mock modesty when striding to the front in all the glory of official print to do battle with that many-headed dragon, the British and European Railroad Bridge Interest. He claims the title of Hercules, conveying thereby a gentle hint of his own prowess, and a neat insinuation of certain stables which require his superhuman strength to cleanse.—I am, Sir, your obedient Servant,

Tokyo, August 1st, 1885.

Not a Bridge Builder.

(August 12th, 1885.)

Sir,—Your issue of 4th inst., containing a criticism of my treatise on "A System of Iron Railroad Bridges for Japan," by a gentleman who is "Not a Bridge Builder," has just reached me. Although several books and papers, to which I would like to refer, have been left at home, I will endeavour to answer him, taking up the various objections in the order in which they were raised.

The first item is the cost of bridge iron, in which he makes me appear to have contradicted myself by first stating it to be 4½ cents per pound in America and 4 cents in England, then saying that American manufacturers are underselling the English by three or four pounds sterling per ton. The last statement is not mine, but was made by an American engineer in a letter to me received after the MS. had been sent to press: this is clearly indicated in the footnote on p. 10. The fact was a surprise to me, for I had always considered English iron to be cheaper per pound than American iron. The authority, however, cannot be doubted; for the writer of the letter is Wm. H. Burr, C.E., engineer to the Phoenix Bridge Co., and author of two standard works on engineering subjects. My interpretation of the statement is that English manufacturers cannot afford to bid as low on bridges of American design as can American manufacturers, the reason being that the latter are used to the work and have all the appliances. Plate girders, I acknowledge, can be built more cheaply in England than in America.

Next, as to the quality of English ironwork. I can give no opinion as to the quality of workmanship on bridges in England, not having been in that country for a number of years; but, if I am to judge of English ironwork by the specimens on the Japanese railways, I can unhesitatingly condemn it. Ironwork of as poor quality may be found in many of the cheap highway bridges of the United States, but no first-class American manufacturer would allow such work to pass out of his shop. In the Arakawa and Karasugawa bridges of the Tōkyō-Takasaki Railway the bottom chords are so warped and twisted that to make the floor beams bear on both sides of same, shims or filling pieces of ½ or ¼ inch iron had to be used; and there are open joints in the top chords that even paint will not hide. Concerning these points, I refer to Mr. Takanobu Kônô, the engineer who erected both bridges, and to Mr. Mouri, engineer in charge of the railway.

Concerning the quality of American ironwork, let me quote from my