Book Reviews

Export Science

American Science and Modern China, 1876–1936. PETER BUCK. Cambridge University Press, New York, 1980. x, 284 pp. $24.95.

Despite great pioneering comparative works such as Max Weber's *The Religions of China*, Chinese studies in the West have tended to be a somewhat exotic field outside the mainstream of historical and social scientific inquiry. The reasons are understandable: the difficulty of the Chinese written language, profound cultural differences, the humanistic and often particularistic bent of most Westerners who have seriously studied China. But the results have often been unfortunate, not only retarding our understanding of China but depriving us of the valuable insights into our own society and culture that a broader comparative approach might bring.

Peter Buck makes an important advance toward this kind of approach by looking at a specific question in a specific time frame—the transfer to China of American ideas about the organization of scientific work and its role in society during the late 19th and early 20th century. He is not concerned with grand theoretical generalizations à la Max Weber or F. S. C. Northrup, nor is he primarily concerned with Chinese receptivity or nonreceptivity to modern Western ideas and values, one of the matters most thoroughly covered in existing Western studies of China. He is concerned with showing how, from the 19th-century medical missionaries to the philanthropic foundations and research-oriented universities of the 20th century, Americans tried to transplant the practice of science to a very different country and what the difficulties of that attempt reveal about both societies.

It is a story that has been told before, at least in parts, but never with such a rigorous analysis of the social and political ramifications of the practice of modern science. Buck very ably shows how the changing character of American efforts to bring science to China reflects important changes that were taking place in the organization of science and its application to society in the United States. For example, the earlier medical missionaries with their emphasis on clinical practice and voluntary organizations are a world removed from the Rockefeller Foundation's China Medical Board with its emphasis on scientific research and professional standards. Or, on the social thinking behind medical policies, Buck traces the influence of turn-of-the-century concerns about the political divisions of industrial society and science's role in ameliorating them on the formation of the Boxer indemnity fund, which financed the education of the first generations of modern Chinese scientists in the United States. He shows how these American-trained scientists tried to implant in China such American institutions as the association for the advancement of science, the research-oriented university, and the land grant college as purveyor of scientific advances to industry and agriculture. This involves discussion of several key American universities, most fully Cornell, where an unusually large number of leading Chinese scientists were trained.

The author intends his book primarily as a contribution to the study of science and society in America and is interested in the American activity in China "only secondarily because of its bearing on Chinese scientific development." By using the transfer of science to China as his prism it seems to this reviewer that he has been able to cast new light on science in both America and China. On the Chinese side, particularly, he grounds the beginning of modern Chinese science more firmly in its social and institutional framework than most earlier studies of Chinese assimilation of modern science have attempted to do. On the American side, the aspirations and problems of the missionaries, educators, scientists, and philanthropists involved in this enterprise allow us to see American science in a somewhat different light.

But if this book breaks new ground and deserves a pioneer's accolades, it also will provoke some disagreement. It may be laudable to try to give a quantitative underpinning to general impressions about the social background of science and scientists, but when data are so fragmentary one wonders about the results. For instance, how helpful are figures based on an unrandom sample of 27 out of 143 early members of the Science Society of China for whom there happened to be some biographical information? One may also object to Buck's very negative appraisal of American success in building a modern scientific establishment in China. It was not a "total failure," and many of the political and social constraints on faster and more relevant absorption of science were beyond the control of Americans, or any foreigners. The Rockefeller Foundation's decision to concentrate on Peking Union Medical College as an elite institution bringing the highest standards of American medicine to China left China's public health needs unmet, but it was not necessarily wrong, as the legacy of that institution in China's present scientific and medical elite demonstrates. And as for populist objections to elites, scientific or otherwise, that has largely faded in post-Mao China, where key educational and scientific institutions are very much back in favor.

There are many other places where scholars of America or China will find room to argue with Buck, and his own style is often argumentative in tone. The book is not an easy one to read, for the scope is broad, the organization complex, and the prose not always crystalline. But it is an important and innovative book that should be stimulating for anyone interested in the history of science in China or in America, or in comparative history in general.

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Prehispanic Structures

Inca Architecture. GRAZIANO GASPARINI and LUISE MARGOLIES. Translated from the Spanish edition (Caracas, Venezuela, 1977) by Patricia J. Lyon. Indiana University Press, Bloomington, 1980. xvi, 350 pp., illus. $32.50.

Since the 16th century, professionals and amateurs alike have been struck by the very high quality of Inca architecture and engineering. The old truism that you can't slip a knife blade between the courses of Inca masonry is indeed true for the finest Inca work. The conquering Spaniards compared it to the best in their homeland, and modern sensationalists have evoked lost chemical formulas to soften the stone and technologically advanced visitors from outer space to account for its high quality. Such explanations do an injustice to the Inca