Book Reviews

Chinese Achievements

30 Years' Review of China's Science and Technology (1949–1979). Translated from the Chinese. World Scientific Publishing, Singapore, 1982 (U.S. distributor, Heyden, Philadelphia). x, 314 pp., illus. $69.

This is a useful book with a somewhat mysterious genealogy. It was published in Singapore, which is a most unusual birthplace for such a volume. It is a translation from Chinese, but of what? From the foreword by the Chinese editor one can surmise it is a translation of *The Nature Journal Yearbook 1979*—"the first yearbook of natural science in our country." In the short preface by the editors of the English edition, it states that this volume is based on "articles provided by the Shanghai Scientific Press." This need not be a contradiction, but one usually expects a translation to include a more precise identification of the original source. It is also curious that, although it bears a 1981 copyright, those of us who closely follow all the publications on Chinese science had not heard of this book until it appeared in the editorial offices of *Science* in 1983. Of course, none of the foregoing has any direct bearing on the contents of this expensive, illustrated, near "coffee table" edition.

As the English title indicates, this is indeed a review of China's science and technology (primarily science) by some of China's most prestigious scientists—most of them "of the older generation" and foreign-trained. Listing chapters makes for a dull review, but since each chapter stands by itself it seems only fair to let the reader know whether his or her particular discipline is covered. The first chapter is a general review of policies, developments, and achievements in Chinese science. The last chapter is by Zhou Peiyuan, China's elder statesman of science, in which he commemorates the birth of Albert Einstein by telling "Einstein's life story, his scientific contributions, his philosophical thinking and his noble qualities." The chapters in between cover the following fields: nuclear science, acoustics, semiconductors, laser research, biochemistry and molecular biology, paleoanthropology, paleontology, mathematics, polymerization of silicic acid in aqueous solution, theoretical organic chemistry, astronomy, weather prediction, earthquake science, marine research, psychology, and traditional Chinese medicine. As one might expect, the sciences and fields that were chosen are those in which new research has been done and success stories can be told.

Presumably each contributor was asked to review his field, but chapters vary in coverage and length, reflecting not only the science but the personality of the author as well. The chapters on mathematics and paleontology, for example, give a broad view of developments in the past 30 years, whereas the two chapters dealing with chemistry are highly technical, consisting almost entirely of equations and structural formulas that would be of interest only to the specialist. Contrarily, many readers will surely be absorbed by the historical information provided by some contributors, as in the fascinating sections on ancient acoustics, history of seismological research, and some of the fundamental theories in Chinese traditional medicine.

Over the past 30 years, China's science policy has been in an almost perpetual state of flux, and many changes have occurred even since these chapters were written in 1979. Because the authors stick almost exclusively to the science itself, most of the research in the fields that are covered is not affected by the current drive to make science serve economic development. As a matter of fact, with the exception of the general overview and perhaps the chapter on psychology, there is a complete void of polemic in the text, which is indicative of the new mood in the sciences.

The review chapters cover half the book; the second half consists of a variety of useful reference materials. There is a 78-page section entitled A Chronicle of Events in Science and Technology, which highlights all the important events and developments over the course of 30 years. Clearly showing the effects of the Cultural Revolution, the list contains only five entries for the 1967–70 period: four nuclear tests and the launching of China's first artificial earth satellite. Next is a listing of 260 science journals divided by subject and giving information on the publishing institution, periodicity, former titles (if any), and other, often hard-to-come-by, information.

There are three additional sections in the reference part of the book, namely, lists of 1955 and 1957 members of the Chinese Academy of Science; biographical sketches of 86 outstanding scientists who have died since 1949; and another list of scientists who won awards in the natural sciences in 1956. There is no clear answer to the obvious questions: why not the current membership of the Academy, the most recent list of recipients of scientific awards, and biographies of prominent living scientists? It seems, however, that this regression captures the character and spirit of both the volume and the Chinese culture. In the final analysis the book is a story of the survivability of scientists, who managed to live through the abuses of their persons and their science during the Cultural Revolution and return to serious research. In the process of reminding the world of their survival and productivity, the contributors thoughtfully pay tribute to their friends and colleagues who did not live long enough to enjoy the current renaissance in Chinese science.

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Economic Prehistory

Early European Agriculture. Its Foundation and Development. M. R. JARMAN, G. N. BAILEY, and H. N. JARMAN, Eds. Cambridge University Press, New York, 1982. x, 284 pp., illus. $42.50.

Early European Agriculture is the third and final volume produced during the past decade by members and associates of the British Academy Major Research Project in the Early History of Agriculture. The earlier volumes, *Papers in Economic Prehistory* (1972) and *Paleoeconomy* (1975), were edited by the late E. S. Higgs, to whom the present work is dedicated. In those works, as well as in more than 50 papers published in various archeological journals, the members of the project espoused an explicitly quantitative approach to the reconstruction of past economic systems. Relying heavily on the analysis of land-use possibilities, environmental reconstruction, faunal and floral assemblage