND RECOMMENDATIONS		39
REFERENCES		40
CURRICULUM VITAE		43

LIST OF TABLES

Table		Page
4.1	Total specimens were found on seagrass bed in Sungai Pulai, Johore.	12
4.2	Main key information.	28
4.3	Records of data in terms of table.	28

LIST OF FIGURES

Figure		Page
1.1	<i>Ophryotrocha</i> (Dorvilleidae) from Sandgerdi Iceland	2
2.1	Head region, prostomium and parapodia of common polychaetes	5
2.2	Distinct setae of <i>Proscoloplos</i> (Orbiniidae) under SEM and Light micrographs.	5
3.1	Satellite image of Sg. Pulai, Johore.	10
4.1	<i>Eunice</i> sp.	14
4.2	<i>Glycera</i> sp.	16
4.3	<i>Spiophanes</i> sp.	18
4.4	<i>Namanereis quadraticeps</i>	20
4.5	<i>Axiothella jarli</i> (Kirkegarrd,1959)	22
4.6	<i>Ophelina acuminata</i> (Oersted, 1843)	24
4.7	<i>Dasybranchus</i> sp.	26
4.8	Relational model of Polychaetes Database.	27
4.9	Password confirmation interface	29
4.10	Form Interface of Polychaetes Database	30
4.11	List Interface of Polychaetes Database	31
4.12	Glossary Interface of Polychaetes Database	32

LIST OF ABBREVIATIONS

cm	-	centimetre
μm	-	micrometre
mm	-	millimetre
%	-	percent
CO ₂	-	carbon dioxide

ABSTRACT

Polychaetes is a diverse group of marine worm that play an important role in monitoring study of marine environment and as life feed culture in aquaculture industry. This study is aimed to understand characters of polychaetes such as parapodia, chaete and prostomium as are significantly used to identify the species and known to correlate with their preferred habitat. Scanning Electron Microscopic (SEM) study was carried out to observe those diagnostic characters found on polychaetes collected from the seagrass bed in Sungai Pulai, Johor. This area has been gazette as an international listing of important wetlands that comes under the Ramsar Convention. Polychaetes with numerous families have a wide range in sizes, thus its need different methods for preservation and preparation before could be perfectly observed under SEM. Some modifications from standard method have been done during preservation and preparation of the specimens to get the best result during observation. All the information was recorded in a specific database constructed using Filemaker Pro. In addition, as Malaysia committed in Convention on Biological Diversity, the first strategy in the National Policy on Biological Diversity is to enhance the scientific knowledge through research and documentation of biological diversity in Malaysia. Among of the action plan is to construct a database on biological diversity and an effective information dissemination system. This kind of study will become an asset as all the problems of conventionally documented data have been solved.

KAJIAN ULTRASTRUKTUR BAGI POLYCHAETES – SUMBANGAN KEPADA PEMBANGUNAN SISTEM PENKALAN DATA BIODIVERSITI

ABSTRAK

Polychaetes merupakan organisma marin yang memainkan peranan penting dalam penilaian kualiti alam sekitar dan juga sebagai makanan hidup dalam industri akuakultur. Kajian ini adalah untuk mengetahui ultrastruktur pada polychaetes seperti parapodia, setae dan juga prostomium yang digunakan dalam mengenalpasti spesies dan diketahui berkait rapat terhadap penyesuaiannya dengan persekitaran. Mikroskop Elektron Pengimbas (SEM) digunakan untuk memerhatikan ciri-ciri diagnostik pada polychaetes yang dijumpai di kawasan rumput laut Sungai Pulai. Kawasan ini telah digazetkan sebagai kawasan tanah lembap yang mempunyai kepentingan kepada ekosistem dalam Konvensyen RAMSAR. Polychaetes yang mempunyai saiz yang pelbagai antara famili memerlukan kaedah pengawetan dan penyediaan yang berbeza untuk membolehkan spesimen dilihat dengan sempurna. Oleh itu beberapa pengubahsuaian telah dilakukan daripada kaedah piawai untuk mendapatkan keputusan yang terbaik. Segala maklumat yang diperolehi telah disimpan di dalam pengkalan data yang dibina khusus untuk polychaetes dengan menggunakan perisian Filemaker Pro. Strategi pertama dalam Dasar Kepelbagaian Biologi Kebangsaan adalah meningkatkan asas pengetahuan saintifik iaitu dengan mengkaji dan mendokumenkan kepelbagaian biologi di Malaysia. Antara pelan tindakan bagi strategi diatas adalah menghasilkan pengkalan data kepelbagaian biologi dan sistem penyebaran maklumat yang berkesan. Kajian seumpama ini merupakan suatu aset kerana masalah penyimpanan data secara konvensional suatu ketika dahulu telah dapat diatasi.