ironworks. Soon afterwards, Isaac, the father, moved to Bersham near Wrexham where he leased a colliery and a furnace, evidently in collaboration with his son. By 1760 John Wilkinson was partner in an ironworks at Willey near Broseley which chiefly produced cannon and projectiles. In the 1770s he claimed to be smelting iron with **coal,** and in 1774 took out a patent for casting and boring iron cannon, and by his skill was able to start to supply steam-engine cylinders to Boulton and Watt. Soon Wilkinson was blowing his Willey furnace with a Watt engine, while he installed a second engine to pump spent millwater back into the millpond for re-use.

Wilkinson was a subscriber to the well-known pioneering iron bridge at Coalbrookdale. In the 1780s he resurrected an early idea of his, to use iron to construct a boat; the long narrow vessel, 70 feet in length and constructed of $\frac{5}{16}$-inch wrought-iron plates, weighing 8 tons, was launched in July 1787. It drew 8-9 inches when light, and had a capacity of 32 tons.

It is thought that in 1783 Wilkinson's new works at Bradley, near Tipton and Walsall, were the site of Watt's first commercial rotative steam engine, used for forging. During the winter soon afterwards, when all the water-driven works were frozen and standing, Wilkinson's steam mill continued to turn out rolled and slit iron strip for nailmakers. Around 1785 he secured a contract to supply large quantities of cast-iron pipes for water supplies in Paris. It appears that in 1793 John, and his brother William who had been looking after the Bersham works, caused much of the equipment to be smashed, so ending their partnership there. In 1796 John started a new iron-smelting furnace at nearby Brymbo.

In his seventies John Wilkinson was responsible for three illegimate children whom, together with their mother, he willed to be inheritors of his estates. However, having no surviving legitimate children from two marriages, he had previously taken a nephew into the business. On John's death, reputedly as a millionaire, the nephew began legal proceedings to acquire the entire property. Litigation went on for more than seven years and the whole estate declined and was eventually dissipated.

Wilkinson is said to have been buried in one of his numerous waiting cast-iron coffins: because of various difficulties, re-internment took place several times. Years later, soon after his coffin had been moved into the chapel at Lindale-in-Cartmel, records of its whereabouts became lost. His cast-iron obelisk, moved to railway sidings at Grange-over-Sands by a scrap dealer, was brought back by wellwishers, and re-erected at Lindale (within the last few years it has been renovated).

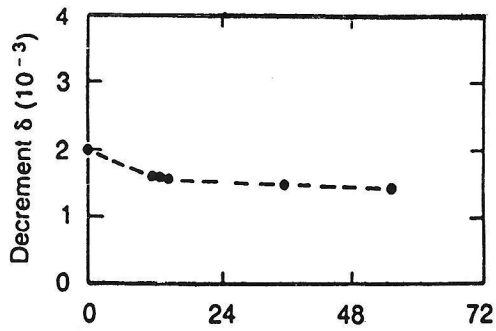
The book contains a short bibliography and an index. Thirty-three illustrations appear in a block of 23 sheets. Nearly all are lively line drawings and pen-and-ink sketches which are reproduced effectively to illustrate the various houses and other features associated with Wilkinson. Unfortunately on some of the sketches the written captions are too small and blurred to be decipherable: presumably this problem results from shrinking the originals. Moreover, sources are not given.

The writer succeeds in his aim to produce a readable account, packed with information, from a complicated series of events and places, for some of which scant evidence is available. This is not an argumentative work, or one attempting to provide new evidence on the Wilkinson story. With so much activity to describe it is perhaps natural that there are few explicit comments made about John Wilkinson the man: indeed, may be the writer feels crucial evidence on this aspect is missing. As far as visible relics are concerned, he does a good job with his sketches of houses and, sadly, reports repeatedly how remains of such-and such an ironworks were standing until the 1960s, when they were bulldozed into oblivion to make way for a new housing estate, and leaving no chance for excavation at any time in the future. In value this work compares favourably with many other publications, especially some of those on historical topics which are offered commercially to gullible tourists.

J K Almond

Erratum

In Martha Goodway's paper with R M Fisher on Phosphorus in Low Carbon Iron printed in JHMS for 1988, Vol. 22, No. p. 23, the wrong graph was given in Table 3. The 18th century Köster effect plot on the left should be:-



As will be seen, this is much more like the 1986 replica referred to at the bottom of page 22.