

ment of science at Cambridge thus mirrors that of modern science at large.

Cambridge Scientific Minds, which aims to be of interest not only to Cambridge alumni but to anyone interested in learning more about some of the greatest “scientific minds” in history, lives up to and even exceeds such expectations. The twenty-one biographical essays and two personal memoirs included are surprisingly fresh, informative, and models for this genre. Despite focusing on individuals, the authors effectively explicate and highlight significant developments in scientific disciplines, including pertinent methodological, philosophical, institutional, and social issues, to help “place” the contributions of the chosen individuals.

Unlike most collective works, this volume is surprisingly even. I can honestly say that I enjoyed reading each and every one of the essays and profited from my effort! Only a few examples must suffice in support of my praise. Stephen Pumfrey notes that William Gilbert’s “unprecedented experimentalism” relied on “skeptical empiricism” and the use of “analogy” in formulating the bold claim that the earth could be investigated experimentally in the laboratory (p. 12). Andrew Cunningham, examining William Harvey’s notion of the circulation of the blood, disputes that it was an empirical discovery; he describes it, rather, as a “deduction” derived not from the Aristotelian lectures Harvey attended at Cambridge but from the “anatomising programme” of his teacher Fabricius at Padua (p. 28). David Oldroyd traces Adam Sedgwick’s geological methodology to his mathematical training and specifically to “the Cambridge tradition that was being developed in the nineteenth century . . . , namely that scientific knowledge should be quantitative and that science should be concerned with the search for laws, formulated mathematically” (p. 75). Peter Bowler, in analyzing the importance of Cambridge in Darwin’s career, emphasizes the crucial role Cambridge dons have played in shaping the intellectual pursuits of their impressionable students. Simon Schaffer provides a nuanced treatment of Maxwell’s important role in developing mathematical physics. Having been “much affected by the changing landscape of nineteenth-century physical science in the age of British industrial supremacy,” Maxwell keenly recognized the importance of dynamics, “and his play with apparently unchallengeable principles let him see that modish energetics was by no means reducible to dynamics alone” (pp. 125, 130–131). Harmke Kamminga notes a similar prescience in Frederick Gowland Hopkins’s de-

velopment of an “ambitious programme of biochemistry,” which not only earned him a Nobel Prize but fostered a school of researchers (including many women) dedicated to his novel vision of biochemistry as “centred on the processes of life, using a combination of organic chemical analysis and the physicochemical study of equilibrium dynamics” (p. 177). Robert Olby explores the trajectory behind, and the significance of, Francis Crick and James Watson’s model of the double-helical structure of DNA, which provided the foundation for the “remarkable transformation in the scientific status, economic importance, and public visibility of biology” in the twentieth century (p. 269).

These selections can but tempt the prospective reader to delve deeper into the delightful insights provided by this volume. While intended to contribute to the popular consumption of the history of science, *Cambridge Scientific Minds* also epitomizes the best of recent developments in the history of science itself. The authors and editors are to be congratulated for a job very well done.

MARSHA L. RICHMOND

Eduard I. Kolchinsky (Editor). *Vo glave pervenstvuiushchego uchenogo sosloviia Rossii: Ocherki zhizni i deiatel'nosti prezidentov Imperatorskoi Sankt-Peterburgskoi Akademii nauk, 1725–1917*. 208 pp., frontis., illus. St. Petersburg: Nauka, 2000. (Cloth.)

During the year 2000 the Russian Academy of Sciences marked its 275th anniversary by celebrating its great achievements with an array of publications. The St. Petersburg branches of the Academy Archive and the Institute for the History of Science and Technology published a volume devoted to the practices of the twelve presidents of the Imperial St. Petersburg Academy, the predecessor of the former Soviet and the current Russian academies. This book attempts a sober assessment of the presidents’ contributions as both science patrons and administrators. Based on a wide range of archival documents, rare contemporary sources, and memoirs, this work is a thought-provoking treatment of the past viewed through present-day concerns of Russian academics.

