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Physics in Perspective

Guest Editorial

Towards a Trans-Pacific History of Physics

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As Joseph Needham is well known for documenting, the ancient Chinese produced numerous scientific and technological advances. Modern Chinese science, however, did not spring from China's traditional culture but is a Western import. At the end of the Ming and the beginning of the Qing dynasties, Jesuit missionaries introduced certain Western scientific achievements into China, mainly in the service of their proselytizing. In order to attract converts, they used Western medical knowledge to cure some diseases that practitioners of traditional Chinese medicine had taken to be incurable. But these were minor developments. The comprehensive introduction of Western science to China did not take place until after the Opium War of 1840 and especially after the Sino-Japanese War of 1894.

This was a critical juncture for the Chinese nation. It was facing a life-or-death moment and its rulers decided that the most prudent course was for China to passively adopt Western scientific practices. This was a pragmatic move; science was seen as an indispensable tool for national survival and it was assumed that Western science could be entirely transplanted into China without also importing Western cultural values. The popular slogan was "Chinese learning should be followed as the essence; Western learning as the practical application." Only a very few intellectuals noted that a special cultural and social atmosphere would be required for the healthy growth of science. Those who had the privilege of studying in the West realized the immense differences between the two cultures. Nevertheless, with patriotic pride, they held a strong desire to use what they had learned in the West to rebuild their country. These individuals laid the foundation for the development of science in China.

Those Chinese scientists who trained in Western universities returned to China with a deeper commitment to Western scientific values. In this issue of *Physics in Perspective*, Danian Hu tells their stories. His paper traces the Chinese physicists who studied in the United States during the unfolding revolutions in relativity, quantum theory, and nuclear physics and helped build the infrastructure of modern Chinese physics after their return. The history of science in China has

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been built around comparative studies, especially given the number of Chinese scientists who spent many years in different cultural contexts. Hu builds, for example, on the work of C. N. Yang, the physics Nobel laureate in 1957, who devoted considerable enthusiasm and energy to researching the history of those Chinese physicists who studied in the US. He found that many Chinese scholars has done outstanding work during their time abroad. He thought he had the duty "to clarify the truth, to restore the historical true colors" of important papers by Chinese scientists. To this end, Yang wrote a number of articles evaluating the scientific contributions of those Chinese scholars. Because of his position and great influence, the contributions of Chinese scientists are recognized and valued by more and more people, and we can expect that Hu's insights will extend that awareness to many more.

Western journals have published little on the history of Chinese science, and indeed Hu's contribution to this issue is *Physics in Perspective*'s first article on the subject. Yet, just as exchange between China and the United States helped build an international physics community the in the twentieth century, we can hope that work such as Hu's, which connects communities in the history of science, can do the same for our own community in the twenty-first. To this end, I provide a list of journals in the history of science currently operating in China. At least six academic journals related to the history of science might be of interest to Western audiences.

1. *Studies in the History of Natural Sciences* (自然科学史研究), founded in 1982, is the only journal in China devoted to interdisciplinary and comprehensive studies in the history of science, technology, and medicine. It is a quarterly journal co-sponsored by the Institute for the History of Natural Science, the Chinese Academy of Science, and the Chinese Society for the History of Science and Technology. Its articles, discussions, professional news, and book reviews appear both in English and Chinese.

2. *The Chinese Journal for the History of Science And Technology* (中国科技史杂志), founded in 1980, was known as *China Historical Materials of Science and Technology* (中国科技史料) from 1980 to 2004 and features Deng Xiaoping's calligraphy of the journal's title. A quarterly, this foremost vehicle for the scholarship of professional historians of science in China is devoted to all aspects of history of science, technology, and medicine, and encourages studies from diverse perspectives. Although its primary concern is history of science in modern China, it is also concerned with sciences in pre-modern China and topics in world history of science that bear closely on the development of science in modern China. It features scholarly articles, sources, oral histories, forum, review essays, and book reviews. It also provides news and information of the profession.

3. *Science & Culture Review* (科学文化评论), founded in 2004, is a comprehensive academic journal that aims to promote the study of science and technology and social interaction between cultures, and strengthen dialogue among the sciences, humanities, and social sciences in order to promote coordinated development of human society from science and technology.

4. *The Journal of Dialectics of Nature* (自然辩证法通讯), founded in 1979, is devoted to interdisciplinary, comprehensive, multidimensional studies about nature, science, and technology. Over the years, a section devoted to the history of the history of science and technology has been an important forum for research on the history of science in China.

5. *Journal of Shanghai Jiaotong University* (Philosophy and Social Sciences version), 上海交通大学学报 (哲学社会科学版). The first department of the history of science in China was founded at Shanghai Jiaotong University in 1999. Soon after its establishment, this journal began publishing a special section on the history of science.

6. *Journal of Guangxi University for Nationalities* (Natural Sciences version), 广西民族大学学报 (自然科学版). Since 2004, this journal has published two sections devoted to studies of Chinese science: History of Science and Technology, and Scientific Culture. This has become an important journal for the study of history of science in China.

In recent years, many colleges and universities in China have introduced history of science as an elective or required course, and teaching and research in the history of science has rapidly increased. In addition, many journals published by Chinese universities have begun to include articles on the history of science. Science—and its history—is playing an important role in the current social transformation that is sweeping through China. This will no doubt provide both challenges and opportunities for historians of science in China. If the history of science is any guide, we can expect that rich intercultural exchange will be critical for meeting these challenges and taking advantage of these opportunities.

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