learning from the other. For myself, I should be ashamed to denounce American engineers, or American methods, because these were not what I had been accustomed to.

Mr. Waddell takes a different line. Addressing the Japanese engineers, he says of the bridges in this country: "I have little hesitation in expressing my opinion thereon, knowing that the designs are not yours, but are the work of some of the present and former foreign employés of the Railway Department;" and again, "The trouble with most English bridges, and consequently with those of this country, is that they are designed by railway engineers, who have not made a special study of bridge designing, and are therefore incompetent to do the work entrusted to them."

Here we have a sweeping charge of incompetency made against English railway engineers as a body, on the false ground that they do not make a study of bridge-work. Coming as it does from a professor in so small a way of business, it is a mere impertinence; one that American engineers of good standing would probably be the first to regret.

Mr. Waddell is evidently ignorant of the fact that the designer, whom he tells us, is in America employed by the manufacturer, is in England, either a man in private practice, or else he is on the staff of the railway office. Most large railways have several men in their employ who are competent to design, and do design, any girder work that is wanted. What he tells his readers is not a special study, is, with very many men, I do not say with all, a matter which they take especial pains with, as it leads to advancement.

It is just a case where American and English habits differ. By all means let the Americans follow the course which they prefer. One reason for its not being followed in England is, that the designer may be an independent person without bias towards the contractor. Certainly in England he never has to use his education as a means for advertising the contractor's wares.

Mr. Waddell's tone as regards English engineers is unfortunately fairly represented by the two passages I have quoted; he writes in a bitter spirit of depreciation all through. For American methods, and his own especially, he can not say too much. He tells his readers, in his own idiom, that "he has not an axe to grind." It looks very much as if he had. He says on page 10: "I have no objection to giving any of you individually my opinion as to which shops in America do the best work." No doubt. The shops would feel grateful, and might even allow their gratitude to take a practical form. As Mr. Waddell is leaving Japan, his advice on this subject, if it is ever asked for, would certainly ensure him a warm welcome on the other side the Pacific, from the parties who derived benefit from it.

Leaving his comparisons between English and American girders, and turning to his denunciations of the bridges in this country, we find him, as might be expected of an outsider to the Department, not acquainted with what is being done, exceedingly weak in his facts. I am not disposed to correct them for him, but I may notice that where on page 5 he writes:—"The first grave error to which I would call your attention is, that both for economical and prudential reasons the spans are too short, the superior limit being 100 feet." Well, that used to be the limit;