

Invitations to enquiry

Mary Waring

Science, Curriculum, and Liberal Education: Selected Essays. By J. J. Schwab. Edited by I. Westbury and N. J. Wilkof. Pp. 394. (University of Chicago Press: Chicago and London, 1978.) \$24; £16.80.

FOR some twenty-five of his fifty years at the University of Chicago, Joseph Schwab participated in an experimental undergraduate programme in general education, and it was this experience that gave impulse and direction to all his writing. This book contains a selection of twelve of the fifty or so essays that make up the bulk of his published work, an Introduction written by the Editors, and a bibliography.

The Introduction outlines the context in which Schwab's ideas developed. It stresses the continual interplay between, on the one hand, reflection upon the immediate practical concerns of his day-to-day teaching and, on the other, extensive explorations in psychology, psychiatry, literature, philosophy, science and the philosophy of science, an interplay that was to become the hallmark of his approach to education. His mastery and use of many perspectives and this interrelating of ideas and action gave Schwab both an intellectual framework and an integral and distinctive approach to problems. Both were greatly enriched by continuing dialogue with colleagues like Louis Thurstone, Irving Lorge, Ralph Tyler, Robert M. Hutchins and, above all, Richard McKeon, who introduced Schwab to hermeneutically inspired interpretative schemata and, as a former student and colleague of John Dewey, gave him direct access to a philosophy that was to be a major influence on his thought.

Although many of the essays are well known and highly regarded, the fact that most have been written for special occasions and purposes and have hitherto been published individually in a variety of journals, has meant that they have proved difficult for many readers who have come to them in isolation or at relatively long intervals of time. Collecting them into one volume and providing the orientation afforded by context creates a whole which is much more than just the sum of its parts; it reveals so vividly the comprehensiveness and coherence of Schwab's understanding and it encourages and facilitates greater fluidity

of thought on the part of the reader. Grouped under three headings ("On Liberal Education and Science", "On the Foundations of the Curriculum" and "On Curriculum Building"), the essays are concerned primarily with a carefully reasoned enquiry into the practical problems of giving new meaning and vitality to the conception of a liberal and liberalising education and, within it, to the teaching of science. Schwab leads the reader through the complex web of considerations which enmeshes each of the issues explored—enquiry and interpretation, personhood and experience, scientific enquiry and the nature of science and liberal education, educational testing, teacher education and curriculum development and research—providing a series of deep insights and provoking reflection upon the articulation of ideas and action in the search for means and ends. There is no attempt, however, to argue for

outdated, elitist conceptions of liberal education: the concern is with the search for essentially practical ways of helping the young to become 'actively intelligent' people who enjoy and thus continue to seek out knowledge and understanding, and who possess the critical and organising powers that make possible informed choice and action.

This is a challenging and important book, offering none of the slogans and easy solutions of those whom Schwab describes as "honing a problem down until it looks simple" or basing their ideas on "unexamined notions of reality". Emphasising, always, that matters of the curriculum are matters for doubt and critical enquiry, Schwab is concerned to "move men to action", rather than to prove or to prescribe.

Mary Waring is Lecturer in Education at the Centre for Science Education, Chelsea College, University of London, UK.

A forbidden transition

Fred Dainton

Higher Education Developments: The Technological Universities, 1956-1976. By P. Venables. Pp. 407. (Faber and Faber: London, 1978.) £25.

THIS book has a simple structure. In the introductory chapter the reader is taken at a brisk trot through the history of post-school technical education by way of the Percy Report; the establishment in 1956 of the Colleges of Advanced Technology (CATs), and of the National Council for Technological Awards; the Robbins Committee's recommendations of 1963, most of which were accepted almost immediately by the Government and which led to the CATs being transformed into technological universities with a consequential transition from ownership and government by Local Authorities (or Government in the case of Loughborough); to self-government and financial support from the University Grants Committee (UGC). The next eight chapters are a description of all that happened in and to these institutions in the decade 1966-1976. This section is abundantly provided with graphs and tables and is a gold-mine of factual information which is made very easy to quarry by the use of a very well constructed index. The tenth chapter is entitled "The Polytechnics" and is in fact a fascinating comparison of these institutions with the technological universities, in which the author seems to

invite—almost quizzically—the reader to look at the facts assembled in four tables and draw his own conclusions. In the last two chapters the author looks at higher education in a broader perspective, as it is and as it is likely to be, and he also lifts the veil ever so discreetly on his own credo and ideals. The book ends with four appendices; a glossary of acronyms, potted biographies of the eleven institutional actors; a few more statistics which I feel would have been better placed in the text; and the questionnaires which evoked the responses on which much of the information purveyed by the book is based. The wealth of data assembled in the book contrasts somewhat strangely with a curious omission. Nowhere did I find a really clear definition of technology and how it should be distinguished from natural science and engineering—if it is.

The non-British reader may be surprised that a whole book should be devoted to the detailed examination of such a small subject—namely, the emergence, infancy and early childhood of eleven institutions containing only about one-tenth of the total university population and therefore only about half that proportion of the total in higher education. The significance of the subject does, however, go far beyond what this mere numerical comparison might suggest, for the process by which the technological universities were created can never be repeated for as long as the policy of the "binary system" holds sway. That transformation would now be a "forbidden transition". The book is therefore important as a case study of special value to two groups of people. On the one hand it will be important to those who will determine future tertiary education policy in Britain and on the other hand to the historians