BRIDGE OVER THE RIVER NENE AT PETERBOROUGH.

PLATES LXIX. AND LXX.

A NEW wrought-iron bridge is now (1872) being erected at Peterborough by Messrs. A. Handyside and Co., of Derby, from the designs of Mr. John Fowler. This bridge will replace the old wooden structure, which has for so many years served to carry the traffic over the River Nene.

The expenses of the present structure are being borne jointly by the two counties of Northamptonshire and Huntingdonshire, which are represented by their respective surveyors, Mr. Law and Mr. Hutchenson. When, in the course of the year 1871, it was decided that a new bridge should be thrown across the river, manufacturers' tenders and designs were solicited, but none of the plans submitted were satisfactory, while the estimates of all were considered excessive, and that such a conclusion was a just one is proved by the fact that the cost of the whole structure now being built is absolutely less than the outlay proposed in the earlier designs for the approaches alone.

The first attempt having failed, the Right Hon. Ward Hunt, who occupies an official position in one of the counties interested, recommended that Mr. John Fowler should be consulted, and this advice resulted in the present designs being prepared and carried out at a cost of only 5000L., including approaches. It would be difficult to find an example of a bridge in which greater skill had been employed in the combination of harmonious design and richness of details, with rigid economy.

The bridge, the general elevation of which is shown in Fig. 1, Plate LXIX., has the appearance of an arched structure in three spans, but in reality it consists throughout of continuous girders, in which the centre openings are made to balance the smaller side spans, the latter acting as cantilevers, so that no weight is thrown upon the abutment, as would have been the case had an ordinary form of construction been adopted. By this arrangement the abutments have been made extremely light, and their cost has been reduced to a minimum.

The total length of the structure between the faces of the abutments is 150 ft., divided into three openings; two of 37 ft. 6 in. each, and one of 75 ft., measured from faces of abutments to centres of piers. The total width is 30 ft., divided into a carriage way 21 ft. wide, and two footpaths 4 ft. 6 in. broad each.

Figs. 12 to 16, on the present page, show sections and elevations of the abutments. It will be seen from these views that the abutments are supported on round piles, 12 in. in diameter, and driven 4 ft. apart from centre to centre in one direction, and 3 ft. apart in the other. This gives only two rows of piles, excepting at the sides, where a third row formed of three piles is driven, as shown. Altogether, there are twenty-six of these 12-in. piles under each abutment, driven down to the rock, and supporting the mass of concrete of which the abutment is formed.

On the face, the abutments are 37 ft. wide, irrespectively of an increased width of 12 in. on each side given to the lower courses, making the total breadth of the abutments immediately over the piles 39 ft. In the same way the thickness is 9 ft. over the piles at the sides, and 6 ft. at the centre of the abutment, reduced to 7 ft. and 4 ft. at the water level, as shown in the plan, Fig. 16, and the sections, Figs. 12 to 14. The width of the side blocks