Preface

My goal in writing this book was to present in one volume comprehensive and detailed information on the virology of fishes—predominantly species of the class Osteichthyes, but including representative members of the classes Chondrichthyes and Myxini. The literature about fish viruses and fish viral diseases has mostly been written by those who have a dominant or, in some cases, an exclusive interest in fish health: researchers, practitioners, culturists, and production managers. Accordingly, the book is intended to be of particular interest to them. A smaller but significant body of literature derives from researchers interested in viruses per se—their biophysical and biochemical properties—and for the virologist, biochemist, and molecular biologist I have attempted to provide highlights of available information on the properties of fish viruses.

The book is divided into six parts, the first four of which appear in descending order of significance to fish health. Pathogenic viruses that have been isolated are presented in Part I, which is subdivided into two sections: a group of chapters on viruses with demonstrably high virulence followed by a smaller group of chapters on viruses commonly regarded as having low virulence. Part II is devoted to isolated viruses whose virulence or pathogenicity remains to be determined. *Bona fide* viruses seen by electron microscopy but not yet isolated are discussed in Part III, and Part IV presents those disorders of fishes involving viruslike particles. In time, research may demonstrate that some of these viruslike particles are true viruses, whereas others may well be relegated to the category of artifact. Part V, on chlamydia, is included because these etiologic agents, like viruses, are obligate intracellular pathogens. The final part comprises three brief chapters on diseases and agents once thought to be viral but, according to new data, do not actually involve virus.

The chapters within the six parts are an alphabetized mix of common names of fish hosts, internationally agreed upon names of viral diseases, plus generally accepted names of several of the etiologic agents themselves. In defense of such an arrangement, as opposed to categorization by nucleic acid or major viral grouping, the genome and group affiliation of some fish viruses remain to be determined, but common names of hosts are readily recognized by persons concerned with fish

health. Also, those interested in major viral groupings or specific nucleic acid will find the index helpful.

The discussions of individual viruses and their infections follow a set format, with some sections omitted for the lesser-known agents. Each chapter begins with a definition and detailed history of the virus or disease. The text then proceeds to describe signs of infection or disease and pathologic changes, etiology, diagnosis, isolation, identification, transmission, source of the virus, host and geographic range, and immunity. Where relevant, a section about control measures is included. Some viruses are well known and have been studied for a long time, and the references cited for them number more than a hundred. Other, newly discovered viruses have been reported only in a single publication; consequently, just a few sections of information are given.

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Fish Viruses and Fish Viral Diseases

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