of culture collections, J. R. Porter the historical and international aspects leading to the formation of the World Federation of Culture Collections with the sponsorship of international organisations and UN agencies, and R. R. Colwell deals with the use of electronic data-processing in biological collections, and of computers in microbiology in general. The remaining essays are heterogeneous, and illustrate the importance of the ATCC as a major culture collection and the wide range of organisms that it maintains: bacteria, viruses, fungi, algae, protozoa (discussed speculatively by S. H. Hutner), and tissue cell lines (on which L. Hayflick writes imaginatively of the future).

H. J. Carlson and A. L. Demain stress the value of the culture collections for the conservation of the genetic resources of micro-organisms, the latter particularly from industrial aspects such as mutant preservation and genetic engineering. E. P. Odum discusses genetic diversity in ecosystems. R. G. E. Murray writes on recent advances in comparative cytology, and R. Dubos on bacterial polymorphism. J. Liston presents an account of the developments in taxonomic approach in the successive editions of Bergey's Manual, the latest edition (8th) of which gives the culture collection designations of type strains.

This collection of essays, which look both at the past and into the future, can be recommended for borrowing from libraries as an intellectual aperitif, and as a demonstration of the vital role that culture collections play in microbiology.

STEPHEN LAPAGE

Modern views on microbial pathogenicity

Bacterial conjugation

Yield studies in micro-organisms

It is common enough to want something for nothing, and these days we are thankful to get anything at all for less than £2.00. According to these criteria, therefore, the reader picks up these three booklets with some interest and even a shade of disbelief. All three are part of a series called "Patterns in progress". Each deals with a relatively limited facet of modern microbiology, and the three reviewed here are the first of thirteen that are either already published or in the course of preparation. In practice, they seem broadly to fall into two categories: booklets of about 40 pages, as is the case with the first two reviewed here, and more solid contributions of approximately twice this length, as is the case with the third.

The three booklets take rather different approaches to their subjects. Professor Smith's book concerns the broadest topic of the three and is the most discursive. He analyses the determinants of microbial pathogenicity inasmuch as anything is known about them. The most valuable aspect of the booklet is that—perhaps unintentionally—it reveals rather clearly that quantitative studies on the interaction of living systems—such as is exemplified by human diseases of microbial origin—is still all but impossible and that the experimental approach to the subject is fraught with difficulty. Nevertheless, this is a succinct and informative account of a developing field of microbiology and clearly the field covered is highly relevant for practising medical microbiologists.

Finnegan deals briefly with a very much more limited topic—bacterial conjugation. This is a strictly factual account of an interesting microbiological phenomenon from the viewpoint of a molecular biologist, and all is correct if significantly out of date by now. The account seems rather eclectic, because it makes no attempt to assess the importance