so confined to technicalities that I thought the general public would not care about any more of it, and I shall endeavour to dispense with them as far as possible, avoiding useless twaddle.

My experiences in Iron Bridge building date back to the "Britannia tube." The "Conway" had already been tried as a test or confirmation of the designer's ideas, with perfect success.

There can hardly be said to be any system of English or American bridge designs as such. Before building the Saltash Bridge, Brunel gave great attention to the subject, and his ideas have not been much improved upon to date in any country.

All the bridges (iron) in the world of any size could be counted on the fingers in the year 1849, and, taking the life of an ordinary bridge at 300 years, it is too early to form opinions as to stability, &c., when but very few have been erected in 50 years.

England, until quite recently, had but very few bridges of size; indeed, there are no rivers to bridge over, save tidal ones with cheap water carriage and easy foundations—but there are some fine viaducts with no foundations to speak of.

It is a manifest absurdity to compare bridges designed and constructed in England or designed for construction abroad—in Egypt, India, the Colonies, &c., with bridges designed for construction in the States and American Republics generally. For the following reasons: First, all railway bridges erected in the British Islands have to be under state supervision and come up to a certain standard of strength. As a rule transit is cheap, as well as skilled labour, whilst timber is dear. Experience shows that the most suitable superstructure as well as the most economical, is some form of "girder" according to span, plain, lattice, bow, chord, inverted, or direct suspended, &c., weight of material being generally taken to stand the lateral pressure of the moderate gales of the home latitude, whilst special provision is made in the case of tropical climates. Secondly, bridges designed in England for erection abroad are made to be put together by unskilled labourers, who frequently cannot count more than five without the use of both hands—and not one in a hundred has any conception of numbers above twenty. None can either read or write. Hence the necessity for some simple form that will stand rough usage and can be launched over the piers from the banks without any scaffolding, &c. "Girders" again, are dragged to the spot by mere strength. Some of the best railway bridges in India, and largest in the world at the time, were so placed in position. Thirdly, in the States and Canada there is no such thing as unskilled labour—every man can read, write, and count even up to a thousand without using his fingers; use an axe, saw, hammer, &c.; and hence greater liberties can be taken over design than can be allowed where the superstructure has to be put in position by men who never saw a piece of iron larger than a plough point, which they carry in their hand, and make a new plough every time they have occasion for one.

After all the superstructure of an iron railway bridge is of comparatively little moment; it is the foundations first, and piers after, that are of most importance. With these the designer has but little to do, and the local engineer everything; he has to watch day and night and carefully surmount