Finally, considering the difficulty of securing the most efficient thrust action of the curved members of the arch, the serious disturbances as to the action of the diagonals composing the web system, occasioned by changes of the temperature, together with the extra weight and strength of piers and abutments to withstand the horizontal thrust of the arches, it seems reasonable to conclude that the erect metallic arch bridge will only be adopted under rare and peculiar circumstances; and that in such cases, the plans should be subjected to especial examination and investigation.

Truss bridges possess the advantage of having all the forces in operation, except the vertical action of weight, and the opposite resistance of the end supports resisted by means of members contained within the structures themselves, and composed of materials of so nearly uniform expansibility by heat, that no important disturbance in the relations of the different members, can be produced by changes of temperature. Plans, also, may be so arranged as to secure a near approximation to uniform maximum stress upon all the parts; at least, to a much greater degree than seems practicable in the case of the arch without chords.