

Laurence Schneider, *Biology and Revolution in Twentieth-Century China*.
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The key to understanding science and society in modern China is, according to Laurence Schneider, the idea of control: science as a way to control nature, science as a subject of control itself for the purpose of nation-building, and, finally, scientists as a target of control by the successive regimes of the Chinese party-state. In this masterful and richly-documented study, Schneider, a distinguished historian of China and science in China, examines the special case of biology, especially genetics, to reach a number of illuminating insights on the interactions between science and its broader context in China in the twentieth century in general. It is a remarkable achievement in both the history of science and in Chinese history.

Modern genetics, as with most other disciplines of modern science, was introduced in China when a group of young, talented Chinese students received training in the field abroad, primarily in the US, and returned to China in the 1920s-1930s. Having studied often with the masters of modern genetics such as Thomas Morgan, these pioneers, most prominently Tan Jiazhen, helped build the first educational institutions in biology and carried out cutting-edge research in China. In a meticulous, archives-based examination of the thriving biological programs at three universities—National Central, Yanjing, and Nanjing—during the Republican era (1911-1949), Schneider not only introduced many of the leading Chinese geneticists in the twentieth century, but also sketched their broader scientific, institutional, and social-cultural context in this period. Geneticists had to balance between basic genetic research and agricultural applications, handle the tension between the scientific community and the Nationalist state, and balance between dependence on and independence from foreign, especially American, institutions and influence.

Many of the tensions latent in the Republican era were then dramatically and often tragically amplified under Mao Zedong, especially during the early years of the People's Republic when Lysenkoism, imported from the Soviet Union, devastated much of the Chinese genetic community. In many ways, the section on Chinese Lysenkoism forms the heart of the book. Based on interviews and other primary sources, Schneider charts the rise of Lysenkoism in China both as an outdated rival to Mendel-Morgan genetics and as a politically and ideologi-

cally driven model of party science. Its decline came as a result of the liberal interlude during the mid-1950s, culminating in the famous 1956 Qingdao conference on genetics that Schneider and other scholars have studied in detail previously.

Why did the Chinese Communists Party (CCP) first support and then abandon Lysenkoism? Imitation of the Soviets was not, Schneider argues, convincingly, the main reason for the Chinese party policy because the pattern of attacking and then rehabilitating science would repeat itself many times in the subsequent years, even after the bitter breakup with the Soviet Union in the early 1960s. Instead, Schneider points to Mao's antipathy toward scientists from the Republican period as motivating his recurrent attacks on them. Their elitism, apolitical stand, and foreign background made the scientists potentially subversive to Mao's utopian search for social equality and his obsession with sovereign control. Thus, as Schneider puts it, "if Soviet Lysenkoism had not existed, the CCP would have invented something like it on its own" (p. 177). In the end, it's not the science, but the "self-contained authority of a cosmopolitan science community [that] posed a threat to the authority of Mao's Communism" (p. 281). This conclusion parallels those from other studies that look at scientific communities as institutions of prototype civil society in various authoritarian regimes.

The book also contains a brief but useful section on the Deng Xiaoping period, 1976-2000, when the state control of science and scientists was finally relaxed. Yet, while the post-Mao reform certainly led to the marketization of Chinese science and less dependence on the state financially, one may argue that political reforms, which affected the control of scientists as much as other citizens, have not kept pace with those in the economic arena.

In sum, Laurence Schneider's *Biology and Revolution* serves as both an excellent introduction to the history of science in twentieth-century China and an in-depth historical study of Chinese genetics and society. It's clearly-written and well-organized, suitable for use in both undergraduate and graduate courses. I do have a few quibbles: I wish that the book had paid more attention to Chinese scientists' nationalism, which arguably shaped their interactions with both the Nationalist and the Communist party states as much as their pursuit of professional autonomy. I also wish that the book had engaged more fully with the recent literature in the history of science and technology and offered more comparisons with science in other national and political contexts. There are some errors in *pinyin* spellings, and it would have been helpful to provide the Chinese characters in the glossary of Chinese names. But these are minor complaints about a book that stands with James Reardon-Anderson's *The Study of Change* as one of the best studies in the history of science in modern China.