

longer the material of which bridges are constructed, hence the book is of no further service to the profession.

Immediately after the publication of this book, the preparation of "A System of Iron Railroad Bridges for Japan" was begun at the request of the University authorities. This Monograph was published early in the summer of 1885, and immediately gave rise to a spirited controversy, for its author had severely criticised the methods of English engineers, as they were exemplified in the Japanese railway bridges, most of which were of English design and fabrication. The "Japan Mail" reviewed the Monograph July 16th, 1885, and immediately, not the Monograph but its author, was bitterly attacked in numerous letters addressed to the "Mail." Throughout the controversy, which continued for nearly a year, the English engineers gave evidence of their professional weakness by avoiding as far as possible a technical discussion of the subject and by confining their arguments to personalities and to generalities, many of which were half-stated or purposely misleading. In his letter of October 7th, 1885, Dr. Waddell states: "Into the merits of the case not one of the writers of the letters in the 'Mail,' attacking my book, has dared to enter. An open, scientific discussion is, apparently, the very last thing my opponents desire. They know that it would make patent to the world the radical deficiencies of the old English system of bridge building." An editorial note adds, "We have published a number of letters—so many that our readers must be weary of the subject—and yet, as Mr. Waddell says, the point at issue is as far as ever from settlement." Thus for three months the discussion had been almost venomously personal on the part of the English engineers. A number of Japanese engineers, an American engineer, Professor W. C. Kernot of the University of Melbourne, and Dr. Waddell carried on the scientific side of the argument, which continued for several more months, but gradually took on a more technical character and resulted in completely establishing the soundness of the memoir. It was a pretty quarrel in which a young man of but ten years' experience won over many old and long-established engineers, but practice has changed so greatly in less than twenty years that its technical interest is small now.

In the spring of 1886, at the end of his fourth scholastic year of Japanese service, Dr. Waddell determined to return to America. He was handsomely treated by the University authorities, and still has in his possession many highly prized presents from Japanese friends. Later the Emperor decorated him by bestowing upon him the order of the "Rising Sun," with the rank of Knight Commander.

Before Dr. Waddell left Japan, Professor Burr, who was then Engineer for the Phoenix Bridge Company, arranged for him to settle in Kansas City, Missouri, as the Western representative of the Phoenix Bridge Company and the Phoenix Iron Company. Though his efforts were, in the main, to be devoted to the interests of these companies, he retained the privilege of prac-