

## Leonardo of Victorian Era

*Isambard Kingdom Brunel: A Biography*, L.T.C.Rolt.

Review by John Betjeman.

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Isambard Kingdom Brunel was one of the greatest men of the last century or, indeed, of any century in Western Christendom. If he can compare with anyone, he is something like Leonardo da Vinci.

Both were artists and scientists — and if people doubt so seemingly extravagant a claim for a Victorian engineer who worked mostly with cast iron and steam engines, L.T.C. Rolt's inspiring biography will substantiate the claim. Brunel was born at Portsea in 1806. His father was a French refugee, married to an English woman. This Marc Brunel invented improvements to block-making machinery which had a profound effect on British engineering.

When his son Isambard was eighteen, he was helping him in the construction of the first subaqueous tunnel in the world, which runs under the Thames from Wapping to Rotherhithe. To this day its brick arches may be seen by anyone who stands on Wapping Underground Station and looks down the railway tunnel that it has now become.

When he was twenty-four, I.K. Brunel won the competition for the suspension bridge at Clifton, beating even the veteran engineer Telford with his design. This superbly elegant structure was completed after his death by Sir John Hawkshaw, as a memorial to his genius.

It is characteristic of the intrepidity of Brunel that, when work started on the bridge and an iron bar was stretched across the deep abyss of the Avon Gorge, he should make the first journey across it in a basket suspended from a pulley. Halfway across the roller stuck, and breathless workmen on either bank saw the young engineer climb up the rope and free the roller.

His next work was what he regarded as his greatest — the construction of the Great Western Railway from Bristol to Paddington. This involved the making of the Box tunnel and in 1838 the construction of the beautiful brick railway bridge over the Thames at Maidenhead which consists of two of the largest and flattest arches that had ever been built in brickwork. Everyone prophesied they would collapse, but there they are to this day, and Brunel's bridge makes even the elegant eighteenth-century road bridge adjacent to it look commonplace.

The bridges at Saltash and Chepstow are two more familiar examples of his genius. In 1850 he rebuilt Paddington Station entirely of metal and glass and, since it is in a cutting, with no exterior walls.

What his rival and friend Robert Stephenson was to the North and the narrower gauge railways, Brunel was to the West with his broad gauge. These were the days when Bristol was losing its trade to Liverpool, and it was this rivalry which gave Brunel the opportunity to design the first large steamship to cross the Atlantic, in an attempt to bring back ocean trade to Bristol.

His death was precipitated by the disgusting trickery, swindling and denigration he suffered from a jealous megalomaniac engineer called Scott Russell over the building of the Great Eastern steamship. Brunel died aged fifty-two, and never saw his great vessel sail.

Like his predecessor Telford, he was an artist and architect. But he was a more original architect than Telford, as all who have seen the interesting Telford Exhibition in London will know when they compare Telford's architecture with Brunel's.

We can see the trouble he took over the Italianate pumping stations for the now defunct atmospheric railway from Exeter to Dawlish, over the Egyptian-shaped piers at Clifton Bridge and the tunnel openings, viaducts and stations, where these survive unmolested, on the Great Western. His diaries record his delight in visiting cathedrals. Architecture and engineering to Brunel were one.

Mr Rolt has the rare gift of making the technical problems of engineering interesting and comprehensible to the layman. He combines with this an appreciation of Brunel's forthright, vigorous and humorous character. When complaining of the refreshment rooms at Swindon, Brunel wrote that: 'Mr Player was wrong in supposing that I thought you purchased inferior coffee. I thought I said to him I was surprised you should buy such bad roasted corn. I did not believe you had such a thing as coffee in the place.'

We learn of how, when Brunel was nearly choking to death through swallowing a half-sovereign while doing conjuring tricks for his children, he invented a revolving board on to which he was strapped down, whirled round and eventually delivered of the half-sovereign through his mouth.

I can think of few people I would sooner have met than this man Mr Rolt has so well presented to us. I would like to know more about how he stands in relation to other engineers of his time and to Victorian society in general.

The publishers should have been more generous with their illustrations, and might have made the format of the book look much less like a textbook for students.