

Newark Dyke Bridge, as erected.

Span, 240 feet 6 inches. Weight, including bearings, 292 tons, for a length of 254 feet.
Which shows a balance 17 tons in favour of the Victoria tubes.

The Newark Dyke Bridge is only 13 feet wide, while the Victoria Tube is 16 feet, having a wider gauge railway passing through it.

This is a very important case, as the spans and depths are all but identical, and it will therefore enable you to form a judgment upon that point which has caused so much controversy at the discussion alluded to. It is true that in the Newark Dyke Bridge a large proportion of the weight is of cast-iron, a material I have frequently adopted in the parts of tubular bridges subjected to compression only, but from its brittle character I should never recommend it for exportation, nor for the parts of a structure that are liable to a lateral blow.

It has been suggested that there is much convenience in the arrangement of the trellis or "Warren" bridge, as it may be taken to piers and more conveniently and economically transported over-land than "boiler plates;" this may be correct under some circumstances, but it cannot hold good for a work like the Victoria Bridge over the St. Lawrence.

I am aware that girders upon the "Warren" principle have been adopted in India, and I am not prepared to call in question the propriety of their application in certain cases; but what I have been aiming at in these observations is, to prove to you that no economy over the plain tube can be effected in the case of the Victoria Bridge. I may add, that it has sometimes been urged that the workmanship in trellis or "Warren" girders is of a less expensive character than that required in tubes. I am bound to confess my utter inability to understand such a statement; for, after many years of practical experience as a manufacturer of iron work of every description, I do not know any class of workmanship that bears so small a proportion to the value of the material as "boiler-plate" work. If there be any difference in the cost, it ought certainly to be in favour of tubular beams.

Another example may be mentioned of a tubular beam, somewhat similar in dimensions to the last described, and one which is actually erected on a continuation of the same line of railway as that on which the Newark Dyke Bridge is situated, namely, over the river Aire, at Ferry Bridge. Although the similarity is not so great with this as with the Victoria Tube, yet I believe it is sufficiently so to form another proof that the advantage is in favour of the solid side.

As before:—

Newark Dyke Bridge.

Span, 240 feet 6 inches. Weight, 292 tons.

Ferry Bridge.

Span, 225 feet. Weight, 235 tons.