ra aeris, which allows one to check the authors' interpretation against the most important text. Shapin and Schaffer have demonstrated that the beginnings of experiment during the Scientific Revolution are more complex than we had originally thought.

THOMAS L. HANKINS
Department of History, University of Washington, Seattle, WA 98195

A Russian Eminence

Mikhail Vasilievich Lomonosov. His Life and Work. G. E. PAVLOVA and A. S. FEDOROV. Mir, Moscow, 1985 (U.S. distributor, Imported Publications, Chicago). 312 pp., illus. $7.95. Translated with revisions from the Russian edition (1980) by Arthur Aksenov. Richard Hainsworth, Transl. Ed.

Anyone with an interest in the history of 18th-century science and technology or the development of modern Russia knows something about the achievements of the famous Russian chemist, metallurgist, geographer, astronomer, glassmaker, historian, and poet Mikhail Lomonosov (1711–1765). This amazing man fought his way up from his origins as the son of a poor peasant family living in the far north of Russia to become a scientist praised by Euler and Wolff and a poet and philologist lauded by Pushkin and Gogol. He was elected a foreign member of the Swedish and Bolognese academies of sciences, had his scientific works translated into all major European languages, and is universally acknowledged today as the "father of Russian science." He was the first to recognize that Venus has an atmosphere, and he opposed the concept of "weightless fluids" in theories of combustion. One of his odes is generally cited as the beginning of modern Russian poesy, he fought against the "Norman thesis" of the origin of the Russian state, he was the main organizer of Moscow University. In short, Lomonosov was a man of impressive and varied talents.

This biography, written by two researchers at the Institute for the History of the Natural Sciences and Technology of the Soviet Academy of Sciences, is for the most part a thorough, scholarly account of Lomonosov's life and work. It is organized rather well, with almost half the book a sketch of Lomonosov's life and times and the rest a field-by-field survey of his technical and scholarly achievements. There are plentiful portraits, engravings, and models, and the quality of illustrations is far superior to that usually produced by the book's English- and Russian-language publishers Mir and Nauka. Unfortunately, the translation and editing, especially in the first third of the book, are mediocre. We are told, for example, that Lomonosov gave a speech encouraging the exploitation of mineral resources in 1791 (26 years after his death), and the famous British geologist Sir Charles Lyell is rendered as "Lysle"; while capitalization, syntax, and word usage are erratic, to say the least. Mir Publishers would be able to produce a higher-quality translation if they relied more on native speakers as translators. The poor translation of the first chapters goes some way toward spoiling what is really a nice scientific biography.

Somewhat surprisingly for a Soviet biography of a scientist, the authors have made an attempt to sketch in the social history of Russia in the 18th century. In my opinion, they should not have bothered. Their statistics on literacy are garbled and improbable, and their glowing picture of industrialization and economic development in the time of Peter the Great would leave an uninformed reader with the mistaken impression that there was little left to accomplish in Russia by the time of the October Revolution of 1917 and the massive literacy and industrialization campaigns of the 20th century. In addition, the authors' repeated references to Lomonosov's "patriotism" strike a discordant note, especially as they are linked to the authors' own jarringly ethnocentric and social Darwinistic utterances about the "historical destiny of the Russian people" (p. 264). This is rather unfair to Lomonosov: his views of science as democratic and progressive, as international and cosmopolitan, as the servant and protector of the people, seem closer to those of the famous 19th-century nihilist/populist scientists (Sechenov, Mechnikov, Pavlov, Timiriazev, Kropotkin, the Kovalevskiis, and so on) than to any narrow form of nationalistic feeling.

These objections aside, however, this biography of Lomonosov is an enjoyable and informative piece of work. The last two-thirds of the book, beginning with the chapter "Organizer of Russian science," provides a detailed and richly textured picture of the many facets of Lomonosov's scientific, administrative, and other scholarly activity. Chapters on Lomonosov's atomic-kinetic concept, his chemical research, and his technological works are particularly strong. The authors manage to explain Lomonosov's theories clearly and put him in the context of the international scientific community of the time.

ANN HIBNER KOBLITZ
6547 17th Avenue, N.E., Seattle, WA 98115

Books Reviewed in *Science*

17 May 1985 through 16 May 1986

Acta Micropalaeontologica Sinica, 10 Jan. 1986, 165
Adaptive Mechanisms in Gaze Control, A. Berthoz and G. M. Jones, Eds., 20 Dec. 1985, 1371
Agricultural Science and the Quest for Legitimacy, A. I. Marcus, 7 March 1986, 1200
All the World's a Fair, R. W. Rydell, 10 Jan. 1986, 164
All Scientists Now, M. B. Hall, 17 May 1985, 843
American Sociology, A. J. Vidich and S. M. Lyman, 20 Sept. 1985, 1255
Andean Ecology and Civilization, S. Masuda *et al.*, Eds., 4 April 1986, 110
Animal Cell Biology, R. E. Spier and J. B. Griffiths, Eds., 4 April 1986, 114
Antarctic Ecology, R. M. Laws, Ed., 12 July 1985, 157
Antarctic Nutrient Cycles and Food Webs, W. R. Siegfried *et al.*, Eds., 1 Nov. 1985, 536
Application of Field Theory to Statistical Mechanics, L. Garrido, Ed., 28 June 1985, 1521
Archaean Geochemistry, A. Kroner *et al.*, Eds., 14 Feb. 1986, 751
Astrophysics of Active Galaxies and Quasi-Stellar Objects, J. S. Miller, Ed., 4 April 1986, 112
The Atom and the Fault, R. L. Meehan, 17 May 1985, 848
Attribution, H. Harvey and G. Weary, Eds., 2 May 1986, 665
The Background of Ecology, R. P. McIntosh, 15 Nov. 1985, 799
Bacteria in Their Natural Environments, M. Fletcher and G. D. Floodgate, Eds., 2 May 1986, 666
Basic Processes in Memory Development, C. J. Brainerd and M. Pressley, Eds., 21 March 1986, 1452
The Beginnings of Electron Microscopy, P. W. Hawkes, Ed., 3 Jan. 1986, 63
The Beginnings of the Nobel Institution, E. Crawford, 17 May 1985, 841
Beringia in the Cenozoic Era, V. L. Kontrimavichus, Ed., 25 April 1986, 533
Beyond IQ, R. J. Sternberg, 4 Oct. 1985, 59
Beyond Mechanization, L. Hirschhorn, 29 Nov. 1985, 1031
Beyond Velikovsky, H. H. Bauer, 14 June 1985, 1304
The Big Bang and Georges Lemaître, A. Berger, Ed., 16 Aug. 1985, 644
Biology of Amphibians, W. E. Duellman and L. Trueb, 11 April 1986, 271