Vignettes: A Human Activity

Scientific thinking, which is analytic and objective, goes against the grain of traditional human thinking, which is associative and subjective. Far from being a natural part of human development, science arose from unique historical factors.

—*Alan Cromer*, in *Uncommon Sense: The Heretical Nature of Science* (Oxford University Press)

If humans exist on earth for a purpose, it is likely to be for scientific research. It is the one urge that is exclusively human and distinctive of the race.

—*Cinna Lomnitz*, in *Fundamentals of Earthquake Prediction* (Wiley)

vinced by the research of Alfred D. Chandler, the dean of business historians around the world, that large enterprise has been the primary source of our relative prosperity during the last century. Instead, Teitelman balances the disadvantages stemming from bureaucracy and monopoly power against the competitive advantages achieved by corporate scale and scope. "Balance" is the operative word here. Teitelman swings back and forth as he debates this issue with himself, now finding evidence that small is better, then finding oligopoly again triumphant. To his credit, he is sincerely interested in the evidence. In the end, he opts for a cyclical explanation in which individuals and small units launch the process of innovation and then give way to the large corporation and the concentrated industry. "In this ecology of technology," he says, "evolution, not revolution, predominates; cycles proceed within cycles within cycles" (p. 223).

This scenario fits some U.S. industries rather well, but it conflicts with much of what we know about pharmaceuticals, one of Teitelman's case studies. Merck and Company became the industry leader by way of innovation, first in medicinal chemistry and then in biochemistry. Teitelman downplays the accomplishments of that first phase of corporate entrepreneurship, one that involved important innovations in process as well as product by Merck and other large firms in the industry. In dealing with biochemistry, he focuses rather narrowly on the new organizations that frequently failed, rather than on the large firms that used the new science and the new technology to develop a wide range of important cardiovasculars, antihypertensives, and vaccines. Animal health innovations have also had some important macro-economic effects of the sort that would make Schumpeter smile, but Teitelman categorizes these developments with drug company diversification and discounts them.

As you must have sensed, however, these are the complaints of a specialist, and we are not in fact the primary audience for whom this book is intended. *Profits of Science* is an extremely well-written history for the nonspecialist. The sciences and technologies are explained with clarity and economy. The author places the company histories in a context that includes the financial markets from which they obtained and sometimes failed to obtain capital. Though he finds in these several histories less progress than a Schumpeter or a Chandler or this reviewer would like, he achieves his major objective, providing what should be a broad readership with a new and interesting view of America's "technological economy." Along the way, he provides the Clinton Administration with a critique that deserves the attention of the White House.

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