

of them is given all the available data from documentary sources. The mass of archival information thus made accessible is supported by six statistical appendixes. On one scale, here is a wealth of material for studies in local history. On a broader scale, the book makes a valuable contribution to the overall story of the urbanization of Russia, helpful alike to the historical geographer and to the economic and social historian.

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NEWTON AND RUSSIA: THE EARLY INFLUENCE, 1698–1796. By *Valentin Boss*. Russian Research Center Studies, 69. Cambridge, Mass.: Harvard University Press, 1972. xviii, 309 pp. \$19.00.

This is a welcome addition to the small literature in English on eighteenth-century Russian science. Professor Boss has worked through an enormous amount of obscure material, and has had great success in his bibliographical detective work. A good example is his detailed examination of the first Russian edition of Euclid to establish which sections were written by which of the four translators (Tacquet, Domcke, Ferquharson, Satarov). Boss has also discovered a hitherto unknown copy of the first edition of Newton's *Principia*, probably brought to Russia by Jacob Bruce, Peter the Great's adviser.

Boss gives careful and fully documented answers to the main questions he has set himself: Did Peter the Great meet Newton? (probably not, but Bruce did). Which of Newton's books did Bruce own? (the *Principia*, *Optics*, and several commentaries). Was Bruce really the Russian translator of Huygens's *Kosmotheoros*? (yes). Does Lomonosov deserve priority over Herschel for improving Newton's reflecting telescope? (yes, and in addition, Boss shows that he invented an improvement for the refracting telescope). These questions show that the history of Russian science is an underdeveloped area, with basic facts still to be established. Thus, Boss takes as his model George Sarton, the pioneer historian of science, and not those like Alexandre Koyré, who wrote more general histories of scientific ideas. Boss, like Sarton, writes for the specialist, leaving his many quotations from Latin, Russian, German, and French sources untranslated.

Boss alludes to the sharp split between the Academy of Sciences, which was controlled by Germans and was anti-Newtonian, and the Russian amateurs outside the Academy, who were more receptive to Newton and played a key role in popularizing his ideas. Boss gives only a few examples of nonacademic Newtonians, such as Bolkhovitinov, who had Newton's work taught at his Voronezh seminary, and a cousin of Sumarokov's, who published a summary of Newton's ideas in a Tobolsk journal. It would be interesting to know if there were others. It seems, from Boss's evidence, that there were very few, making it all the more important to examine the Newtonian content of the few Russian-language science publications of the time. With the exception of Lomonosov's works, which Boss does examine in detail, these were unoriginal works, translations, and popularizations. Yet, for the history of Russian science, these first steps in assimilating new ideas were just as important as the more sophisticated Newtonian-Cartesian debates of the Academicians, which Boss discusses at length. Lydia Kutina's two recent (1964, 1966) studies of the formation of scientific terminology in early eighteenth-century Russia are a

useful supplement to Boss's book in this area. Her conclusion is that dozens of key words (and hence, concepts) of science were stabilized in the Russian language *before* Lomonosov. She shows, for example, that the Newtonian idea of "gravity" was familiar in Russian, and the terminology to describe it was surprisingly widespread and uniform, before 1740. Her conclusions contradict Boss's more traditional comments on this subject in his appendix, "Gravitation and Language."

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THE THREE EMPRESSES: CATHERINE I, ANNE AND ELIZABETH OF RUSSIA. By *Philip Longworth*. New York: Holt, Rinehart and Winston, 1972. xi, 242 pp. \$7.95.

Popular history can perform a valid function for both the specialist and the generalist. To the available published sources, mostly secondary, the author brings scholarly judgment, producing a work whose justification lies not in its originality but in the synthesis it offers those who choose not to pursue the topic further.

Longworth has enjoyed success with previous ventures into this genre: his Suvorov biography put to excellent use recently published materials, and his Cossack survey provided a convenient if controversial overview of a complex subject. In both instances the themes were manageable, the sources abundant and of reasonably high quality. Lacking similar advantages in the present study, Longworth compensates by relying on superficial diplomatic and travel accounts to present three essays of roughly equal length describing Catherine I, Anne, and Elizabeth—"a sot, a sadist, and a nymphomaniac" (to cite the introduction). Exposed to this framework—so frequently reserved for the fourth empress, Catherine II—the unsuspecting reader will logically assume that Russia sank to the depths of degradation in the post-Petrine era, and lose sight of its economic and military achievements. The reader may find the end product entertaining; he will not, however, find it particularly enlightening.

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ENDURANCE AND ENDEAVOUR: RUSSIAN HISTORY, 1812–1971. By *J. N. Westwood*. New York and London: Oxford University Press, 1973. viii, 472 pp. \$16.00.

This is a systematic historical account, stretching from 1812 to the period of "Stalin's Heirs." It is a solid but uninspired narrative of the important events, issues, and facts of 159 years of Russia's history. The author's purpose, however, is somewhat difficult to grasp. If it was to prepare a college textbook for use in this country, he must be criticized for failing to employ the pedagogically useful devices of numerous subheadings, charts, and photographs. If he intended to provide a survey of the latest scholarly knowledge in the field, presenting new insights and syntheses, it must be said that he falls short of the mark.

Both the style of writing and the manner of analysis are disturbing to this reviewer. Although the facts are accurate, the genteel style makes all people and