BOOK REVIEWS

MECHANISMS OF DNA REPLICATION AND RECOMBINATION. Edited by Nicholas R. Cozzarelli. Published by Alan R. Liss, 150 Fifth Avenue, New York, NY 10011. Pp. xxvi + 876. 1983.

This book continues the series based on the UCLA Symposia in Molecular and Cellular Biology, and contains contributions from the symposium of the same title held in Keystone in April, 1983. This particular volume contains over fifty contributions, occupying almost nine-hundred pages and, by and large, the editors are to be congratulated on putting together a useful collection of papers. Very few of the contributions are less than interesting, and many of them are excellent. They are divided into six more or less equal sections including DNA structure, topoisomerases and helicases; bacteriophage DNA replication; replication of (the) *E. coli* chromosome and plasmids; eukaryotic DNA replication; site specific recombination; and general recombination. The book is headed by a keynote address from Arthur Kornberg which contains some interesting perspectives on DNA replication, and some rather pithy comments on the relative worth of cloners and enzymologists. The contributions in each section are a mixture of straight research reports and, much more useful, more broadly written articles which attempt to review the current state of the art and suggest ways forward. It is rare to find a book in which so many different but closely related topics are reviewed in this way, and, being familiar with progress in the prokaryotic field, I found many of the contributions in the eukaryotic section particularly useful in updating my knowledge of higher organisms. It is fascinating to see the viral model systems beginning to do for eukaryotic DNA replication what the bacteriophage systems have done for our understanding of prokaryotic replication. Within the prokaryotic field attention now seems to have moved somewhat, away from the processes of chain elongation *per se* to the mechanisms and control of initiation. The interest in initiation is also seen in the bacteriophage and eukaryotic sections, with the role of terminal proteins in initiation being prominent in both sections. The section on site specific recombination considers the systems in lambda, P1, Tn 3, and yeast 2 micron plasmid, while the various doings of *rec A* protein are catalogued in the general recombination section, along with a consideration of the *Ustilago rec 1* protein, plasmid recombination systems, and the role of Chi sites.

There are several contributions in this last section which are misplaced. The article on mating type switching in yeast should surely have been in the site specific section, while the article on initiation of lambda replication should be in the bacteriophage section. The final article, on sequence divergence in satellite DNA, also seems to have little to do with general recombination. These quibbles however do not detract from the usefulness of the book, and are minor in comparison to its main drawback—its price. Quite how a price tag of over £100 can be justified for a book of conference contributions is not clear, especially when some of the papers (from the

general recombination section in particular) have already appeared in very similar form in well known journals. The book will be very useful in the preparation of 3rd year undergraduate lectures for next year, but at the current asking price I cannot see it finding its way onto many bookshelves. The only solution seems to be to persuade your library to add it to their collection.

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GENE THERAPY—FACT AND FICTION. Edited by Theodore Friedmann. Cold Spring Harbor Laboratory, 1984. 131 pp, Glossary. Price: Paperback £5.95 (\$4.95).

This slim book is a record of a discussion meeting held in the Banbury Center at Cold Spring Harbor in 1982. In a departure from the usual form of conference proceedings, it contains no technical papers. Because of the widespread public interest in this field, the editor has attempted to produce a summary of the meeting in a form which can be read by a layman. Overall, the book is well written and mercifully free from the psychobabble which has begun to permeate much popular scientific writing of late. The participants were invited from the fields of molecular biology and clinical medicine, with a majority from North America. The aim of the organisers was to concentrate on the scientific issues and not to concern the meeting with the moral and ethical problems of this field, but almost inevitably in a meeting designed to allow the participants to let their hair down and have free-ranging discussions, the more philosophical aspects of this area of research eventually surfaced. By the end of the meeting some of the participants were voicing doubts about the wisdom of even trying to hold a meeting without considering the moral and ethical problems.

The contents fall neatly into three sections. The first sets the scene for the meeting and gives a short account of the Central Dogma to "provide the general reader with enough technical background and information" to understand what follows. I have misgivings about whether this will be of any use to lay readers unless they are already familiar with the concepts and merely need their memories refreshing. The total absence of any diagrams make it unlikely that anyone unfamiliar with basic molecular biology will be able to follow this exposition.

The middle part of the report contains edited highlights of the opening and closing sessions. Anticipation of this section had not filled me with enthusiasm but by the time I had finished reading it, I felt that it should have been longer. Even in the starkness of the printed word, the atmosphere of the meeting comes across clearly. Here is a discussion of the state of play and prospects for molecular manipulations in medicine by those most closely involved in the developments, stripped of the cloak of public relations posturing and the necessity for grant application hype. The discussions are refreshingly pessimistic about the prospects. Just by chance this book arrived on my desk in the same week that *Newsweek* published a special report "Medicine: A Brave New World" (March 5th, 1984). The contrast between what was being said at this meeting and what was being presented by the medical molecular biology publicity machine is very enlightening.