



Editorial

On “Minor” Scientists

“No character is minor.” So a playwright friend of ours tells his drama students. It is, after all, unnamed servants who save Gloucester at the end of act 3 of Shakespeare’s *King Lear*, and are thus integral to the rest of the play. Tom Stoppard underscored the point by putting two of *Hamlet*’s supposedly minor characters front and center in his play *Rosencrantz and Guildenstern are Dead*.

Historians of science should heed this point. It is not just that few scientists regard their own research prospects as minor; science is too absorbing and demanding a profession for those who view their potential contributions as insignificant. Nor is it only because major discoveries are sometimes found in tying up loose ends or nailing down a few decimal points—though that is certainly the case. For instance, Max Planck, warned by his advisor that only mop-up work was left to do in thermodynamics, was perfectly content to enter that field anyway—and ended up a revolutionary. Rather, the best reason to avoid treating figures in history of science as minor characters is that science—like many a good play— involves vast tapestries of independent actions, so that overemphasizing the most celebrated figures can crowd out the stories of others that might prove to be just as or even more helpful in understanding the overall picture.

For decades, historians of science have realized the shortcomings of focusing narrowly on extraordinary individuals—a tendency often called the “great man myth,” long recognized by historians in general. Yet this realization has not translated into significantly greater treatment of under-recognized scientists. Rather, it has generally meant scrutinizing large-scale social and institutional currents, collaborative efforts, the role of instruments, and other such processes. When attention has fallen on under-recognized *individuals*, they have tended to be the technicians, assistants, members of marginalized groups and other scientific laborers whose contributions went uncredited for reasons other than a lack of prize-winning breakthroughs. Scientists who fit squarely within the scientific establishment and did the type of work validated by traditional reward systems yet have long been eclipsed by their more illustrious colleagues find themselves neglected in the very stories that reject the myth of the great man. Can we tell the stories of underrecognized figures without seeking to cast them as secondary to larger processes or to elevate them (with the benefit of hindsight) to the pantheon of greatness? What might we learn from such studies?

The contributions to this issue showcase a number of salutary histories of minor figures, such as Helge Kragh’s account of the Danish physicist Ludvig Lorenz. Not

only did Lorenz fail to achieve fame in an era dominated by giants, but the similarity between his name and that of one of those giants, Hendrik Antoon Lorentz, weirdly ensured that the accolades he did accrue often have been mistakenly attributed to the more famous Dutchman. Lorenz's electrical theory of light failed to catch on, despite independently achieving many successes of James Clerk Maxwell's electromagnetic theory and anticipating the superfluity of the ether. Kragh's analysis of this theory reveals the richness of the intellectual community from which modern electromagnetic theory emerged. His account of why Lorenz fell short where Maxwell succeeded provides a clearer sense of what makes a scientific theory successful than would an account of the success alone.

Mikhail Lomonosov offers a different kind of lesson. One might say that he was major in the Russian world but minor in the European perspective. In Russia, he has long been celebrated to the point of mythology for his role in introducing Western science into that country as well as for specific scientific contributions. These include discoveries (the atmosphere of Venus), inventions (the first working prototype of a helicopter), instruments (a new kind of electrometer), anticipations of laws (conservation of mass), and founding key institutions (Russia's first chemical laboratory). Yet outside Russia, where scientific events were moving swiftly and pursued by larger and better connected communities, Lomonosov's name and contributions are still all but unknown.

In the book reviews, Cyrus C. M. Mody reviews Lillian Hoddeson and Peter Garrett's *The Man Who Saw Tomorrow*, about the outsider inventor Stanford Ovshinsky, and Deepanwita Dasgupta discusses Eric Scerri's *A Tale of Seven Scientists*, which seeks to develop a new way of thinking about science by bringing the neglected, minor figures into the foreground. Each reviewer notes how the treatment of marginal figures can enliven our historical vistas. Mody points out that though Ovshinsky was outré in many ways and shunned by the physics elites, his personal and demographic characteristic were shared by many others who contributed to the technological developments of the late twentieth century. Dasgupta praises Scerri for using so-called minor scientists to bring our attention back to the overarching consideration, long unfashionable, of how science functions as a whole. What might writing minor scientists back into our stories portend for the way we understand science as an epistemic and cultural enterprise?

The scientific community has well-developed systems for apportioning credit, systems designed to serve the contemporary needs of that community. But those needs are often orthogonal to the aims of historians. Paying greater attention to the characters those very systems of credit have passed over helps disentangle historical inquiry from bygone prestige politics.

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