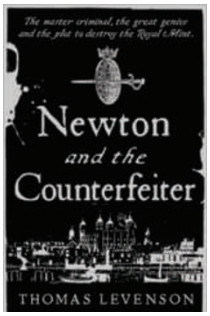
Ignorance is amiss



Newton and the Counterfeiter

By Thomas Levenson

FABER & FABER: 2009. 320 PP. £20

For any physicist, Isaac Newton is a fact of life. He's so pervasive he might as well be one of the fundamental forces. Without having sought them, I have encountered numerous relics: a graft from his apple tree, an annotated page from the *Principia*, the cloisters where he fudged his measurement of the speed of sound, an intimate portrait of him in his dressing gown, his death mask. It never occurred to me to actually go and read about Newton: I already knew all about him. In the same perverse way, I resisted going to Rome; but when I did finally visit, I was amazed. Similarly, *Newton and the Counterfeiter* by Thomas Levenson was absolutely fascinating.

I was dimly aware that Newton spent some time at the Royal Mint. So far, so ignorant. In fact, he became Warden of the Mint on 2 May 1696, aged 53, ostensibly in charge of building maintenance, which included the machines and the horses to drive them. However, it was during the time of the Great Recoinage, when England ran out of money — literally. English coins were worth more for their silver content than their monetary value, and early practitioners of arbitrage profited by selling melted-down silver coins across the Channel and buying Dutch gold, with which they could buy more silver in England, in an endless loop. Coins were so scarce that trade all but stopped. The resulting credit crunch affected even King William III, who was struggling to pay his army in Flanders as they fought the French. Indeed, the situation was so desperate that the Bank of England was born. It lent its capital, invested by wealthy men, to the government and then issued banknotes that the investors could spend.

To further compound the problem, forgeries and coin-clipping — in which silver is trimmed from the edges — resulted in some coins being only a quarter of their original weight. Something needed to be done, and soon. Parliament voted for complete recoinage. It was a huge enterprise, requiring seven million pounds of new coins. Most of the work fell to Newton, as the Master of the Mint was thoroughly useless. Newton applied his scientific method to optimize the recoinage process, which included an empirical determination of the optimal pace of work for his five hundred men and fifty horses (for the curious, the limiting factor was the speed at which a man could safely load and flip blanks into the press that stamps the faces of the coins, which was set to stamp about fifty to fifty-five times a minute). By late summer, the Mint was able to produce 100,000 pounds of coins per week, when once only 15,000 was thought impossible.

Newton was so successful that the task was completed ahead of schedule. Unfortunately for him, he was then available, as Warden, to handle the case of a missing set of coining dies. Although unwilling at first, he showed a knack for getting to grips with the criminal underworld. He employed a number of shady characters as informants and ran a network of undercover agents and old-fashioned muscle. He also interviewed condemned prisoners (coining was an act of high treason), who were keen to be of service, although sometimes they were too keen, producing a tangled web of conflicting stories.

One 'coiner', in particular, attracted Newton's attention. William Chaloner excelled at producing high-quality false coins. Moreover, he was cunning enough to play both sides of the law. In an attempt to gain access to the Mint itself, he charged that persons within the Mint were planning to produce clipped coins and then offered himself as a consultant on how to avert this impending disaster. The parliamentary committee investigating his claim was so impressed with his proposal of "a better, securer and more effectual way, and with very little charge to his majesty, to prevent either casting or counterfeiting of the milled mony" that they commanded Newton to allow Chaloner entry into the Mint to make an experiment. Newton refused, and endeavoured to show the committee that the idea was flawed, but it didn't matter. Chaloner was openly praised in the parliamentary report, much to Newton's disgust. The coiner returned to his craft.

From then on, Newton watched and waited. Inevitably, Chaloner was arrested and a battle of wits ensued. Newton tirelessly and, possibly, overzealously interviewed witnesses to build his case. Here my enthusiasm for the book abated somewhat, mainly because it seemed inevitable that Newton would crush his adversary. What chance did a felon have against one of the founders of modern science?

From the title of the book, I did not expect so broad a scope. It paints a vivid picture of London — particularly its underbelly — including references to the Great Fire and the plague. I could smell the streets and hear the pounding machines inside the Mint. And I certainly didn't expect it to be such a gripping read. Although it stars a natural philosopher, the book is certainly accessible to a general readership. Levenson's description of the seventeenth-century credit crunch and the birth of the banking system seem especially relevant today. And Newton, of course, is a compelling character. Perhaps I should read a biography. ❐

REVIEWED BY MAY CHIAO

ON OUR BOOKSHELF

Adventures in Atomville: The Macroscope

By Jill Linz and Cindy Schwarz

SMALL WORLD BOOKS: 2009. 84 PP. $12

This book, intended as a story for children aged 8–11, happens to feature elements and elementary particles. Although readers might not understand the particle–wave duality of the electrons belonging to the main characters, Niles the nitrogen atom and his best friend Livvie (an oxygen atom), they should be able to relate to the childish scrapes and adventures.