

## Science and society

*Perspectives in the Sociology of Science.*  
Edited by Stuart S. Blume. Pp. 237.  
(Wiley: London, Sydney and New York,  
1977.) £10.95; \$21.

THE common or garden reader of *Nature* is unlikely to give this volume a second glance. All those long words, theoretical analyses, and citations of this or that authority would quickly warn him that he had blundered into somebody else's academic specialty, as remote as non-linear optics or reptilian haematology. Like an aborigine faced with an X-ray tomographic section he might take a long time to recognise it as an image of his very own self.

The earnest student of the sociology of science will also be disappointed if he comes upon this volume as he browses along the shelf in search of general guidance. To a zeroth approximation, it is little more than a collection of primary papers on the 'Science and Society' theme such as might be found in a journal such as *Minerva*, without coherence one with another. Dr Blume, in his introductory survey of "Sociology of Sciences and Sociologies of Science", really says, somewhat elaborately, that there is no overarching theory, and pluralism is the order of the day. This is wise; but it doesn't explain why these particular papers should be written specially for publication in a single volume between expensive hard covers. There is a suggestion that the aim was to emphasise 'external' factors in scientific activity—national culture, economic and industrial needs, historical trends, and so on, but only a pedantic ignoramus could assert the contrary.

Considered separately, however, these papers offer food for thought—even for the journeyman scientist or lay citizen. R. D. Whitley, for example, in "The Sociology of Scientific Work and the History of Scientific Developments", strongly emphasises the connection between such mundane "administrative" issues as the departmental structure of universities and supposedly intellectual factors within the cognitive core of an academic discipline. His categories of "restricted" disciplines (for example, physics) and "un-restricted" disciplines (for example, biology) like Kuhn's "normal" and "revolutionary" phases of science, look too schematic, and would probably not stand up to detailed investigation, but he is right to emphasise that differences in the degree of paradigm ordering in various sciences are reflected in the relations between individual research workers, students and teachers, professors and their colleagues, in those sciences.

Peter Weingart, under the vague title "Science Policy and the Development of Science", deals specifically with the history of environmental research and action

in the Federal German Republic. This account of the interaction of technical, administrative and popular developments admirably illustrates the dynamism of science in an advanced industrial society, although I get the impression that environmental concern in Germany in the late 1960s was, indeed, driven 'externally' by louder voices echoing from the United States.

Strangely enough, sociologists of science have not shown much interest in science as a personal vocation. Elzbieta Neyman, writing on "Scientific Career, Scientific Generation, Scientific Labour Market", sketches out a research program for a "social psychology of science" that would remedy this deficiency. I am sceptical of the ultimate outcome of her very elaborate and detailed survey scheme, but she touches with great human insight and psychological sensitivity on many delicate questions, such as changes of role and status with age, which cannot be "answered" but which deserve further, deeper study.

The paper by Louis Orzack on the competition between pharmacists and other scientific professions for licensing as "quality controllers" of drugs in the EEC is only of interest as an item of historical evidence, and the account of "Nationalism and Nationalization of the Scientific Field in Quebec" is too brutally cut to fit marxian interpretations.

And I wish that Radhika Ramasubban had integrated the general theory of her beautifully incisive essay "Towards a Relevant Sociology of Science for India" with her accurate perception of the depressing realities.

By this time, I had become rather bored with all those not quite compatible re-statements of the current state of the sociology of science. But being a conscientious reviewer, I persevered to the end—and found a real gem. Stephen Hill's summary of the true history and actualities of a major applied scientific research institution in a developing country should be read by every scientist and would-be science policy-maker concerned with the Third World. The cognitive dissonances, the sociopolitical mismatches, that turn the infinitely productive research method of the European industrial culture into an item of useless consumption, akin to a cargo cult, in countries such as Thailand, are bringing to naught one of the great aspirations of our times. As in all human activities, greed, pride and folly pay their parts: but the blame rests on us all, scientists and sociologists alike, for not trying to understand, and state clearly the nature of the peculiar enterprise in which we so naively engage.

John Ziman

*John Ziman is Professor of Physics at the University of Bristol, UK.*

## Fascination for social insects

*Production Ecology of Ants and Termites.* (International Biological Programme, Vol. 13.) Edited by M. V. Brian. Pp. 409. (Cambridge University Press: New York, Melbourne, Cambridge and London, 1977.) £19.50.

THIS volume in the International Biological Programme (IBP) Series results from the working group on social insects which was set up within the IBP section concerned with the productivity of terrestrial communities. As Professor Cragg points out in his preface, the theme had to be narrowed to ants and termites, and as Dr Brian the editor says somewhat plaintively "... the writers are intensely occupied with their investigations and could only be persuaded, with great difficulty, to write anything at all between spells in the field." In truth, the volume is more a collection of essays on ant and termite productivity and its measurement, than the results of coordinated international research.

The book is arranged in ten chapters, with fifteen contributors from eight countries, and this inevitably

results in some variability in standard and presentation. The chapters, all in English, cover the collection of population data, with an introduction to production, followed by detailed reviews of food and feeding habits in termites and ants. A lengthy and painstaking summary of respiration and energy flow studies is followed by chapters on the nutrient dynamics of ants and termites, and their roles in ecosystems.

Everyone has their pet fascination when it comes to social insects which other authors always seem to underplay, and I would have liked more attention given to the dominant role of ants in the ecology of tropical trees, where an 'ant mosaic' is formed, each dominant species uniquely affecting the fauna of its tree by encouraging certain species (especially homoptera) and preying others. However, this book is a most valuable compilation of work to date (there are over 1,100 references), a guide to research techniques, and a source of challenging ideas for the future.

J. M. Cherrett

*J. M. Cherrett is Senior Lecturer in Applied Zoology at University College of North Wales, Bangor, UK.*