in the sale of medicines; and views on the harm of reading and writing. Isaac’s comment at the end of his essay that modern pharmacies sell books and, “perhaps the ultimate degradation,” supermarkets sell both books and medicines seems out of place both for its condescension and for the fact that he himself notes the long tradition behind this “full circle.”

On the whole, this volume has a catchy title to encompass the broad notions presented in these essays of medical publishing and collecting, and health conditions posed by reading, writing, and working in the trade. Yet instead of presenting insights into a new area of investigation, as apparently verbatim conference papers it leans toward light reading. Not that there is anything wrong with that pastime—especially in travel or in teaching. To this end, Roy Porter’s witty and glib contribution provides the most entertainment by far and delightfully concludes the volume: caveat lector.

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After the introduction of high speed steam presses in the mid-19th century, the hand composition of type remained a major impediment to rapid, mechanized production of printed matter. Composition became, in the words of Thomas Hughes, historian of technology, a “reverse salient,” the trailing edge of advancing technique. Printing proprietors, particularly in daily newspapers, could not realize the full profits of mechanized printing until the composition of type proceeded with the same dispatch as the process of impression. For this reason, inventors set their minds to developing type-composing machines. Without doubt the most successful of these individuals, at least in terms of commercial acceptance, was Otmar Mergenthaler, inventor of the Linotype.

The life of Otmar Mergenthaler is a classic story of American ambition and know-how. It has all the elements: humble origins, ingenuity, determination, greed, betrayal, even tragedy. Much of this story can be found in Mergenthaler’s thinly veiled autobiography, The Biography of Otmar Mergenthaler, which was edited and reissued
by Carl Schlesinger in 1989. Now, Basil Kahan has provided a further exploration in _Otmar Mergenthaler: The Man and his Machine._

The Linotype, writes literary critic Hugh Kenner, “is as complicated a piece of lever-and-gear technology as you’d want to think about.” Little wonder, we might add then, that it took a gifted, German-born watchmaker to make it work. Emigrating to the United States in 1872, Mergenthaler worked as a machinist for several years before making the acquaintance of James Ogilvie Clephane, a Washington court reporter with interests in all manner of mechanical typewriters and typesetters. Mergenthaler set about redesigning a failed machine that Clephane was promoting and so embarked on a career that would produce the Linotype, a fixture in newspaper and printing offices until the 1970s. Mergenthaler built his first linecasting machine in 1884 and continued to make improvements almost until his death in 1899. Yet this productive career was blighted almost from the start by chronic disputes with the venture capitalists who financed his work and ultimately gained most of the profit from it. These disputes, combined with long hours of work in typically unhealthy factory conditions, no doubt hastened the progress of tuberculosis that would kill him at age 45.

The outline of these events is already available in _The Biography_, which Mergenthaler dictated on his deathbed. That book, though, was written with the intent to settle scores and defend claims. Kahan has attempted a more balanced assessment of Mergenthaler. While clearly enamoured with his subject, whom he calls “one of the great inventors of the 19th century,” Kahan is not blind to the errors and vanities that may have made Mergenthaler his own worst enemy. In many ways, the book is Kahan’s dialogue with the dictated biography. He refers to it frequently, but attempts a more subtle reading of its key events.

The main strength of Kahan’s book is this alternate reading, which he has fashioned from a variety of primary sources, including the letters of Mergenthaler’s business associates, Whitelaw Reid, J.O. Clephane, and L.G. Hine. From these sources there remains no doubt that Mergenthaler got on badly with the directors of the company, particularly Reid and Philip T. Dodge. For years they refused to reimburse Mergenthaler for tools and drawings and more importantly, they withheld royalties until his own finances were so desperate he had to sell his company shares and grudgingly accept a reduced offer from the directors. As a final indignity, Dodge attempted to have the now terminally ill inventor’s surname removed
from the name of the Mergenthaler Linotype Company. Nevertheless, when he died, Mergenthaler left his heirs a comfortable fortune and a significant annual royalty income.

Kahan would argue that some of Mergenthaler’s troubles might have been avoided. It is obvious he would have benefited from better legal advice during the drafting of his initial contract with the National Typographic Co., precursor of the Mergenthaler Linotype Co. To the modern reader, Mergenthaler’s relations with the variously named companies that controlled his invention were a litigation lawyer’s dream. Mergenthaler was at one time and often simultaneously acting as: a shareholder in the company; a recipient of royalties from the company; an employee managing their Baltimore factory (though using some of his own tools); a contractor manufacturing Linotype machines in his own plant (and at half the cost of those made in Linotype’s own factory); an inventor of Linotype improvements whose rights he had already signed over to the company; and finally, an independent manufacturer of replacement Linotype parts in competition with the Linotype Company. Much of Mergenthaler’s trouble probably derived from this ambiguity and complexity of his relations with the company.

