Full steam ahead

Michael Cannon

The Ribosome: Structure, Function and Evolution. Edited by W. E. Hill, A. Dahlberg, R. A. Garrett, P. B. Moore, D. Schlessinger and J. R. Warner. *American Society for Microbiology: 1990. Pp. 678. $99.*

THE science of the ribosome — a remarkable organelle — covers a period spanning approximately 35 years. *The Ribosome: Structure, Function and Evolution* originates mainly from the presentations of a meeting held in 1989 in the scenic East Glacier Park, Montana. The location of the meeting and the end result are each splendid in their own right.

Peter Moore provides a perceptive introduction to the volume and succeeds admirably in his brief to capture the spirit of the meeting and to summarize the state of the field. After its golden age in the 1960s, ribosome research entered a somewhat less exciting and productive phase and fell out of favour with many in the scientific community and, possibly, with many in the various grant-awarding bodies. In more recent years the pendulum has swung back and interest in the ribosome has revived. This change has resulted, at least in part, from the discovery of RNA enzymes and the development of cloning and sequencing techniques for studying ribosomal RNA. Unfortunately, however, these trends have persuaded some ribosomologists that RNA is all important. Ribosomal proteins hardly have a look in. Crucial though RNA undoubtedly is in determining ribosomal functions, I was pleased to note that Peter Moore makes a plea for a more balanced outlook. It is to be hoped that more enzymologists join our ranks to unravel additional complexities associated with protein synthesis and its control.

Following Moore's introduction, two distinguished ribosomologists — Masayasu Nomura and Alexander Spirin — provide the reader with their personal views of the history of the study of ribosomes. Nomura treats us to an exciting resumé which brings out his own tremendous enthusiasm for the subject. His fine essay, which describes the key discoveries made over the past three-plus decades, will be of particular interest and value to those who are relatively new to the field. It also provides a walk down Memory Lane for those of us who are, to use Moore's phrase, 'veterans of earlier conventions of the Amalgamated Ribosome Workers'. Spirin covers progress in ribosome preparation, and considers the development of cell-free protein-synthesizing systems. These approaches have been absolutely crucial in aiding our understanding of structure–function relationships within ribosomes.

It would be unfair to single out the excellence or otherwise of the remaining 55 articles — a number that equates with the number of detectable *Escherichia coli* ribosomal proteins. But it was good to see that most of the authors have made a conscientious effort to provide a review of their own research area in addition to highlighting their own experimental achievements. Undoubtedly this will make it easier for those outside the ribosome field to grasp more quickly the overall relevance of the topics in question. I liked too the short introductions to the 10 sections into which the volume is arranged — a very small touch that gives the book more presentational style.

Meetings such as the one from which this volume derives cannot, of course, materialize without a great deal of input from many people. Furthermore, it is always difficult to decide who should and who should not be asked to contribute a chapter to publications covering scientific conventions. Few could reasonably quibble with the present line up. It is good to see that after wallowing in the doldrums for a little time the ribosome has emerged unscathed and under full steam again. □

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New in paperback

■ From IRL at Oxford University Press come two new books in the Practical Approach Series. *Peptide Hormone Secretion* edited by J. C. Hutton and K. Siddle describes methods for the study of the structure and function of polypeptide hormones. *Postimplantation Mammalian Embryos* edited by A. J. Copp and D. L. Cockcroft provides a detailed introduction to techniques which overcome the problems of embryo inaccessibility, and is aimed at researchers, technicians and students. Both books are priced at £25 (hbk, £35).

■ Out now is the new edition of the *Concise Science Dictionary* from Oxford University Press, which should be of use to all scientists. Price is £7.95.

■ *The Orchids: Natural History and Classification* by Robert L. Dressler provides a modern synthesis on the natural history of orchids. Published by Harvard University Press, price $19.25, £12.75.

■ Pergamon Press has recently published the second volume of *Progress in Heterocyclic Chemistry* edited by H. Suschitzky and E. F. V. Scriven highlighting recent advances in the field. Price is £21, $35 (also available in hardback; price £42, $70). □

Reading pictures

Richard Gregory

Visual Allusions: Pictures of Perception. By Nicholas Wade. *Erlbaum: 1990. Pp.288. £24.95, $42.95.*

VISUAL Allusions is an extended essay by a psychologist-artist. It is not exactly on illusions; but rather, as its title cleverly conveys, on graphical and literary meanings — allusions — of pictures. It is densely illustrated mainly with the author's own photographically produced pictures which have an original quality of deliberate confusion, allusion — and yes — illusion. As Wade says, the text is written round the pictures, and the pictures are to some extent self-explanatory. Several have quite dramatic evocative three-dimensional 'allusions'.

The artist most cogently discussed is Magritte, with new variations on his famous painting of a tobacco pipe. Such questions are raised as: What essential features does the image share with the object? What are the characteristics that correspond to our recognizing certain shapes as representing a pipe? The author concludes that: "Clearly, our recognition of pictorial images can survive all manner of graphical insults!" It is indeed interesting to discover just what can, and what cannot, be changed for object or picture recognition to survive. No doubt this has implications to medical and scientific art, and interpretations of all manner of pictures and displays, from astronomy to the atom, with or without computer graphics. Verbal descriptions can have profound effects on seeing pictures having scientific content.

Nicholas Wade says (page 145): "Whenever we look at pictorial images we are alluding to features they do not contain." And, "The pictorial art of the 20th century can be thought of as reflecting a concern with graphical image processing." It is not clear, he suggests, which aspects, or features or transformations should be adopted by artists (or scientists?) for their ends. This must mean that the new techniques of image processing offer more possibilities, and so more freedom of expression for artists; which surely is pure gain, though they have to accept that art history is no longer such a valid guide. The snag comes when traditional conventions are not adequate for interpretation. Then discipline and caution, even with special learning required for the viewer, may be needed to 'read' pictures — of art or science.

This brings out the creative role of the observer. It raises questions of how perceptions are related to conceptions. There may not be specific answers here; but the questions are important, and they are quite powerfully evoked by pictures and words. □

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