
It is a historical commonplace that the American steel industry was one of the economic “successes” of the late nineteenth century, the British, one of the “failures.” It is Geoffrey Tweedale’s achievement to detail the business, trading, and personal links between these two cases and so to emphasize the durability and significance of the transatlantic economy. He sets aside the fiery Bessemer converter and the rolling of rails and instead examines the clay crucible hefted by highly skilled workmen and the making of tools, cutlery, and other items requiring a high quality steel. The inquiry is detailed, comparative, and based on fresh archival sources located in England and America. The results surpass the author’s stated aim to redress historians’ preoccupation with bulk steelmaking.

Tweedale pursues two fruitful lines of inquiry. First, he asks what were the technical contributions of Sheffield steelmakers to the American economy, and his answers refute the argument that America had gained technological independence by the late nineteenth century. Into the next century, if not beyond 1930, Sheffield’s small and medium-sized enterprises supplied America’s farms with crucible steel for hammers, axes, and grain reapers, its machine shops with high-speed tool steel, its dinner tables and dairies with stainless steel, and its steel manufacturing centers with skilled if not docile workmen. Exports to America accounted for up to one third of Sheffield’s total steel production. A generation of American crucible steel makers depended on Sheffield skills.

That decades of American trading and experience did not transform Sheffieldsers’ steelmaking practice forms a second line of inquiry. Here Tweedale contributes to the ongoing debate on the “decline” of British industry in the early twentieth century. He reexamines familiar causes, including the stringent American import tariff, the relative cost of raw materials and labor, and the skills and temperament of workers in Sheffield and America. Memorable anecdotes transform such abstract forces as the tariff into gritty problems faced by Sheffield steelmakers, many of whom responded by moving their operations onto American soil. Moreover, Tweedale maintains that the skilled Sheffield workers prevented the mechanization of their trades, even after 1880 when American machines began turning out thousands of files, razors, and saw blades and thus drove their price below the level at which handcrafted Sheffield products remained competitive. Though Sheffieldsers had gained the American market in the early nineteenth century owing to the quality and price competitiveness of their cutlery and other goods, they lost this market by the twentieth century to cheaper machine-made domestic goods.

Yet not all hinged on machines. Remaining committed to an “individualistic” conception of their trade, Sheffieldsers disdained the formation of large integrated firms (while American financiers consolidated thirteen plants with 95 percent of domestic production into the Crucible Steel Company of America) and eschewed the practice of advertising (while Americans such as King C. Gillette built an empire on the heavily-advertised concept of cheap throw-away razors). Sheffield struggled to maintain a technical lead in special steels until the outbreak of World War I, when “the electric furnace destroyed
Sheffield’s predominance forever.” (p. 187) Tweedale thus skillfully combines labor, technological and business history to weave a complex and convincing account of the eclipse of Sheffield’s preeminence in the making and working of high-grade steel.

The themes outlined above sometimes slip out of focus. Here a broader interpretive framework could have unified the detailed narrative. The sequence of the thirteen brief chapters is neither logical, chronological, nor explained sufficiently. *Isis* readers will perhaps puzzle whether anything significant, beyond the preparing of scientific testimony for patent lawsuits, occurred in the Sheffield University metallurgy laboratory. And illustrations (besides the one map and 13 tables) would have clarified Tweedale’s descriptions of technical processes. Still, this compact and clearly written book portrays a truly transatlantic technology and demonstrates why (p. 127) “Sheffield’s great technological advantage was not the road to easy riches.”

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