It is clear that Mergenthaler was out of his depth among the slick operators who had hitched their wagon to his invention. But Kahan argues that Mergenthaler, for his part, failed to appreciate the investors’ need to see a reasonably early return on their investment. Despite repeated entreaties that he get on with manufacturing the first order of machines, Mergenthaler continued to make improvements on the shop floor, thus delaying delivery. To Kahan, this was nothing short of “irresponsible.”

What becomes most clear from Kahan’s biography, is that Mergenthaler was a man caught in a situation for which he was ill-equipped. Mergenthaler was driven by traditional values like honour, personal loyalty, and hard work. He was easily moved to fury by the devious manoeuvres of company executives and failed, perhaps due to his imperfect grasp of English, to recognize subtle signals of imminent trouble in the letters he received from head office. Also, though a man of honour, he was not a man of tact. Once moved to anger by some real or imagined slight, his reaction too often prejudiced his chances of redress.

Of more interest to me, though, is how Mergenthaler and the company directors together struggled to navigate the difficult transition from invention to large-scale manufacture of a standardized
product. By training and temperament, Mergenthaler thrived in the small workshop environment of skilled metal tradesmen. From Kahan we learn that he took great pride in assembling a loyal and skilled workforce for his Baltimore factory, which he was loathe to disperse when instructed by a cost-conscious New York management. As well, he could not resist the temptation to incorporate improvements while production was underway, so that for a time no two machines were exactly alike. Mergenthaler was most at home as a hands-on engineer, and not as the manager of a manufacturing operation.

Kahan fails to point out, however, that Mergenthaler was not alone in this regard. In the late 19th century the old style of workshop production was giving way to large integrated industrial concerns. Everyone was experimenting with how to most profitably control large concentrations of workers to produce volumes of identical products of unprecedented complexity. One of the most illuminating passages in Kahan’s biography deals with the trouble Mergenthaler had producing the hundreds of technical drawings needed for production at the company’s Brooklyn plant. As long as Mergenthaler was producing one-off machines in his own Baltimore shop this had not been an issue. His own sketches, plus the accumulated knowledge of himself and his workers, had been sufficient. But once production shifted to a large factory where no one had seen a Linotype before, that knowledge had to be distilled in excruciatingly detailed plans. Even with these drawings, the Brooklyn plant for years could not match the cost, quantity, or quality of Baltimore’s (nor could the parts be used interchangeably). Mergenthaler ascribed this to mismanagement, but the real reason was an organizational one endemic to new large industrial concerns. In this regard, the company directors were just as naive as Mergenthaler. Their haste to ramp up commercial production of a still untried prototype was as much a problem as Mergenthaler’s irresistible urge to tweak his creation.

For this reason, I don’t see much point in Kahan’s attempt to explain Mergenthaler’s troubles by the character weaknesses or moral flaws of the various protagonists. I doubt that Reid, Dodge et al. were any more venal than the average 19th-century (or 20th-century) capitalist. And even if Mergenthaler had been more astute it is doubtful that he could have avoided many of the hassles that sapped his energies. The 19th-century inventors who managed to maintain control of their inventions were very few, largely because the capital and business acumen required to bring them to market were beyond their means and abilities.
The book is not without other flaws. At times Kahan seems overwhelmed by his sources. There are several long, awkward paraphrases of correspondence, and occasionally he gets tangled in excessive and irrelevant details. From time to time I had difficulty following the thread of the narrative. Kahan could also have done a better job of explaining the admittedly Byzantine financial transactions related to the capitalization of the various Linotype companies. I am probably not the only reader who will miss the significant facts in Kahan's confusing accounts. Finally, though Kahan furnishes an excellent technical description of the various Linotype machines, its value would have been enhanced by more diagrams and illustrations.

Despite these complaints, Ottmar Mergenthaler: The Man and his Machine is an engaging contribution to our knowledge of a pivotal development in printing technology. In addition to the main text, Kahan includes a useful glossary and bibliography as well as capsule biographies of many of Mergenthaler's associates. While Canadian readers might prefer more information on the situation in Canada, Kahan does provide an account of the formation of the British Linotype Co. Overall, Kahan's book provides a useful complement to Schlesinger's edition of The Biography of Ottmar Mergenthaler.

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Forgery is as ineluctably fascinating as a naked body or a train wreck. It seems highly likely that most forgers want to fail—that is, to be unmasked—because paradoxically only by failing does a forger gain renown. Doubtless for every William Henry Ireland who has been steered into the history books by a dedicated cicerone like Edmond Malone, there are others whose 'talents,' for whatever reason, have remained secret; and a genius, even for criminality, known to none but the perpetrator, must yield an unsatisfying sort of pleasure, despite its appreciable effect of keeping a person out of jail or at least free from obloquy.