chapters which include subjects as diverse as the care of frogs and tadpoles, DNA recombination studies in oocytes, histological preparation of oocytes and embryos, analysis of class II gene regulation and analysis of cellular signalling events. Each chapter includes a very concise and readable introduction and comprehensive references, thus providing a good starting point for those who may be considering beginning studies in *Xenopus*. The methods included are (certainly in the areas with which I am familiar) up to date and generally well explained. ‘Tips’ on getting these methods to work are also present and should add greatly to the success of people using techniques with which they are unfamiliar.

This book is well written and comprehensive, considering the wide variety of techniques covered. We have found it extremely useful in the laboratory as a quick reference, a source of new methods and interesting reading when looking for new ideas about methods which we already use. It should certainly find a place in the laboratory of anyone interested in *Xenopus* biology.

Matthew J. Guille

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This is a comprehensive, and most timely, collective volume, the conception for which originated with Nathan O. Kaplan, based on the recognition of the importance of data analysis in enzymology. The reasons and requirements for its preparation are explicitly and lucidly illustrated in the Preface by the Editors, whose stated primary objective was to inform researchers about modern data analysis techniques developed concomitantly with computer hardware, now readily accessible to virtually every researcher through personal computers, frequently readily linked to a mainframe. This is further illustrated by citing the well-known Scatchard plot for analysis of equilibrium binding data, developed before the advent of digital computers, which now make feasible the rapid application of the non-linear least-squares methods required

The thirty chapters in this book include several which describe the theoretical background of basic methods, such as non-linear least-squares and maximum likelihood. Others are devoted to specific practical applications, e.g. Fourier Resolution Enhancement of Infrared Spectral Data, Compartmental Analysis of Enzyme-catalyzed Reactions, Analysis of Site-specific Interaction Parameters in Protein–DNA Complexes, Algorithms for Biological Sequence Comparisons. Five chapters describe the analysis of fluorescence emission data, including fluorescence decay and fluorescence quenching, now widely employed in studies on ligand/receptor interactions.

The final three chapters, although somewhat out of context with the general tenor of this volume, are nonetheless of considerable interest. Chapter 28, entitled Programs for Symbolic Mathematics in Biochemistry, is in essence an introduction to symbolic computing (computer arithmetic) in contrast to numerical computing (computer arithmetic). Chapter 29, on Artificial Neural Networks, is a short very readable account of this fascinating field; more extensive descriptions have recently appeared, e.g. Neural Networks: An Introduction, by B. Muller and J. Reinhardt (Springer-Verlag, Berlin, 1991). The final chapter, entitled Fractal Applications in Biology: Scaling Time in Biochemical Networks, is an all-too-brief description of some of the terms and concepts of dynamical systems theory, including chaotic dynamics and fractals, as well as several possible applications, such as chaos in an enzymatic reaction.

Chapters 6, 19 and 23, dealing with analysis of ligand binding data, might profitably have included at least some references to the thermodynamic cycle-perturbation approach, which permits determination of free energy differences, e.g. between different ligands interacting with the same site(s).

The Editors' Preface, and several of the individual chapters, emphasize the fact that computer programs are not oracles, are frequently based on assumptions about the nature of the experimental data which may not necessarily be valid in all instances, and describe appropriate precautions to be observed in their use. The volume as a whole is quite up-to-date, with extensive coverage of the 1991 literature, and is recommended to all those engaged in data analysis.

David Shugar

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**Serotonin: Molecular Biology, Receptors and Functional Effects; edited by J.R. Fozard and P.R. Saxena, Birkhäuser Verlag; Basel, 1991; xii + 505 pages; SFr 278.00, DM 328.00. ISBN 3-7643-2607-7.**

Books which review rapidly developing scientific areas are always particularly welcome both for those directly involved in the research area and those on the periphery wishing to keep abreast of the latest research findings. The 5-HT (serotonin) area is one such field, which has grown immensely in the late eighties and early nineties with tremendous advances in the classification of 5-HT receptor subtypes (both in pharmacology and molecular biology) and in new potential therapeutic uses of 5-HT agonists and antagonists. This book on 5-HT is a collection of papers emanating from the second satellite meeting on serotonin in July 1990. The editors have included contributions from invited review lecturers, platform speakers and selected poster presentations in an attempt to review the field and cover the latest developments. The mix is rather disappointing, however, for a number of reasons.