

# Preface

This book provides a concise but thorough account of our current knowledge about marine parasites. It is a text aimed at researchers and students, and can be used in introductory and advanced courses on marine biology, aquaculture, marine parasitology, general parasitology, invertebrate zoology, zoogeography and ecology. It is a text that will be of great use to postgraduate students. Seventy-five authors from around the world, all of them eminent in their field, have contributed in their area of expertise. They were asked to emphasise the many gaps still to be filled, and so provide a stimulating guide for future research. More than half of all animal species are parasitic, according to some estimates. Many parasites, including marine species, are of great ecological, medical or economic importance. In the marine environment, for example, the effects of parasites in aquaculture can be devastating. Total global aquaculture in 2004 was estimated to be worth more than US\$55 billion, the greatest losses to it caused by parasites. Parasite species led to the collapse of European flat oyster aquaculture after 1979, and to devastating effects on oyster culture on the North American east coast over many years. Introduction of a monogenean ectoparasite into the Aral Sea, in Uzbekistan and Kazakhstan, led to the total collapse of sturgeon and caviar fisheries in that region in the 1930s. Some marine parasites have considerable medical importance. A human roundworm, *Trichinella*, can be acquired from marine animals such as walrus, and others cause anisakiasis with sometimes serious effects. The ecological role of many marine parasites may be considerable, although it is little understood. Parasites can also be used as cheap biological tags, permitting distinction of host populations, and they are used for pollution monitoring.

Chapter 1 sets out definitions and describes adaptations, and the distribution of marine parasites in the protistan and animal kingdoms. Chapters 2 to Chapter 5 describe the various parasite groups. The sections differ a great deal in their approach, because the state of our knowledge of each group differs, often substantially. Some taxa, such as the phylum Cycliophora, which contains only one described species, have been described only recently. Others, for example the digenean trematodes, include thousands of species that have been studied in great detail over many years. In relation to ecological and behavioural studies, some taxa, for example the Rhizocephala, are known to have fascinating adaptations that result in modification of their hosts' behaviour. The ecology of parasitism in other taxa, such as the Rotifera, has hardly been studied.

Chapter 6 to Chapter 9 deal with behavioural, ecological, evolutionary and zoogeographical aspects. A detailed and well-illustrated section on cleaning symbiosis will be of particular interest to marine biologists, and the sections on parasite-induced changes in host behaviour, speciation and coevolution will be of particular interest to evolutionary biologists. The discussion of coevolution addresses a 'hot' topic, as do the various sections dealing with ecological aspects, such as metapopulation biology, community structure, transmission of parasites, ecological