



UNIVERSITY OF CALIFORNIA PRESS
JOURNALS + DIGITAL PUBLISHING

Selected Bibliography

Author(s): Peter J. Westwick

Reviewed work(s):

Source: *Historical Studies in the Physical and Biological Sciences*, Vol. 27, No. 2 (1997), pp. 357-372

Published by: [University of California Press](#)

Stable URL: <http://www.jstor.org/stable/27757783>

Accessed: 25/03/2012 18:41

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



University of California Press is collaborating with JSTOR to digitize, preserve and extend access to *Historical Studies in the Physical and Biological Sciences*.

<http://www.jstor.org>

Heller, Michael. *Lemaître, Big Bang, and the quantum universe. With his original manuscript.* Tucson, Arizona: Pachart Publishing House, 1996. 108 pp.

In a paper of 1927 neglected originally and read widely only in the 1930s, Georges Lemaître, a Belgian astrophysicist, ordained priest, and, from 1960 until his death in 1966, president of the Pontifical Academy of Sciences, predicted an expanding universe. In a paper of 1931 he proposed a version of what would come to be known as a big-bang universe, an expanding universe with a beginning and a finite age. This proposal, too, initially escaped general acceptance and for historians of modern cosmology interest in Lemaître lies largely in attempting to explain why his forward-looking ideas were generally overlooked. There may be an implicit polemic inherent in emphasizing the advanced cosmological ideas of an outstanding scientist who was also an active and devoted Catholic—perhaps a sort of second chance for the Church to embrace and be embraced by a Galileo-like scientist—though the predilection of scientist-historians to discover and display anticipations of great scientific ideas without regard to historical influence or impact would be explanation enough for a small Lemaître industry.

This book presents, in facsimile, a 50-page typed manuscript in English on the expanding universe, apparently prepared by Lemaître around 1940 for the Catholic Encyclopedia of Japan but not published at the time. The manuscript was first published in 1985 as volume 2 (now out of print) in the Pachart History of Astronomy series, followed by volume 3 on the cosmology of Lemaître. This slightly expanded book (volume 10 in the series) adds a brief introduction noting the astonishing number of modern cosmological ideas known to Lemaître, particularly that of an initial singularity. Quantum and relativistic techniques of 1940 were not well advanced, and Michael Heller looks additionally to a talk by Lemaître of 1958 to reveal how surprisingly modern were Lemaître's conclusions.

Norriss S. Hetherington

Miller, H. Lyman. *Science and dissent in post-Mao China: The politics of knowledge.* Seattle: University of Washington Press, 1996. xii, 370 pp.

Was it a coincidence that scientists were among the most prominent dissidents emerging from the democratic movement in China in the late 1980s? H. Lyman Miller does not think so and he has assembled an impressive case for the connection between the liberal democratic ideals these dissidents advocated and their social standing and professional ethos as scientists. In this richly documented and well written book, Miller, a China scholar at Johns Hopkins University, argues that the scientists derived "powerful antiauthoritarian norms and rationalist values" from their scientific practice, which led them to question the repressive policies of the Communist party led by Deng Xiaoping.

Ironically, the Deng regime's encouragement of science for its

technological applications and for its supposed legitimization of Marxism first raised the expectation of scientists for moral and material support and emboldened them to speak out on social and political issues in the late 1970s and early 1980s. Disillusionment set in when scientists found themselves with reduced funding and lowered social status as a result of market-driven reforms and utilitarian science policy. Continuing ideological policing by the party in fields such as cosmology further alienated scientists, most prominent among them the astrophysicist Fang Lizhi and historian of science Xu Liangying. Fang and Xu wrote open letters to the government to demand increased support for basic research, release of political prisoners, and freedom of expression. These letters helped trigger the Tiananmen protest movement in 1989.

While historians of science will appreciate Miller's historical and contextual approach, including comparisons with earlier confrontations between scientists and the state in China and with the Soviet experience, they may find his reliance on Robert Merton's sociological theory of science puzzling. The book mentions only in passing the various critiques of the Mertonian model of science that question whether science possesses special norms and values. One wonders why liberal scientists extended the Mertonian antiauthoritarian norms of science to politics while their conservative colleagues did not. In fact, we learn very little about the latter group. Yet, Miller's use of Mertonian sociology seems to fit well the small but influential group of outspoken liberal scientists.

Miller's nuanced study of the politics of science in contemporary China complements James Reardon-Anderson's excellent work on an earlier period, *The study of change: Chemistry in China, 1840–1949*. They indicate a growing interest of sinologists in the history of modern science in China. These studies coincide with and benefit from recent scholarship from China, a sample of which has just appeared in English as *Chinese studies in the history and philosophy of science and technology*, edited by Dainian Fan and Robert S. Cohen.

Zuoyue Wang

Nye, Mary Jo, *Before big science: The pursuit of modern chemistry and physics, 1800–1940*. New York: Twayne, 1996. xviii, 282 pp.: illus.

The pendulum in the historiography of science appears to be swinging toward synthesis. As further evidence for this welcome trend we have *Before big science*, the first of a planned series by Twayne that aims to survey Western science from antiquity to the present for lay readers, undergraduates, and beginning graduate students. Nye admits to attempting neither a survey nor an exhaustive history in this volume, but she well fulfills the intended purpose.

Nye covers some of the same ground as P.M. Harman's *Energy, force, and matter*, which surveyed the conceptual development of physics in the 19th century, but she carries the story deep into the 20th century. This periodization reflects her emphasis on the emergence of big science as