The twelve essays that make up the volume are written by thirteen different authors. Despite some variations in narrative style and analytical depth, most of the essays focus on three important issues previously underplayed by Russian historians of the academy. First, the authors give primary attention to the question of academy funding, “the basic question of the organization

of Russian science" (p. 191). The presidents are largely evaluated in terms of their ability to navigate tsarist bureaucracy and to lobby for increases in the academy's budget.

Second, the book represents a radical break with the Soviet stereotype of the academy president as a reactionary tsarist bureaucrat appointed to watch over free-minded academic spirits. The presidents of the Imperial Academy, handpicked and appointed by the tsar, were often well-educated and able courtiers and civil servants with tangential interests in scholarly matters. Their other duties (often considered more important) at the court, in government agencies, or in diplomatic service seemed to some to impede their activity as academy presidents. The authors of this study, however, directly link the presidents' efficacy as science patrons and administrators with their bureaucratic experience and influence at the court.

Third, the authors reexamine another stereotypical assumption: the supposed "democratic" tendencies of the scientific community toward self-government. The authors specifically point to the "interregnum" periods (often lasting several years or even decades)—when a president, de facto, had resigned and a new one had not yet been appointed—as the worst periods of chaos and disarray. In 1733 five "directors" were appointed to alternate as chairmen at the Academy Conference in place of the outgoing president Hermann von Keiserling. Three of them immediately refused, and the others failed to show up at the conference (pp. 33, 37).

Rather than weaving a story that focuses on a search for "intellectual freedom," the authors largely describe a struggle for adequate funding waged by the academicians and the government. In 1890, for instance, a special commission solicited proposals from academicians for a new Academy Charter. As it turned out, all of the proposals requested new funds rather than changes in the existing charter (pp. 190–191). This evidence seems to support Loren Graham's provocative thesis that money appeared to be a more important factor than freedom in the development of Russian science (*What Have We Learned about Science and Technology from the Russian Experience* [Stanford, Calif.: Stanford University Press, 1998], Ch. 3).

There is a powerful reason why these issues are now attracting the attention of Russian historians: the Russian Academy is going through a very tough period of reorganization, funding cuts, and personnel reduction. Eighteenth-century quotations about delays in academicians' salary payments read like many stories re-

ported in recent Russian newspapers. It seems vitally important for the corps of academy researchers, to which the authors belong, to stress the significance of state support and sustained funding for the success of the scientific enterprise.

Despite the somewhat limited scope of analysis, this book adds significant elements to the overall picture of prerevolutionary Russian science. The academy presidents are shown to have provided a vital link between the academicians and the government, and this book helps bridge the gap between socioeconomic and political studies of the tsarist bureaucracy and intellectual and cultural histories of the Russian scientific community.

SLAVA GEROVITCH

Jennifer Connor. *Guardians of Medical Knowledge: The Genesis of the Medical Library Association.* xii + 190 pp., illus., tables, app., bibls., index. Lanham, Md./London: Medical Library Association/Scarecrow Press, 2000. \$65.

This slender volume was written for the Medical Library Association's centennial celebration. However, those looking for a comprehensive history of the association will not find it here. As Jennifer Connor writes: "Rather, this study attempts for the first time to investigate an unusual period in medicine and librarianship which saw the medical profession drawn to libraries for cultural as well as scientific reasons, . . . a time when full-time physicians—all men—controlled medical libraries, with full-time librarians—mostly women—as their assistants" (p. vii).

This leads Connor to focus on MLA's first generation of leaders: George Gould, Marcia Noyes, Margaret Charlton, Elisabeth Thies, John Ruhräh, and, towering above them all, the redoubtable Sir William Osler.

MLA traces its origins to a meeting held in the Philadelphia offices of George M. Gould, physician, editor, and lexicographer, on 2 May 1898. Total attendance was eight: four physicians (including Gould) and four librarians, including Charlton, Noyes, Thies, and Charles Perry Fisher. Osler had been invited but was unable to attend. His influence, however, was pervasive. He had delegated Thies (head of the medical library at Johns Hopkins) to attend in his place. Moreover, he had had a long professional relationship with Charlton at McGill University (in many ways he was her mentor there), and it was Osler who had hired Noyes to run the revamped library of the Medical-Chirurgical