Book Reviews

An Encyclopedia in Chinese

Zhong Guo Da Bai Ke Quen Shu (Greater Encyclopedia of China). Vol. 1, Tian Wen Xue (Astronomy). Greater Encyclopedia of China Publishing House, Beijing, 1980. xxviii, 652 pp., illus., + plates. $30.

Although comprehensive reference books on specific subjects have been written throughout Chinese history, the *Greater Encyclopedia of China* is the first work of its kind to be undertaken in Chinese. If the editorial board can accomplish its task, some 80 volumes on subjects ranging from the social, natural, and medical sciences to the humanities will be published over the next decade. The inauguration of the encyclopedia could not have come at a better time, for China is now emerging from the trauma of its ten-year Cultural Revolution. Affected by the closure of the university and the censorship of any literature that was not politically doctrinaire, an entire generation of Chinese youth never had a chance to receive a university education. Today we are witnessing their losses in the distinctive bimodal age distribution of Chinese scholars visiting the West. The lack of competent scholars and professionals has also caused China to slow down its post–Cultural-Revolution modernization program. Of course a problem of this magnitude cannot be quickly solved, for it takes time to rebuild a nation's think tank. However, books such as the *Greater Encyclopedia of China* can only help to ease the current crisis. Coupled with the popular televised open-university program, the encyclopedia can provide an opportunity for members of the lost generation to acquire comprehensive university-level knowledge through self-education. In this respect the book is likely to have a social impact beyond the usual canonical usefulness of an encyclopedia.

The first volume of the *Greater Encyclopedia of China* is on astronomy. The principal theme and basic structure are very similar to those of most encyclopedias published outside China, though the content is slightly more comprehensive. In this volume there are more than 1000 entries, on all branches of astronomy. The section on the history of astronomy in China is most informative and well written. Although no present-day astronomer needs to be reminded of the priceless heritage of astronomy in China, only a small handful of scholars actually have sufficient knowledge of classical Chinese as well as astronomy to be able to utilize the rich bank of data in historic Chinese annals. The authors of this volume present a brief summary of their years of painstaking work on the transliteration of these historical astronomical records. The reader can find the fascinating history not only of calender making, eclipse records, and variable stars but also of the development of different cosmological principles. Particularly valuable to historians of Chinese astronomy is the translation of the names of over 500 stars as they are referred to in the classical Chinese annals.

In the section on instrumentation, most of the recent advances as well as classical telescope designs are clearly described, though without much detail. Considerable emphasis is put on solar and space astronomy. Recent discoveries concerning the solar neutrino problem, solar oscillations, and planetary rings are included in the volume. Physical processes relevant to stellar structure and stellar astronomy are well reviewed, with an excellent collection of articles on variable stars. The coverage of galactic and extragalactic astronomy can be supplemented with data from more recent investigations of galaxy formation, dynamical and chemical evolution of galaxies, and galaxy clusters. The section on cosmology includes a fairly thorough introduction to the most modern cosmological models. The scientific discussion of cosmological models itself marks the return of academic freedom in China, for during the Cultural Revolution research in cosmology was attacked and replaced by political jargon.

Overall, the academic standard of this volume is very high. The nonmathematical format did not prevent the authors from discussing subtle underlying physical principles. To the best of my knowledge, most of the nearly 200 color photographs are published in a Chinese book for the first time. In time, the volume will be instrumental in the popularization of astronomy to a quarter of the world's population.

Had the volume been written in English, I could strongly recommend it to any astronomy or physics undergraduate. As it is, the detailed English translation of many technical terms and of each entry heading may be useful for those astronomers who wish to pursue academic exchange with their Chinese colleagues.

DOUGLAS LIN

Lick Observatory,
University of California,
Santa Cruz 95064

Institutions in France

The Organization of Science and Technology in France 1808–1914. Papers from a meeting, Lancaster, England, July 1977. ROBERT FOX and GEORGE WEISZ, Eds. Cambridge University Press, New York, and Editions de la Maison des Sciences de l'Homme, Paris, 1980. x, 356 pp. $37.50.

In this collection of papers the authors attempt to provide an analysis of the institutional structure of French science and technology from the establishment of the Napoleonic University in 1808 to the outbreak of the First World War. There is far greater concentration on the later part of the period, however.

The institutions stressed are ones that have tended to be neglected by historians of science, rather than elite Parisian establishments like the Ecole Polytechnique, the Ecole des Ponts et Chaussées, or the Ecole des Mines, which have received more attention. In their comprehensive paper on the institutional basis of French science, Fox and Weisz claim that the predominance of studies of Parisian institutions has obscured the importance of those in other areas and note that during the Second Empire specialized schools were springing up throughout France for instruction in the applied sciences. However, according to Karady, in his paper on educational qualifications and university careers, proximity to Paris remained for most of the 19th century an important factor for academics because of research facilities and the quality of the students. He claims that a professorship in a Paris lycée was more highly prized than the majority of faculty chairs.

The effects of politically oppressive regimes on research, budgets for science, and its professional organization are also assessed. Fox and Weisz provide an analysis of attitudes toward sci-