

Book Reviews

James E Strick, *Sparks of life: Darwinism and the Victorian debates over spontaneous generation*, Cambridge, MA, Harvard University Press, 2000, pp. xi, 283, £30.95 (hardback 0-674-00292-X).

James Strick's detailed study focuses on the debates sparked by Henry Charlton Bastian's experiments intended to show that the "spontaneous generation" of life from non-living matter could be observed taking place in the laboratory. Although this episode has been studied by other historians of this theme, Strick adds new layers of interpretation centring on the manoeuvres within the scientific community which eventually marginalized Bastian and established the consensus that spontaneous generation was a process that could have occurred only in the distant past. His study takes it for granted that the experimental evidence itself was not clear enough to determine the outcome of the debate and exposes the changing strategy of the Darwinians (led by Thomas Henry Huxley and John Tyndall), which led them to treat Bastian as a loose cannon advocating a theory which was best distanced from the general case for evolutionism. This is a sophisticated social analysis that will interest historians of Victorian science but is also of considerable relevance to those concerned with the relationship between science and medicine.

Spontaneous generation was still widely accepted in the early Victorian period, and many at first assumed that it formed a natural component of the philosophy of scientific naturalism, along with evolutionism. Bastian himself argued for this association and was at first welcomed into Huxley's camp. But Huxley burnt his fingers on the related issue of "*Bathybius haeckelii*" (originally supposed to be primitive life formed on the sea-bed) and soon began to suspect that Bastian's work was also based on over-enthusiasm and sloppy technique. He began to distance evolutionism from the case for spontaneous generation by conceding that the latter process need only have occurred to create

the first living things, after which any later synthesis of the first steps toward life would be destroyed by existing organisms. There was no need to suppose that the whole process could still be observed taking place today. Tyndall attacked Bastian's work and was eventually led to the idea that heat resistant spores were responsible for the organisms produced in the experiments.

Historians of medicine will be particularly interested in the complex relationship displayed here between the Darwinians and the medical profession. Bastian's case became linked with the debates over the germ theory of disease because he claimed that micro-organisms were actually produced by the degeneration of diseased tissue. Tyndall persuaded Louis Pasteur, who was instinctively suspicious of spontaneous generation, to endorse the rejection of Bastian's claims (although Pasteur was reluctant to brand him a charlatan, preferring to think he had made an honest error). In Britain, the rift between the Darwinians and the medical researchers became deep, with Bastian finding a natural home for his views among those who opposed the germ theory. Although a few of Huxley's supporters—E Ray Lankester, for instance—had a foot in the medical camp, the two areas went their separate ways on the issue. And because the germ theory was both controversial and complex, Bastian's position remained popular among medical researchers even after that theory began to gain wide acceptance. He was appointed to a chair at University College Medical School in 1878 and continued an active career in neurobiology despite being ostracized by the Darwinians who dominated the scientific establishment. It would have been interesting to know more about this later phase of his career and the professional isolationism that made it possible, although this is admittedly beyond Strick's remit.

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