which, as we have seen, is beyond the ordinary limit of size; while on the other hand, the Isometrical might be increased very considerably in span before the limiting size of 2"½ would be required.

The above results are but the reduction to figures of the general conclusions arrived at in the earlier part of the discussion, and although they are confined to but three systems of wooden bridges, it is believed that sufficient evidence has been deduced to establish the claim of the Isometrical Truss to the first position among structures of this class.

Although our remarks have been confined to two prominent types of wooden bridges, by way of comparison, the same conclusions will apply to structures in iron possessing the same general features. Thus, for example, in the double system of wrought iron columns and diagonals made use of by Mr. Linville in his magnificent bridge across the Ohio at Steubenville, involving a central span of 320 feet, and still later, in the Connecting Railroad bridge across the Schuylkill at Philadelphia of 250 feet span, we find the vertical members of the Whipple repeated, to which, in a great measure, may be attributed the excessive expenditure of 31½ per cent. of material over the Isometrical. It is true, however, that the introduction of a double system permits an economy of material in the web, over what it would be practicable to effect in the single system of Fig. 10, by enabling the angle between the diagonal and vertical to be increased to its most economical limit, or 55° very nearly. Still another advantage is effected by this double system, the importance of which has been fully discussed in the previous comparisons, namely, the increased facilities for long spans, and in this respect the Isometrical has only a very slight advantage over the Linville truss. For the purpose of instituting an economic comparison between these two bridges in iron, a Linville truss has been arranged and calculated, as in Fig. 11, having the same general data as before mentioned; and one word in this regard, before passing to a comparison of figures. In order to prevent a multiplicity of diagrams, the same height