

REVIEWS

THE HISTORY AND SOCIAL INFLUENCE OF THE POTATO. Redcliffe N. Salaman. C.U.P., 1949. Reprinted 1970. Pp. 685. £8.

It is a pleasure to see that R. N. Salaman's classic work on the *History and Social Influence of the Potato* has stood the test of time and has been reprinted after a period of twenty-one years.

Of all the sections, those dealing with the economic and social influence of the potato in Ireland and Scotland make perhaps the most fascinating reading and are of the greatest value to the economic historian. Indeed, the historical and economic development of Ireland in the nineteenth century cannot be studied adequately without recourse to Salaman's work. The later chapters, tracing the cultivation and consumption of the potato in Britain as a whole and following its influence on agriculture and rural economy, are equally important.

The earlier chapters in this book, which concern themselves with the archaeological record of the potato in South America, have not stood the test of time so well as the later ones, since archaeological research has produced so many new facts during the last twenty years that Salaman's chapters in this field are now somewhat out of date. In any case, chapters 1 to 5 were always the weakest in the book, for Salaman had never visited South America and some of his anthropological hypotheses have by many been considered as somewhat fanciful. In this early section of the book a number of textual errors still remain, which have unfortunately not been corrected by the publishers in this reprinting.

These are minor points, however. On re-reading the book one experiences the same pleasure as one did twenty years ago from its brilliant literary style, of which Salaman was a great master. This book stands as the high achievement of an erudite and humane person of wide knowledge and even wider understanding. Cambridge University Press are to be congratulated on their decision to reprint it.

J. G. HAWKES

Department of Botany, University of Birmingham

MOLECULAR GENETICS: AN INTRODUCTORY NARRATIVE. Gunther S. Stent. W. H. Freeman, 1971. Pp. 650. £5.10.

In his Preface, Gunther Stent explains that this book, which grew out of a lecture course which he had been giving for a number of years in Berkeley, was almost stopped at its inception by the appearance of James Watson's *Molecular Biology of the Gene*. It is true that Watson's book, the second edition of which more or less coincides with Stent's first, covers very much the same ground and, in its own style, would be very hard to better. Yet I am sure that Dr Stent was right to conclude that there would be room for his own rather different treatment of molecular biology. The two books make an interesting comparison. Watson's tends to present rather more detailed information in a more concise manner—he states in plain terms what is known and then goes on to explain *how* it is known, the viewpoint being that

of our present understanding. Stent, in more leisurely and expansive style, gives more attention to the development of the theories which he discusses, with some reference to the personalities involved. It is not that he is attempting to write a history—he specifically disclaims such a purpose and, if considered as a history, his account could be criticised for its gaps and short-cuts. His aim, no less than Watson's, is to teach present-day molecular biology, but he feels that students, or some of them, may find the narrative easier to assimilate than the straight didactic statement. He may well be right; at all events the teacher of genetics will be glad of both books even though he will have a problem in deciding which one to recommend to his class.

As one would expect from someone who has been close to most of the major advances in molecular genetics throughout its development, the treatment is authoritative. The coverage is not comprehensive in that, as the author readily admits, it concentrates almost entirely on enteric bacteria and bacterial viruses, to the virtual exclusion of, for example, fungi. Difficult as it is for a *Neurospora* geneticist to admit, the narrative loses little in continuity from this selectivity. *Neurospora* played a vital role in supplying the first auxotrophic mutants, but after such mutants had been obtained in bacteria, and used to develop the *E. coli* mating system, bacterial genetics, in partnership with phage genetics, made most of the running. There are, however, a few places where more reference to fungi might have helped. In any even semi-historical account of the fine structure of the gene there should have been room for mention of Pontecorvo, Roper and Pritchard's work on *Aspergillus nidulans* which was contemporary with, or even predated, Benzer's attack on the T4 *rII* system. Coming to more recent times, the important results of Westergaard and Rossen on the timing of DNA synthesis in relation to meiosis in *Neottiella rutilans* might, had they been considered, have dissuaded the author from his view (pp. 611-612) that crossing-over between chromosomes probably occurs at the time of DNA synthesis in premeiotic interphase. And the beautiful results of Sherman's group on the genetics of cytochrome *c* in yeast would have provided some of the information on initiation of translation in eukaryotes which is said to be lacking (p. 545).

