Preface

When we started to write this book, there were already a few excellent textbooks on the market describing photosynthesis in aquatic, including marine, environments. Noteworthy among them are the graduate-level books Aquatic Photosynthesis by our friends and colleagues Paul Falkowski and John Raven and the equally high-level book Light and Photosynthesis in Aquatic Ecosystems by our more recent acquaintance John Kirk. In addition, Anthony Larkum, Susan Douglas and John Raven had edited a multi-authored volume in the series Advances in Photosynthesis and Respiration entitled Photosynthesis in Algae. So why, then, yet another book on marine photosynthesis? First, the present text is suitable also for under-graduate level university and college students (BSc and equal levels) of biology or marine sciences, and parts can also be used for high-school science students who wish to brush up on photosynthesis and connect it with marine studies. Secondly, while the previous books describe marine photosynthesis and light as its driving force in great detail, the present book takes a more general look upon our oceans as an important habitat for plant growth (using the broad definition of marine 'plants' as including all photosynthetic organisms in the oceans), and we try in our text to link photosynthesis to the very special and different-from-terrestrial milieus that marine environments provide. Thus, researchers in the fields of terrestrial plant, or more general marine, sciences may here also be introduced to, or complement their knowledge in, the expanding field of marine plant 'ecophysiology' as related specifically to photosynthesis as the basis for marine plant growth. In this context we treat acclimations not only to light and the inorganic carbon composition of seawater, but also, e.g. to desiccation in the intertidal and pH in rockpools. Also, there is a chapter on how some marine plants can, through their photosynthetic characteristics, change the environment for other plants. Further, the present book fills in some gaps not covered extensively in the other volumes. These include subjects such as photosymbiosis in marine invertebrates, significantly larger portions devoted to marine macrophytes (macroalgae and, especially, seagrasses) and a background to common methodologies used for marine photosynthetic research. Lastly, but most importantly, however, the present book came about because we felt the need to convey our experiences in teaching and working on various aspects of marine plant photosynthesis to a larger audience than those peers and graduate students that (occasionally) read our scientific papers. The fact that much of this book reflects those experiences also goes hand in hand with the fun we had writing it; we hope you will enjoy reading it too!

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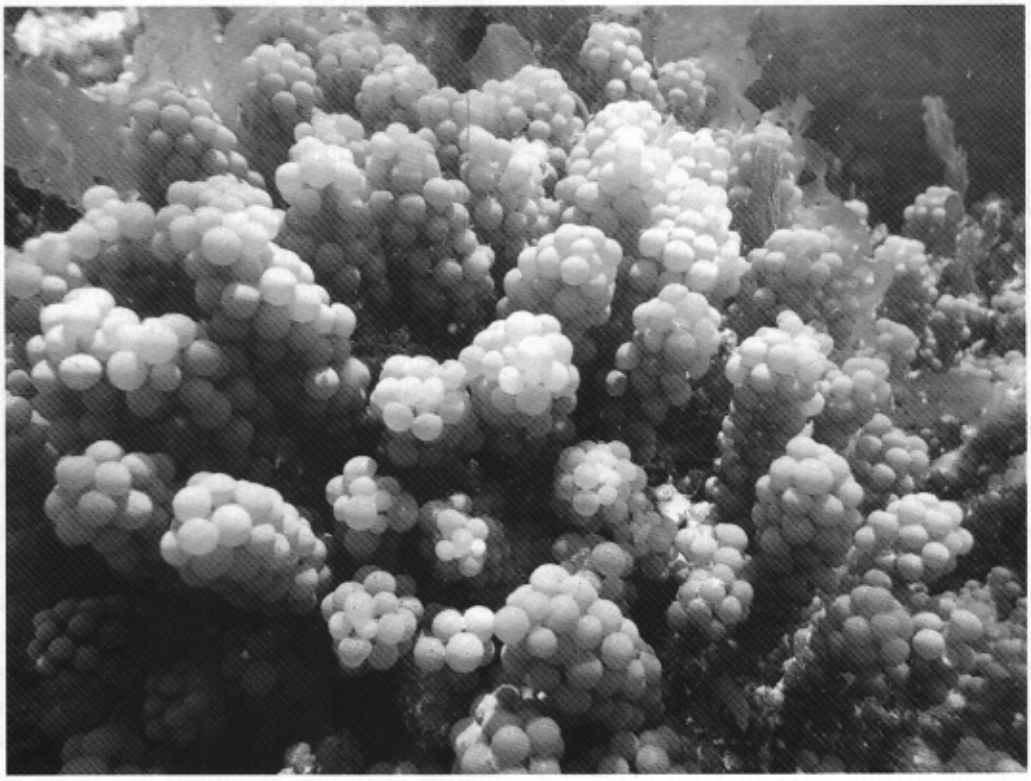
PS: This is a First Edition and, so, mistakes are unavoidable. In order to make forthcoming editions better, we would be happy for any advice on improvements. Therefore, please do e-mail us any comments you may have on the contents of this book.

Cover photo: A thick turf of red and brown algae growing in the high-energy surf zone, Malta. Photo by Mats Björk.



The green alga *Caulerpa racemosa* at Zanzibar. Photo by Katrin Österlund.