

speciation in the Hawaiian Islands (Templeton), and speciation of hummingbird flower mites, elsewhere described as stowaways on the hummingbird express (Colwell).

The two last sections on Population Genetics include papers on Mitochondrial DNA, Habitat preference in *Drosophila*, Suez canal migration – which way, what kind of species and why?, Evolutionary genetics of HLA, Gaussian versus non-Gaussian analyses of polygenic mutation-selection balance (an illuminating discussion by Michael Turelli), The Gaussian approximation for random genetic drift, W. D. Hamilton on Instability and cycling of two competing hosts with two parasites (I found this as obscure as much modern music), some more mathematics of altruistic behaviour, a mathematical model for the evolution of learning, and genetic models of endosperm evolution in higher plants.

I have failed to mention several possibly important articles, but potential readers with an interest in the more mathematical aspects of evolutionary studies and speculation may be encouraged by my listing of titles to examine the book or buy it in paperback. I cannot say that it should be purchased by all Genetics Department libraries, but at least the (comparatively) cheap paperback edition makes it available for those with a strong interest in many of the topics listed. No doubt articles in this compendium will soon get into the references in future papers, but most of what is included can be extracted from other publications, with a little patience.

ERIC REEVE  
Department of Genetics  
University of Edinburgh

*Practical Developments in Inherited Metabolic Disease: DNA Analysis, Phenylketonuria and Screening for Congenital Adrenal Hypoplasia.* Edited by G. M. ADDISON, R. A. HARKNESS, D. M. ISHERWOOD and R. J. POLLITT. MTP Press Limited. 1986. 335 pages. £50.00. ISBN 0 85200 690 X.

This oddly titled book is, as the contents page makes clear, the proceedings of the 23rd Annual Symposium of the Society for the Study of Inborn Errors of Metabolism (SSIEM), held in September 1985. The assembled papers have already been published as two supplements to the *Journal of Inherited Metabolic Disease*. Membership of SSIEM includes subscription to the Journal and all its supplements and costs £25.00 per year. The above book costs £50.00. For those who are interested, there are obvious financial advantages in applying for membership of SSIEM.

Until quite recently, meetings of this Society have tended to concentrate on the detailed enzymology of those genetic disorders whose rarity allows the investigators to outnumber the patients. No aspect of seramidase deficiency, Zellweger's syndrome or short-chain fatty-acid oxidation defect was considered

unworthy of minute examination and loving reporting. The standard of work has been high and the Journal is superbly edited and produced. However, much as one admires the dedication of those who engage in this type of very necessary investigation, their reports can be awfully dull reading for the interested onlooker.

The proceedings in this book represent the Society's attempts to come to terms with the 'new genetics'. A symposium on recombinant DNA includes some useful contributions from Sue Malcolm and Marcus Pembrey on principles of gene probing, chapters on phenylketonuria and  $\alpha_1$ -antitrypsin deficiency by Savio Woo, ornithine-transcarbamylase deficiency by Lee Rosenberg, and an interesting short account of the role of homologous recombination in gene insertion by Oliver Smithies. However, these chapters are already substantially out of date and the interested reader will have to check *Nature* or *Proceedings of the National Academy of Sciences* to see where the subject is now. Apart from the recombinant DNA section, which takes up the first third of the book, the remaining papers are detailed descriptions of the enzymology of the rare and the vanishing rare.

I welcome the attempt by SSIEM to put a tentative foot into the cold water of molecular biology. It must seem an alien world to many of its members. But one thing is clear: if the Society continues with its interest in DNA, it will have to stop publishing the proceedings of its annual meetings in hardback form. There was little enough justification for this in the past, given the availability of the same material in supplements of the *Journal of Inherited Metabolic Disease*. With the accelerating pace of progress in molecular biology, hardback proceedings are hopelessly dated by the time they appear. I could not, therefore, recommend this book to either individual readers or science libraries.

D. J. H. BROCK  
Human Genetics  
Western General Hospital  
Edinburgh EH4 2XU

*Fourteenth Symposium on Nucleic Acids Chemistry.* Held in Tokushima, Japan. 30 October to 1 November 1986. Nucleic Acids Symposium Series No. 17, IRL Press Ltd. Oxford. 272 pages. £27, \$49. ISBN 1 85221 003 6.

