

BASIC KNOWLEDGE IN MARINE SCIENCES

Edited by

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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

Shahbudin Saad.....127

Chapter 21 Coral Reef Fish Assemblages

Shahbudin Saad.....132

Chapter 22 Determination of Coral Cover (Coral Lifeforms) in Marine Environment

Mohamed Kamil Abdul Rashid.....137

Part 4 Marine Pollution

Chapter 23 Determination of Aliphatic and Aromatic Hydrocarbons in Marine Environment

Mohamed Kamil Abdul Rashid.....144

Chapter 24 Determination of Dissolved Inorganic Nitrogen (DIN) in Marine Environment.

Mohamed Kamil Abdul Rashid.....151

Chapter 25 Water Sampling Techniques

Anies Aznida Sa'ari, Kamaruzzaman Yunus & Akbar John.....158

Chapter 26 Determination of Fecal Coliform and *Escherichia coli* (*E. coli*) in Marine Environment

Mohamed Kamil Abdul Rashid.....163

Chapter 27 Determination of Organochlorine Insecticides in Oyster and Marine Sediment

Mohamed Kamil Abdul Rashid.....170

Chapter 28 Detection of Heavy Metals in Sediment and Biological Samples

Anies Aznida Sa'ari, Akbar John & Kamaruzzaman Yunus.....179

Chapter 29 Laboratory Protocols - Sediment Sample Analysis

Anies Aznida Sa'ari, Kamaruzzaman Yunus & Akbar John.....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 17 Grain-size Analysis

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Introduction

Grain size is a basic descriptive measure of sediments. The grain size is the most fundamental property of sediment particles, affecting their entrainment, transport and deposition (Simon & Kenneth, 2001). Beach sediment comes in all shapes and sizes, from rounded boulders to sand grains barely visible with the naked eye. Terms such as boulder, cobble, pebble, granule, sand and silt are used to describe the particle size (Soulsby, 1997; Haslett, 2000). Clays and silts are collectively called mud, and granules, pebbles and cobbles are collectively called gravel. Water-worn, rounded gravel is often referred to as shingle. The character of sediment particles and texture reflect the wave environment of the beach and in turn can also influence the beach profile (Bascom, 1951).

Grain-size distribution patterns may be characteristic of sediments deposited in certain environments and can yield information about depositional processes (Flügel, 2009). Sediment transfer in the coastal zone arises from a number of forcing mechanisms. The most prominent is wave action, although tidal currents, river and estuary flows, and wind all play supporting roles, particularly in determining the drift of sediment along the shore (Carter, 2002).

Grain-size analysis, also known as particle-size analysis or granulometric analysis is perhaps the most basic sedimentological technique to characterize and interpret sediments and sedimentary rocks. The material sizes on any particular beach will normally comprise a range of grain sizes. Thus, it is a standard practice to measure the grain size distribution by a sieve analysis from which the percentage by weight of material passing through a range of sieve sizes