

Preface

In the past 20 years, fish cytogenetics has become an essential tool in fields as diverse as systematics and evolution, conservation, aquaculture and more recently, genomics. Recent technical advances, especially in molecular procedures, such as chromosomal gene mapping by Fluorescence In Situ Hybridization (FISH), have contributed to enhancing the potential of fish cytogenetic research, and thereby resulting in a growing number of scientific papers.

At present, there is a recognized need to put together data and opinions of the various groups of specialists who are spread over several countries and laboratories and often operating within different research contexts, all sharing cytogenetics as a common tool to approach questions in both fundamental and applied ichthyology.

The book has been also prepared to provide a comprehensive summary of the current state of research in this field by overcoming the limits imposed by the constraints of current scientific journals.

Fish Cytogenetics is organized in four sections (systematics and evolution; biodiversity conservation; stock assessment and aquaculture; genomics) covering the major fields of present fish cytogenetic research. Although we are very aware that much remains to be done before obtaining a complete view of the fish chromosome evolution, the eighteen contributions from thirteen countries which make up this book, provide a comprehensive picture of the ongoing research around the world.

The different chapters of this volume demonstrate, without any ambiguity, the wide ranging role that cytogenetics plays in fish biological science. In particular, some chapters of the last section indicate the complementarity between cytogenetics and genomics, and reflect the growing interest toward a "cytogenomic" approach, as a new strategy to

integrate sequencing data coming from the genome projects that are completed or in progress for some fish species, into a broader structural context.

Due to the diversified arrays of themes approached, including evolution, biodiversity and genomics, the book is addressed not only to specialists in cytogenetics but to all scientists interested in fish biology.

We would like to express our gratitude to all the scientists that have contributed to the publication of *Fish Cytogenetics*. First off all to the Authors, whose expertise in the various topics is the major value of present book. The majority of them also provided valuable help as referees.

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