This is a special symposium edition of the journal *Nucleic Acids Research*. It is principally of interest to research workers in the areas of biological and pharmaceutical chemistry. The volume contains a great deal of innovative science but is generally short of experimental detail. I feel sure that any important work appearing here will have already surfaced or will shortly be seen in other scientific journals. A quick scan reveals some interesting statistics. Of the 235 contributors, 230 are Japanese, 4 American and 1 Belgian. This is not, then, an international symposium. On the positive side the 60 scientific papers on nucleic

acids chemistry would normally have been spread over 10 volumes of the journal *Nucleic Acids Research*, so we are provided with a distillation of major topics and literature references. The book is a celebration of the quantity and quality of Japanese academic research in this important field (more than 90% of the contributions are from academic institutions). My overall impression is one of admiration and respect and, speaking as a British scientist, not a little envy.

Papers in this volume span a very wide range of interests, from the chemical synthesis of potential antiviral agents to advances in the preparation of DNA oligonucleotides. There are also papers on molecular cloning and suggested models for prebiotic synthesis of nucleic acids. Physical techniques such as NMR, Raman Spectroscopy, Circular Dichroism and Differential Scanning Calorimetry also feature. It must be emphasized that this is a collected volume of research publications a number of which would not be acceptable in the more standard scientific journals, as is inevitably the case for symposium reports.

The book provides a window into what is happening in nucleic acids research in Japan and as a researcher in the field I consider the book to be well worth reading. The price is too high, particularly considering the quality of the reproduction, the paperback cover and the small format. Despite these drawbacks I would have to recommend its purchase by any library already taking nucleic acids research.

TOM BROWN

*Department of Chemistry  
University of Edinburgh*

*In vitro Fertilisation – Past, Present and Future.* Edited by S. FISHEL and E. M. SYMMONDS. IRL Press Ltd. 1986. 276 pages. £17.50 US \$32.00 (soft), £27.50 US \$50.00 (hard). ISBN 0 947946 50 0 (soft), 0 947946 95 0 (hard).

Arthur Koestler has made the point in his 'Act of Creation', that very rarely if ever do scientific discoveries and innovations arise *de novo*. They almost always have their origins in earlier work. This is also true of *in vitro* fertilization (IVF) as Fishel clearly shows in his fascinating historical introduction to this book which represents the edited views of an international group of medical scientists, philosophers, theologians, ethicists and lawyers. It was only in 1978 that the work of Edwards and Steptoe led to the birth of the first baby conceived *in vitro*, yet within seven years no less than 117 IVF clinics had been established throughout the world. This is understandable since it provided a valuable method for overcoming the infertility experienced by many couples.

IVF is here considered from various points of view: the evaluation of infertile couples, techniques of oocyte recovery using laparoscopy and more recently

ultrasound, embryo replacement, and the results of IVF. The laboratory techniques involved are discussed in detail including the growth of the early conceptus *in vitro*. The importance of careful and sensitive counselling of couples undergoing IVF is emphasized. The current status of the Warnock report and various ethical and legal matters are given consideration. Finally, Leo Abse discusses the political issues raised by IVF and similar works.

Though IVF is now a well established and widely used technique, it becomes clear in reading this text that many fundamental problems still need to be resolved. There is ignorance regarding the optimal conditions for normal growth of the early conceptus *in vitro*. The best stage of development at which to replace a human embryo is unknown. For various reasons it has proved difficult to evaluate the number and quality of pregnancies following IVF. And though it seems likely that the incidence of malformed children born after IVF is no greater than in the general population, this has yet to be clearly established. There is therefore much scope for research in this field.

Apart from the treatment of infertility, IVF offers a new approach to studying the causes of some forms of infertility and, rather paradoxically, might lead to the development of novel methods of contraception. Furthermore, the study of cultured embryos could not only throw more light on early human development but might also lead to a better understanding of how certain congenital malformations arise. But such studies, and some would add IVF itself, raise many ethical problems. For example, is it right to discard or experiment on fertilized eggs that exceed those required for replacement? Might such studies one day be unacceptably extended beyond the 'pre-embryo' stage (at about 16 days after fertilization), and how can such work be effectively regulated? Leo Abse argues from his many years as an experienced parliamentarian, that decisions should not be made hastily. That we need first to be educated and well informed about the facts and then given time to explore our fears and anxieties. Only in this way can we avoid making precipitate and ill-conceived judgements. This well-edited and well-written book will help to provide the facts about this important subject.

ALAN EMERY

*Medical School  
University of Edinburgh*

*Cold Spring Harbor Symposia on Quantitative Biology. Volume L. Molecular Biology of Development.* Cold Spring Harbor Laboratory. 1986. 920 pages. Cloth \$140. ISBN 0 87969 050 X. Paper \$70. ISBN 0 87969 051 8.

The devotion of the 50th CSH Symposium to Developmental Biology is very appropriate for a field