

Preface

For the Second Edition

Until some 20 years back, there was no need to write a book on yeast molecular and cellular biology: the field was covered by “standard monographs” such as Broach, J.N., Pringle, J.R., and Jones, E.W. (eds) (1991) *The Molecular and Cellular Biology of the Yeast Saccharomyces*, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY., and Guthrie, C. and Fink, G. (eds) (1991) *Guide to Yeast Genetics and Molecular Biology*, Academic Press, San Diego, CA. Unfortunately, these editions were not updated, so that any novel information after the Yeast Genome Sequencing Project had succeeded in 1996 was scarcely available in a comprehensive form.

When I discussed this drawback with my colleagues during the first years of the “postgenome” era, it was André Goffeau who suggested to me that we should at minimum publish a paper documenting the outstanding contributions that had involved *Saccharomyces cerevisiae* as a model system for eukaryotic molecular and cell biology for over half a century. Finally, however, my engagement in this subject ended in preparing a small volume describing all those achievements.

I had started working with yeast in 1962, so that I still retain reminiscences of things happening in the past 50 years. Over the years, I had kept a collection of papers documenting the achievements in various fields of yeast research. I also gained a lot of information from the weekly seminars that were arranged in the departments where I worked, and from lectures and courses that I had a chance to present. For teaching purposes, I kept a huge collection of tables and figures that I personally had designed. I gratefully remember the many fruitful discussions with my colleagues from all over the world – at congresses or privately – that helped broaden my background.

Unfortunately, the brochure, entitled “Contribution of Yeast to Molecular Biology: A Historical Review,” did not raise the interest of a publisher, by using the argument “. . . history does not sell . . .” Nonetheless, they became interested in the subject itself after I had converted it into a “modern” textbook (which still might retain notes on historical background), because such an item was absolutely missing on the market. Thus, the first edition of *Yeast: Molecular and Cell Biology* appeared in November 2009.

The necessity to update and publicize information on yeast was recently raised in an article (“Yeast: an

experimental organism for 21st century biology”) by our American colleagues (Botstein and Fink, 2011). In the November 2011 issue of *Genetics*, the Genetics Society of America launched its *YeastBook* series – a comprehensive compendium of reviews that presents the current state of knowledge of the molecular biology, cellular biology, and genetics of *S. cerevisiae*.

This second edition of *Yeast: Molecular and Cell Biology* was started more than a year ago, and is aimed at presenting all aspects of modern yeast molecular and cellular biology, starting from the “early” discoveries and trying to cover the most recent developments in all relevant topics. The reader will find included chapters that reach out to yeast species other than *S. cerevisiae*, which have turned out (i) as interesting objects for large-scale genome comparisons, (ii) as ideal organisms to follow genomic evolution, and (iii) as appropriate “cell factories” in biotechnology. I think this will fulfill all of the requirements of a textbook for students and researchers interested in yeast biology.

I have tried to document the developments by including more than 3000 references. Whenever possible, these references are selected such that the reader can follow achievements made over the past decades to the present (in addition, a number of individual chapters include a list of references for recommended “Further reading”). Undoubtedly, this collection will not completely mirror the engagement of the numerous yeast laboratories. Wherever possible, I have cited original papers, but in many cases I have had to rely on review articles contributed during these years by competent researchers. Therefore, I apologize to all colleagues who might be disappointed that their original work has not been quoted adequately.

Foremost, I again wish to thank André Goffeau and Jean-Luc Souciet, who supported me in preparing this book. I am indebted to Danilo Porro and Paola Branduardi (University of Milan Bicocca), Claude Gaillardin (INRA, Thiverval-Grignon), and Bernard Dujon (Institut Pasteur and Institut Pasteur and University P. & M. Curie, Paris) for their excellent contributions of Chapters 14, 15 and 16, respectively. Not to forget the nice contacts with so many colleagues I found during the Yeast Genome Sequencing Project and the Génolevures Project; I am grateful for their suggestions and encouragement.

With great pleasure, I wish to acknowledge the care of the team of Wiley-Blackwell publishers at Weinheim (Germany) in editing and manufacturing this book: Dr Gregor Cicchetti (Senior Commissioning Editor, Life Sciences), who kindly invited me to consider a second edition with a considerable extension of the contents, and Dr Andreas Sendtko (Senior Project Editor) and his colleagues who took over production. Many thanks for their excellent and accurate handling of my manuscript and the pictures, so that I had little trouble with corrections.

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