

# Book Reviews

## A 19th-Century Figure

**Mary Somerville and the Cultivation of Science, 1815–1840.** ELIZABETH CHAMBERS PATTERSON. Nijhoff, The Hague, 1983 (U.S. distributor, Kluwer Boston, Hingham, Mass.). xiv, 264 pp. \$39.50. International Archives of the History of Ideas, 102.

As the title suggests, Elizabeth Patterson's *Mary Somerville and the Cultivation of Science, 1815–1840* supplies both an account of the work of a remarkable science expositor and a description of largely uncharted parts of the early 19th-century scientific landscape. Anyone concerned with certain other general issues, such as how women gained entry into the inner scientific sanctum or the popularization of science, will also find much of interest in this book.

By thoroughly mining archival and published sources, Patterson paints a detailed portrait of this fascinating Scots-woman who explicated Laplace's system of the world to an English-speaking audience in her *Mechanism of the Heavens* of 1831. Somerville was systematically discouraged from intellectual pursuits by her family and friends. Her second marriage—to her cousin William, an unremarkable medical doctor—presented the first opportunity for her theretofore clandestine study of mathematics and physical science to flourish openly. Even then, Somerville had to sandwich scientific writing between the incessant demands of a busy domestic life and myriad social obligations. Nevertheless, her career blossomed in the fluid, “companionable” scientific circles of London, where learned societies, scientific soirées, and the homes of fellow practitioners were within easy walking distance. With the support of the astronomer J. F. W. Herschel and others, Somerville produced another major treatise, *On the Connection of the Physical Sciences*, in 1834. This “scientific bestseller” went through nine editions and 15,000 copies in her lifetime alone. In William Whewell's review of this work for the *Quarterly Review* the term “scientist” was first coined.

Besides treating Somerville's life and works, Patterson captures the spirit of the stimulating intellectual coterie that nurtured and sustained her. Somerville

served as a striking refutation of Charles Babbage's polemic on the decline of science in England, exemplifying the accomplishments of unfettered individualism working without remarkable means. Although she became the darling of the reformist party in British science, only the Continent could attract Somerville away from London high scientific society. She never blessed the British Association with her presence, despite persistent annual invitations from the provincial philosophers.

Patterson also draws a rich comparison of national scientific styles when she describes Somerville's periods of residence in France, where *salon* society was not nearly so receptive to female intellectual attainment. Readers will find other tangential remarks intriguing as well, such as Patterson's discussion of the Scottish contribution to London intellectual life, the politics surrounding the award of a civil pension, the sorry state of English scientific libraries at the time, and the intricate system of editing scientific publications that prevailed during the early 19th century. Because of all the author accomplishes in a work of ostensibly narrow scope, both scholars and lay persons will enjoy reading this book.

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## Recollections of Physics

**Haphazard Reality.** Half a Century of Science. HENDRIK CASIMIR. Harper and Row, New York, 1983. xii, 356 pp. \$20; paper, \$7.95. Alfred P. Sloan Foundation Series.

The prominent Dutch industrial physicist Hendrik B. G. Casimir joins a growing number of well-known physicists who have generously published their memoirs in the last few years. Others recently moved to memoir include O. R. Frisch, V. F. Weisskopf, W. M. Elsasser, and R. Peierls. All these individuals belong to the generation of physicists that entered the profession during the “golden age” of contemporary physics in the late 1920's, and, though each is

outstanding in his own right, none can probably be numbered among the handful of leading physicists of this century.

Casimir's memoirs, as do those of his colleagues, reflect those common factors. Compared with the autobiographies of, say, Planck or Einstein, these scientists' memoirs are much less introspective, deal much less with their own years of “striving and struggle” (Einstein) in physics, and concern almost exclusively their encounters with others and their experiences of the great moments of physics. The authors are quite conscious of having been participants in and observers of a great and bygone era of physics—an era when physics was pursued by a small band of highly select, eccentric young enthusiasts who knew and worked closely with everyone else in the field, and who thus shared a kind of excitement, camaraderie and naïve optimism that survives today perhaps only in the memories of elder statesmen.

Casimir's aim is to set his memories of past encounters on paper for the benefit of younger physicists and lay readers. His memory fastens, however, not only upon physics but upon humorous anecdotes. These may appear trivial and insignificant, he writes, “yet they are important to me because they form part of one great impression that has enriched my life” (p. 89). This is no doubt true, but the emphasis upon anecdote—indeed upon getting the anecdote *right*—suggests that more is at stake here than mere memory. Casimir borrows from Frisch in speculating that the wealth of anecdotes indicates that physics demanded of the sheltered, well-to-do “youngsters” who entered the profession a childlike curiosity that fostered memorable adolescent behavior. Beyond this, the many jokes and pranks indicate an individualism, a disdain for convention, a youthful rebellion against father figures (to wit Bohr) that is all but lost in today's profession of team research, megabuck projects, and weapons of mass destruction. Thus, what better way to convey the pristine innocence and joy of the bygone golden age than through the carefree humor of legendary, youthful innocents?

Casimir was born into an upward-bound academic family in 1909, studied theoretical physics with Ehrenfest, Pauli, and Bohr, taught in Leiden, joined the Philips Laboratory in 1942, survived the World War II occupation of Holland, and advanced to the board of directors at Philips, from which he retired in 1972. His memoirs appear in the Sloan Foundation series of scientific memoirs, initiated with the admirable aim of making science more accessible to lay readers.