had been directed from the first by his anticipation of the one now about to be undertaken.

"In order to bring the canal to Manchester it was necessary to carry it across the Irwell. That river is, and was then, navigable for a considerable way above the place at which the canal comes up to it; and this circumstance interposed an additional difficulty, as, of course, in establishing the one navigation, it was indispensable that the other should not be destroyed or interfered with. But nothing could dismay the daring genius of Brindley. Thinking it, however, due to his noble employer to give him the most satisfying evidence in his power of the practicability of his design, he requested that another engineer might be called in to give his opinion before its execution should be determined on. This person Brindley carried to the spot where he proposed to rear his aqueduct, and endeavoured to explain to him how he meant to carry on the work. But the other only shook his head, and remarked that 'he had often heard of castles in the air, but never before was shown where any of them were to be erected.' The Duke, nevertheless, retained his confidence in his own engineer, and it was resolved that the work should proceed. The erection of the aqueduct, accordingly, was begun in September, 1760, and on the 17th of July following the first boat passed over it, the whole structure forming a bridge of above two hundred yards in length, supported upon three arches, of which the centre one rose nearly forty feet above the surface of the river; on which might be frequently beheld a vessel passing along, while another, with all its masts and sails standing, was holding its undisturbed way directly under its keel.

"In 1762 an act of parliament was, after much opposition, obtained by the Duke, for carrring a branch of his canal to communicate with Liverpool, and so uniting that town, by this method of communication, to Manchester. This portion of the canal, which is more than twenty-nine miles in length, is, like the former, without locks, and is carried by an aqueduct over the Mersey, the arch of which, however, is less lofty than that of the one over the Irwell,

as the river is not navigable at the place where it crosses. It passes also over several valleys of considerable width and depth. Before this the usual price of the carriage of goods between Liverpool and Manchester had been twelve shillings per ton by water, and forty shillings by land; they were now conveyed by the canal at a charge of six shillings per ton, and with all the regularity of land carriage."

During the progress of this gigantic work Brindley was engaged by Lord Gower, a relation of the Duke of Bridgewater, and several other Staffordshire gentlemen, to survey a line of canal for uniting the Trent and the Mersey. As it appeared to the engineer that this work was practicable, he was entrusted with its conduct. There were very formidable difficulties in his way, but with these it was his purpose to contest; the tract of elevated country through which this canal must pass seemed to offer an insurmountable barrier to its construction; but Brindley carried a tunnel through of 2,880 yards in length, under the highest point of land, at a depth in many parts of 200 feet. Crowds came from all parts to witness this extraordinary work. "Gentlemen," says a writer in a newspaper of that date, "come to view our eighth wonder of the world, the subterranean navigation which is cutting by the great Mr. Brindley, who handles rocks as easily as you would plum-pies, and makes the four elements subservient to his will. He is as plain a looking man as one of the boors of the Peak, or one of his own carters; but when he speaks all ears listen, and every mind is filled with wonder at the things he pronounces to be practicable. He has cut a mile through bogs, which he binds up, embanking them with stones, which he gets out of other parts of the navigation, besides about a quarter of a mile into the hill Yelden, on the side of which he has a pump, which is worked by water, and a stove, the fire of which sucks through a pipe the damps that would annoy the men who are cutting towards the centre of the hill. The clay he cuts out serves for brick to arch the subterraneous part, which we heartily wish to see finished to Wilden Ferry,

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