The book, one gathers, was many years in the writing, but there are few places where the text seems dated. One does, however, feel the need in some chapters for more recent references. The bibliography for Chapter 16 on DNA Transcription, for instance, lists no research papers or review articles later than 1964, while after Chapter 17, on RNA translation, one is offered research papers dating from between 1856 and 1958 and a review from 1961. This lack of chapter-and-verse in the bibliographies is, however, partly compensated for by the many excellent figures summarising, in adequate detail, the key experiments from seminal papers, references to which are given in the captions.

By way of variety the figures also include a number of photographs of leading pioneers. These exhibit a variety of styles of scientific portraiture, ranging from the dark-suited formality of O. T. Avery at one extreme (p. 178) to Drs Luria and Delbrück at the other (p. 148). The two inventors of the fluctuation test have the demeanour of men who have just set up some outrageous practical joke which they are expecting to take effect at any moment. It would have been still more interesting to have had these

photographs dated; some seem more or less contemporary with the major achievements of their subjects while others are probably much earlier or later.

From this general praise of the illustrations the plate showing mutant *Drosophila* eye colours must be exempted. We have seen this plate in at least three places—the original in Sturtevant and Beadle (1939), and reproductions first in Srb, Owen and Edgar (1965) and now in the book under review. At each step the colours have departed further from the remarkably accurate original, and any student who misguidedly attempted to use Stent's admittedly colourful and decorative version as a practical guide would be hopelessly misled.

The distinctive and appealing flavour of this book comes as much from its manner as its matter. In his preface, the author thanks Mrs Margery Hoogs "for her efforts to rectify (my) prose style". He must be joking. There has never been much wrong with Dr Stent's prose style and any attempts by others to eliminate its more idiosyncratic features would, one feels, be doomed to failure. He writes as one who actively enjoys both his gift for explaining difficult things and his assured use of the English language. The result is a text of unusual clarity, spiced from time to time with the unusual word or phrase, the far-fetched but usually appropriate metaphor or the deliberate cliché used in unfamiliar context for comic effect. Possibly these verbal conceits may grate on some, as perhaps they did on Mrs Hoogs. Personally I found them enlivening; if I have a criticism it is that, having hit upon a good word, like "pristine", "verity" or "affined", Dr Stent is sometimes a bit inclined to over-use it.

One finishes the book glad that, Watson notwithstanding, Dr Stent persevered with his enterprise. It is rare for a book which conveys so much information to make such pleasurable reading. It is too much to hope that many students will be able to afford to buy it, but University libraries must do their best to make it available to them.

J. R. S. FINCHAM

Department of Genetics, University of Leeds

STRUCTURES GÉNÉTIQUES DES POPULATIONS. Albert Jacquard. Masson et Cie, Paris. Pp. 399. Fr. 80.

Mathematical Genetics is a young subject and there is a paucity of good books. Indeed, half a shelf covers both good and bad. Jacquard's book is a welcome addition, particularly as it looks at the subject from a viewpoint unfamiliar to many English-speaking scientists. It is divided into three parts, the first of which covers the biological essentials (Chapter 1) and necessary probability theory (Chapter 2). The author introduces a novel notation for half a symmetric matrix plus the diagonal, which he calls a *trimat*. Only time will tell whether the consequent economy of thought and symbols will outweigh the advantages of the familiar algebra of symmetric matrices, but the treatment of "structures génétiques" from the outset in terms of probabilities and conditional probabilities will surely become standard. The influence of Malécot is strong here; Cotterman's equivalent earlier formulation is not mentioned.

Part II is on "le Modèle Panmictique", treated deterministically and without selection. Linkage estimation is discussed briefly, but with the