

BASIC KNOWLEDGE IN MARINE SCIENCES

Edited by

Normawaty Mohammd-Noor



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Table of Contents

Chapter	Page
Part 1 Algae	
<hr/>	
Chapter 1 Algae	
<i>Normawaty Mohammad-Noor</i>	2
Chapter 2 Microalgae	
<i>Normawaty Mohammad-Noor</i>	7
Chapter 3 Seaweed	
<i>Normawaty Mohammad-Noor</i>	12
Chapter 4 Importance of Algae	
<i>Anidha Visvanathan & Normawaty Mohammad-Noor</i>	17
Chapter 5 Toxic Microalgae	
<i>Anidha Visvanathan & Normawaty Mohammad-Noor</i>	23
Chapter 6 Benthic Dinoflagellates	
<i>Anidha Visvanathan & Normawaty Mohammad-Noor</i>	28
Chapter 7 Diatoms	
<i>Anies Aznida Sa'ari & Normawaty Mohammad-Noor</i>	34
Chapter 8 Techniques to Collect Benthic Dinoflagellates	
<i>Anidha Visvanathan & Normawaty Mohammad-Noor</i>	42
Chapter 9 Techniques to Collect Sand-Dwelling Dinoflagellates	
<i>Asilah Al-Has & Normawaty Mohammad-Noor</i>	47
Chapter 10 Technique to Collect and Determination of Algal Cell Density	
<i>Normawaty Mohammad Noor, Anies Aznida Sa'ari & Asilah Al-Has</i>	53

Chapter 11 Technique to Establish Microalgae into Pure Culture

Normawaty Mohammad-Noor & Mohamad Fuad Mohamad Anuar.....58

Chapter 12 Media for Microalgae Culture

Normawaty Mohammad-Noor & Mohamad Fuad Mohamad Anuar.....63

Chapter 13 Scanning Electron Microscopy

Normawaty Mohammad-Noor & Asilah Al-Has.....69

Chapter 14 Making Seaweed Herbarium

Normawaty Mohammad-Noor.....74

Part 2 Beach Profile and Sediment Characteristics

Chapter 15 Beach Profile

Shahbudin Saad.....80

Chapter 16 Littoral Environmental Observation

Shahbudin Saad.....90

Chapter 17 Grain-Size Analysis

Shahbudin Saad.....97

Part 3 Coral Reef

Chapter 18 Suspended Sediment in Coral Reef Area

Shahbudin Saad.....113

Chapter 19 Line Intercept Transect

Shahbudin Saad.....118

Chapter 20 Coral Recruitment	
<i>Shahbudin Saad</i>	127
Chapter 21 Coral Reef Fish Assemblages	
<i>Shahbudin Saad</i>	132
Chapter 22 Determination of Coral Cover (Coral Lifeforms) in Marine Environment	
<i>Mohamed Kamil Abdul Rashid</i>	137

Part 4 Marine Pollution

Chapter 23 Determination of Aliphatic and Aromatic Hydrocarbons in Marine Environment	
<i>Mohamed Kamil Abdul Rashid</i>	144
Chapter 24 Determination of Dissolved Inorganic Nitrogen (DIN) in Marine Environment.	
<i>Mohamed Kamil Abdul Rashid</i>	151
Chapter 25 Water Sampling Techniques	
<i>Anies Aznida Sa'ari, Kamaruzzaman Yunus & Akbar John</i>	158
Chapter 26 Determination of Fecal Coliform and <i>Escherichia coli</i> (<i>E. coli</i>) in Marine Environment	
<i>Mohamed Kamil Abdul Rashid</i>	163
Chapter 27 Determination of Organochlorine Insecticides in Oyster and Marine Sediment	
<i>Mohamed Kamil Abdul Rashid</i>	170
Chapter 28 Detection of Heavy Metals in Sediment and Biological Samples	
<i>Anies Aznida Sa'ari, Akbar John & Kamaruzzaman Yunus</i>	179
Chapter 29 Laboratory Protocols - Sediment Sample Analysis	
<i>Anies Aznida Sa'ari, Kamaruzzaman Yunus & Akbar John</i>	186

Chapter 30 *Anadara granosa* – A Potential Bioindicator in Coastal Waters of Langkawi Island, Malaysia

Kamaruzzaman Yunus, Mohd Zahir Md Suhaimi, Fikriah Faudzi, Mohd Fuad Miskon & Akbar John195

Chapter 31 Bioaccumulation of Selected Metals in Commercially Important Marine Fishes from Selangor Coastal Waters, Malaysia

Kamaruzzaman Yunus., Rina Sharlinda Zabri, Fikriah Faudzi, Mohd Fuad Miskon & Akbar John... ..206

Part 5 Fish

Chapter 32 Larval Feeding Behavior and Sensory Organs

Yukinori Mukai.....215

Chapter 33 Procedure of Histological Experiment

Yukinori Mukai.....221

Chapter 2 Microalgae

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Introduction

Microalage is small in size ranging from few micron to about 1 mm. The cell morphology varies from unicell, colonies or filament. They can be found in almost all habitat. Microalgae is very important in many aspect and nowadays has become important subject especially concerning biofuel and carbon footprints. Microalgae has been suggested as a potential candidate in solving these problems.

In this chapter, only a few important taxa of microalgae will be discussed.

Cyanophyceae/Cyanobacteria (Figs 1A & B)

Cyanobacteria has been reported to occur on earth billions of years ago and can be considered as one of the earliest algae on earth. Cyanobacteria appears blue to green color due to pigments phycoyanin and allophycocyanin. Recent studies have suggested that the ability of algae and plant to perform photosynthetic activity is by gaining plastid from cyanobacteria through endosymbiont process. Cyanobacteria can be found in many habitats whether in terrestrial or in aquatic environments. They can be found in lakes, river, pond, ocean, tidal pool, soil, on rock and trees. One of the important criteria of cyanobacteria is the ability of the species to do nitrogen fixation. Cyanobacteria produce a thick wall cell called heterocyst, in which the cell can perform nitrogen fixation by converting nitrogen gas into ammonia (NH_3), nitrites (NO_2) or nitrates (NO_3) (Van Den Hoek *et al.*, 1995). The formation of heterocyst is enhanced when the environment is less eutrophic. This gives an advantage to cyanobacteria over other algae and therefore increases the chance of survival of cyanobacteria. Another important structure in