
Book Reviews

The Power of Bacterial Genetics: A Literature-Based Course. By JONATHAN BECKWITH and THOMAS J. SILHAVY. Cold Spring Harbor Press 1992. 828 pages. Price: Cloth \$85 (ISBN 0 87969 411 4). Paper \$59 (ISBN 0 87969 379 7).

This book evolved from courses given by the authors at Harvard and Princeton, designed to teach students of microbial genetics and molecular biology to appreciate the history of prokaryote genetics, to read the scientific literature critically, to think logically about experimental designs and to realize the contemporary importance of prokaryote research. It contains 13 sessions, each devoted to a single theme and consisting of reprints of 5–8 classical papers, a concise authors' commentary on the meaning and importance of these papers and a series of boldly displayed questions to provoke classroom discussions or further study.

These sessions deal in succession with (1) Conditional Lethal Mutations, (2) Mutation I: The Nature of Mutations, (3) Mutation II: Nonsense Mutations, (4) Mutation III: Origin of Mutations and their Correction, (5) Suppressors, (6) Regulation I (the operon and negative control), (7) Regulation II (in Bacteriophage Lambda, and in the *gal*, *araBAD*, *trp* and *his* operons), (8) Site-Specific Recombination, (9) Transposition, (10) Atomic Genetics, (11) Protein Targeting, (12) Regulation at the Membrane, and finally (12) Genetics and Social Issues.

The course is intended to be neither a lecture nor a student seminar series. The students should read and think about all the papers, and each should come to the class prepared to give a five minute summary of the important points in any paper in the session. The course instructor can use these summaries to initiate discussion, or can call on students at random to answer specific questions, describe particular experiments, comment critically, etc. The course is designed for advanced undergraduate or graduate students familiar with the principles of bacterial genetics. They might meet for 3 hours once a week and should each produce a five-to-eight page research project of his/her own, for discussion towards the end of the course.

The course contains 85 reprinted papers covering about 800 large-format pages, often in rather small print, and also lists a number of important papers which ought to be read. The book is, therefore, a most valuable compendium of the development of a branch

of molecular genetics of great importance and interest, which still has current relevance: it will also make a very hard period of study if the course structure is adhered to and will also be hard going for the tutor. The course is, perhaps inevitably, angled a little towards work of the authors' colleagues and friends, with a tendency to quote American work. There are also important topics in early bacterial genetics that carry lessons, of which I found no mention, such as elucidation of the mechanisms of gene transfer by mating, by temperate phage and by DNA uptake, and the history of R factors, whose medical importance can hardly be overestimated.

But these are minor quibbles, and the book provides an extremely valuable, indeed unique, insight into one of the most productive and exciting periods in the history of genetics. I found it absorbing and shall continue to get pleasure and benefit from its further study. Close study of the many classical papers reprinted and an attempt to answer the questions posed by the authors will certainly stretch the mind of any student who has sufficient background knowledge to understand the complex technology applied in many of these papers.

The only major question is whether present-day students of molecular biology, who will be mostly very eager to get busy on eukaryotic problems, can be persuaded to give proper attention to such a difficult and largely historical subject.

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The 17th International Congress of Genetics, held at the Birmingham International Congress Centre in August, was poorly attended in spite of presenting an excellent programme of lectures and workshops covering a very wide field, and the Proceedings have only been published as a volume of Abstracts, some of which are missing, very short and/or contain no references.