

Contents

Preface

1.	Introduction	1
2.	Seawater	17
	Compositional Differences from Fresh Water	
	Geochemical Explanations	
	Human Consumption of Seawater	
	Environmental Considerations	
3.	Marine Microbes	28
	Introduction	
	Viruses	
	Ecological Roles of Marine Microbes	
	Herbivory (or Secondary) and Tertiary Production	
	Microorganism	
	Evolution	
	Pre-Microbiology	
4.	Marine Viruses	55
	Introduction	
	The Genetic Diversity of Viruses	
	Virus Life Cycles	
	Effect of Viruses on Host Diversity	
	Effect of Virus on Environmental Chemistry	
5.	Marine Microorganisms	60
	Introduction	
	The Ocean as a Source	

11. Dinoflagellate	146
Introduction	
Morphology	
Life-cycle	
Ciguatera	
12. Ciguatera	151
History	
Etymology	
Distribution	
Detection Methods	
Symptoms	
Treatment	
13. Phytoplankton	155
Introduction	
Photosynthetic Picoplankton	
Methods of Study	
List of Eukaryotic Picoplankton Species	
Plankton	
Functional Groups	
Biogeochemical Significance	
14. Aquaculture of Phytoplankton	158
Photosynthetic Picoplankton	
Methods of Study	
List of Eukaryotic Picoplankton Species	
Plankton	
Functional Groups	
Biogeochemical Significance	
15. Protist	175
Introduction	
Classification	
Types of Protists	
<i>Index</i>	189

	Life-saving Drugs	
	Enzymes	
	Harmful Algal Blooms	
	Pharmaceuticals from the Sea	
	Microbes in the Ocean	
6.	Harmful Algal Blooms	84
	Introduction	
	Mechanisms of Harm	
	Pfiesteria.	
	Algal Blooms in the Ocean	
	Requirements for a Bloom	
	Benefits of Algal Blooms	
	Bloom Occurrences and Impact	
	Life in Extreme Water Environments	
7.	Importance of Water	108
	Introduction	
	The Economics of Water	
	Conclusion	
8.	Controlling Bacterioplankton	123
	Introduction	
	Bacterial Metabolism	
9.	Sea Water Condition	130
	Introduction	
	Temperature and Density	
	Density Structure of the Ocean	
	Tracers of Ocean-Water Masses	
10.	Marine Ecosystems	139
	Introduction	
	Harmful Algal Blooms	
	Environmental Factors	
	Warming and Algal Growth	
	Emerging Diseases and Novel Strains	