researchers due to many small differences in technique. The value of the method, however, is demonstrated unequivocally in reports from individual laboratories where it is shown to be capable of identifying the polymorphisms and splitting the Class II antigens into subsets. Useful lessons for the future were learned from the experience and are spelled out in the joint report by M. J. Crumpton *et al.*

Work on cellular typing techniques also demonstrated their value. It is clear that the splits of Class II (and Class I) antigens defined by T cells are real and have a molecular basis, indicated here by individual reports comparing HLA Class II antigens seen with two-dimensional gel analyses and DNA restriction fragment length polymorphisms (RFLP). Although no joint analysis was made of Southern blots, individual reports explored the potential of the technique. At the time of the meeting (early summer 1984) the results were still relatively preliminary, but it is evident that a new dimension has been added to research in this area. These data are eminently suitable for the type of collaborative experiment and analysis at which the workshops excel, and no doubt will feature prominently in the future.

One might ask where this mass of information is leading. Successful organ transplantation was the original aim, and it may become feasible to match genes (and flanking DNA) between donors and recipients. However the extreme polymorphism makes this intention unrealistic in most cases and one will then have to compromise with the best fit. Serological matching of HLA antigens is thus likely to remain the most valuable method of tissue typing. However, matching for transplantation, which is reviewed in detail in this volume, is not the end of HLA. The disease associations remain unexplained and this enigma clearly drives much of the research effort. The search is now on for disease susceptibility genes in linkage disequilibrium with the serologically defined HLA antigens and for disease-specific variants of known HLA antigens. This detailed genetic information should give insight into many, if not all, of the disease associations. Again, this type of study will form a major part of the next HLA workshop. This is now at the planning stage, and it is clear that there will be a greater emphasis on biochemical and DNA technology.

This book is an essential reference volume for all those interested in any aspect of HLA. It is full of detail but also included are helpful summaries in the form of figures, tables and reviews. The editors deserve our thanks not only for organizing this huge experimental undertaking but also for producing such a useful report. □

*Andrew McMichael is a Professor in the Nuffield Department of Clinical Medicine, John Radcliffe Hospital, Headington, Oxford OX3 9DU, UK.*

# Towards a new phase in the cell cycle

*Paul Nurse*

**The Biology of Cell Reproduction.** By Renato Baserga. *Harvard University Press: 1985. Pp.251. $23.50, £19.95.*

LONG recognized as one of the most important areas of cell biology, research into the mitotic cell cycle is entering an exciting new phase. The techniques of molecular biology and genetics are now being used to supplement more classical approaches and are providing real insight into how the cell cycle may be controlled. Renato Baserga's timely book is concerned with this question and with explaining the fundamentals of the cell cycle to molecular biologists, and recent molecular advances to cell biologists.

Baserga has succeeded well in meeting these objectives. The book provides a succinct general introduction to animal cell reproduction and to the possible controlling roles of growth factors, oncogenes and cell cycle genes. It is particularly good when dealing with the effects of viruses on the cell cycle and with the relationship of the cell cycle to cell population and tissue growth, strengths which probably reflect the author's background as a pathologist. The level of treatment of the subject matter is generally very even; little previous knowledge is assumed and the reader is taken to the point where the more specialist literature can be tackled. This, together with the informal, anecdotal style of writing, make the book easy to read and suitable for advanced students.

The author has decided to restrict the material almost entirely to mammalian cells "to keep the book within reasonable limits". Although this limitation does indeed bring a sharp focus to the book, it does have its drawbacks. Studies of the cell cycle and its control are well advanced in organisms such as the yeasts, *Physarum* and *Xenopus*, and discussion of these could have provided a useful framework for understanding the undoubtedly more complex situation in mammalian cells. I also found the account of the more theoretical and conceptual aspects of the problem to be rather limited. Ideas such as "commitment" or the notion of rate-limiting steps in cell cycle control are not fully considered, nor are the various possibilities for temporal order such as transition probability models, limit cycle oscillators or dependency relations.

Further, surprisingly little attention is given to the two major processes of the cell cycle, S-phase and mitosis. Quite often books on the cell cycle give short shrift to these events, usually referring the reader to a more general textbook. This is an unfortunate practice; when trying to understand overall cell cycle control, it is important to know the nature of the processes which are controlled as well as being conceptually clear as to what the controls are. Baserga does not quite get to grips with these matters, but his book should still be read for its sensible account of the biology of animal cell reproduction and for its up-to-date summary of molecular changes during the cell cycle. □

*Paul Nurse is at the Imperial Cancer Research Fund Laboratories, PO Box 123, Lincoln's Inn Fields, London WC2A 3PX, UK.*

# Going to work on . . . oogenesis

*Tim Hunt*

**Oogenesis. Developmental Biology: A Comprehensive Synthesis, Vol. 1.** Edited by Leon W. Browder. *Plenum: 1985. Pp.632. $75, £71.25.*

WE ALL started life as eggs, yet the number of books about oogenesis — how the egg comes to be — is very small. To my knowledge, *Oogenesis* is only the third monograph to be devoted exclusively to the subject since 1961.

This is surprising. A tremendous amount of work is done on eggs. However, many more people follow the egg as it develops after fertilization than study its development before fertilization. Not only is the former generally more exciting but oogenesis is really quite difficult to study. Still, the events that occur in early embryogenesis demand a knowledge of what went before. In many cases, the embryonic axes and parts of the embryo-to-be are already laid down by the time of fertilization. Moreover, eggs viewed simply as cells are extremely interesting. Recombination and meiosis occur in them, and they also exhibit a tantalizing paradox — they are highly specialized for rapid cell division after fertilization, but they cannot (and must not) divide before the sperm arrives. How the solution to this paradox is achieved, and what stops premature cleavage is a very topical concern. Even the simple matter of keeping the embryo alive after the egg has been laid presents physiological problems which in different animals are solved in different and unusual ways.

Thus a new book devoted to the subject is to be welcomed, and warmly so, for it is a well-produced and useful volume. Its 13 chapters cover a wide and fairly representative set of topics, from yolk to shell at the beginning and from genes to proteins at the end. For the most part the organization is phylogenetic: Chapters 1,3 and 5 mainly deal with vertebrates, and 2, 8 and 13 with insects; frogs are the subject of 6, 9 and 10; and sea urchins are discussed in