No. 3 should be twice the strength of brace No. 2, and three times the capacity of brace No. 1, and the same rule is equally applicable to the rods connecting the chords. This disparity of pressures will be greater as the spans are increased in length.

To remedy this defect various expedients have been resorted to; heavy bolsters have been used, extending some distance from the points of support, spur braces have been applied from the masonry to the lower chords, and in some cases, they have been extended to the upper chords; arch braces have also been introduced, from the lower to the upper chords, and iron rods have been added, which were placed diagonally from the ends and top of the truss, to a point upon the lower chord at some distance from the masonry.

It is worthy of remark here, that although this peculiar mode of action has been long known, as is evident from the various means adopted to overcome the same, it is nevertheless remarkable, that it is only of late years, that the real cause has been discovered.

Upon examining many structures now in use, one of two things will generally be found, viz., that the sustaining braces and their connections are larger toward the centre of the bridge than required, or that they are smaller towards the ends than they should be, and it is only necessary to keep in view this simple principle of the increased vertical strain, in order to arrive at correct conclusions in regard to the merits of any bridge truss, so far as this particular point is concerned.

A point has now been reached in the discussion of this