

niques for physical studies of plasmid molecules, are necessarily but unfortunately missing.

The discussion of plasmid-host chromosome interactions in chapter 3 is less satisfactory, because of its heavy dependence upon analogies with  $\lambda$  phage—which I consider to obscure, rather than clarify, the properties of transmissible plasmids. In other places, the text could have been lengthened with advantage; for example, the accounts of plasmid-determined characters in chapter 7 are really too short to be useful, and surprisingly little attention is paid throughout to plasmids other than those found in the Enterobacteriaceae.

Despite omissions and occasional obscurities, the book provides an introduction to the biological properties of bacterial plasmids, and an extensive bibliography, that medical and science students will find of value. The requirements of the research worker, however, will be better satisfied by the recent spate of review articles.

N. S. WILLETT

## Hydra

*Biology of Hydra.* Edited by Allison L. Burnett. Pp. xv+466. (Academic Press: New York and London, May 1973.) \$29.

THE title of this book gives the impression that its scope is wider than in fact is the case. Of the sixteen chapters, twelve are concerned with developmental topics, including discussions of the developmental significance of interstitial cells, organismic polarity, histological and ultrastructural studies of the development of nerve cells and of cyto-differentiation during regeneration, cell proliferation in relation to form and the structure and developmental significance of the mesogloea. The remaining chapters are devoted to behaviour, feeding and digestion, ecology and neuro-secretory cells. The emphasis on developmental studies is a fair reflection of the distribution of research activity in recent years.

Although it is nowhere made explicit, all the contributors (with one possible exception) are present or former students and colleagues of the editor; this gives the book a somewhat parochial air. The contributions are rather a mixed bag. Among the more useful I would single out Rushforth's introductory survey of behavioural studies which is clearly written and informative; and Diehl's discussion of interstitial cells, which I hope will at last put an end to the arguments about the morphogenetic role of these cells (they have none) which have plagued the literature for so many years.

Some of the other contributions on developmental topics are of more doubt-

ful value and I would single out two for specific comment. The chapter on organismic polarity by Lesh-Laurie seems to me quite inadequate. This is an area in which significant progress has been made in recent years and general models have been developed which are applicable not only to *Hydra* but also to many other developing systems; in this respect there has been a genuine, if incomplete, synthesis. No one reading this review would gain any hint of these advances, since the relevant literature is not cited. Admittedly, the most comprehensive discussions have appeared relatively recently, but Wolpert's theoretical discussion which appeared in 1969 is not quoted and no reference is made to the important experimental work of Rose on *Tubularia* which is now 16 years old.

Whereas I find the discussion of polarity merely inadequate, I must say that I regard the chapter devoted to cell proliferation in relation to morphogenesis as positively confusing and misleading. The points at issue are whether patterns of cell movement in the growing organism are to be explained in terms of patterns of cell production or in terms of patterns of cell loss and whether morphogenesis is to be explained in terms of localised cell proliferation or in other terms. The axial pattern of cell proliferation, so stressed in this chapter, is an important piece of evidence in this argument but by no means as decisive as the editor and author imply. The whole subject is treated in such a way that the uninitiated might get the impression that the ideas of other workers in the field—particularly those of Campbell, whose evidence and arguments are inadequately discussed—have been refuted. This is certainly not the case; Campbell's work remains as compelling as ever and the new data which Dr Corff presents at such length do not seem to me to constitute evidence which can be used one way or the other in this argument.

I do not think this book can be regarded as anything more than a convenient, if extremely expensive, summary of the work of the Burnett "school". The greater part of it is concerned with developmental problems but it is both too parochial and too defective in key areas to constitute a definitive survey of our present knowledge in this field. In terms of theoretical content the book is very weak; no formal models are discussed, though there are several in existence, and such theory as there is consists for the most part of vague speculation. In too many chapters the authors are content to present the reader with a mass of experiments and observations and leave him to draw his own conclusions as to its possible meaning.

GERALD WEBSTER

## Jobs for Graduates

*Patterns of Change in Graduate Employment.* Edited by H. Greenaway and G. Williams. Pp. 171. (Society for Research into Higher Education: London, September 1973.) £2.70.

"DESPITE the growing concern about the employment of graduates", say the editors of this collection of essays by different authors, "there has so far been little attempt to place the problem in perspective". Certainly much of the public discussion has been concentrated upon short-term variations in the pattern of supply and demand, particularly for newly-qualifying scientists and engineers. The difficulties of those in mid-career have received scant notice, and one of the best parts of the book is the chapter on this subject by W. G. H. Robins, who shows how relatively large this problem may be.

The nation is, however, committed to the continued expansion of higher education with over 20% of eighteen-year-olds, and over 25% of eighteen-year-old boys, entering higher education by 1981; these students will then be asking for and expecting jobs appropriate to their level of education. It is idle to pretend and dangerous to assume that this can happen without stresses affecting both the newly qualified and employers and their existing staffs, or that economic growth can, by itself, create sufficient jobs at the right level. A problem exists of a continuing nature proportional in size to the rate of change of the supply and demand situation, or more accurately to the value of the second differential.

In discussions of supply and demand, it should not be forgotten that here the supply is of human beings, with hopes, prejudices and fears, and Tom Snow writes perceptively about students and their problems in choosing their first occupations. There are other good things in the book, such as E. G. Whybrew's brief chapter and Gareth Williams's illuminating analysis of the economics of the graduate labour market, but some of the most disappointing parts are those for which the editors have been personally responsible. Their joint final essay "Is There a Crisis?" is unexceptionable but their early individual chapters suffer from obscurity, inaccuracy and lack of perspective. The roots of today's manpower situation lie deeper in the past than the Robbins Report of 1963; arguably for scientists and technologists they derive from the connection between fundamental and applied science and national security, and the line from 1940 to 1970 through the Manhattan project to the Apollo project is continuous. There has also been the belief that more research meant more economic growth, a belief which Robbins institutionalised