

## PREFACE.



IN the course of a friendship which began during my sophomore year in college, when I spent a portion of my summer vacation in his office, and which has grown more intimate with the passage of years, the papers which Dr. Waddell has written have, from time to time, come into my hands. Many of them are addresses which have reached a very limited audience; others have been published by the societies for which they were written and are in possession only of those who were members of the societies at the time of publication; and it has appeared to me that to publish them in book form and make them generally available would be a work of material value to the profession. In my college days I searched the library with small success for such information relating to the work that comes after graduation, as may be found in several of the addresses; and some of the strictly technical papers, with their discussions, have since proved exceedingly helpful to me. Since the publication of technical books is rarely profitable, the preparation of the volume has been purely a labor of love, but I shall feel well paid if the book proves of material assistance in the cause of engineering education, to the young man just entering upon his professional career, and to the engineers in the several lines of which the papers treat.

RAILROAD DRAINAGE and NOTES ON RAILROADING contain much valuable information that is not to be found elsewhere in print; indeed, it is surprising that almost nothing relating to railroad drainage, and very little relating to the practical work of a railway survey, has been published.

THE ADDRESS TO THE KOGAKU KYOKAI (Japanese Engineering Society) is of high historical interest, for it contains a brief but clear view of the condition of the sanitary, manufacturing, and transportation facilities of Japan only twenty years since. It also outlines a future policy for the engineers of that country.