PREFACE.

It will be the effort of the writer in the following pages to point out the peculiarities of material and construction involved in the designing and building of "Iron Highway Bridges," in the hope that a dissemination of their scientific principles in a popular form, will bear fruit in a more thorough appreciation of a noble art, and in elevating the standard of requirements of this very important class of public works. The subject has been divided into two parts, each complete in itself; the one general and descriptive, and the other analytical. The former is peculiarly intended to present to public committees entrusted with the letting of bridge contracts such information as they ought to possess, while the latter is offered as an aid to engineers not experts in this branch of the profession, and yet who are often called upon to act as inspectors. The second part develops the strains in the ordinary forms of beams and trusses in an elementary manner, the principle of the lever being