engineer and technical writer is not, therefore, likely to suffer from attacks such as that of Mr. Pownall. There is one point, though, that I must not fail to notice, even if it does come under the head of "personality": I refer to the insinuation that I am in the pay of the American manufacturers. It is utterly untrue in every respect. Even my connection with Raymond and Campbell cannot be so interpreted, for they design and erect, but do not manufacture bridges: they stand in relation to the work in the same position as does the Japanese Government.

The drawings in Vol. II. do not "owe their origin to the black-board in the class-room," but are the result of five years of study, research, and practice in the designing of bridges.

Mr. Pownall cannot be better informed concerning American engineering work than I am, nevertheless he tells your readers that the Americans are reducing the depths of their trusses. On the contrary, American engineers have determined the most economic depths, and employ them whenever practicable.

Concerning the proper limiting length of span, Mr. Pownall has changed his mind within the last two years; nevertheless my statement that the limiting length is one hundred feet is perfectly correct, for there is no existing span longer than that on any of the Japanese railroads excepting the Poronai. I am curious to know whether the glaring defects of design in the one hundred feet spans will appear in the new two hundred feet spans; for the importance of such errors increases very rapidly with the length of span.

If the new bridge on the Utsunomiya line be erected before I leave the country, I will make a journey to see it, and will, if you so desire, send you my opinion thereon.

I can explain how the derailed carriage passed over the Kansaki-gawa bridge. On the Kobe and Otsu Railway the rails are supported by wooden stringers to which they are spiked. These stringers are, say, fourteen inches or more in width. Now if a carriage be derailed while passing over the bridge, the traction of the preceding car will cause the derailed wheels to keep close to the rails; and, if luck befriended the train, it may pass over the structure without having the derailed wheels deflected from the track more than half the width of the stringer. But if the locomotive be derailed, there is nothing to prevent it from running off the edges of the stringers and destroying the bridge. On such bridges as the Arakawa and Karasugawa, where the rails are supported by small cross-ties or sleepers, spaced at least thirty inches from centre to centre, a derailed car would have no chance whatsoever of passing over the structure, much less would a derailed locomotive.

I am glad to be informed that derailments on Japanese lines of road are possible; the gentleman who is "Not a Bridge Builder" led me to infer that such an occurrence is impossible, and that it is folly to provide for it.

I should be pleased to be informed how an inner guard rail of the same height as the main rails could "cause danger and not prevent it." Surely the conditions in this respect in Japan cannot be very different from those in America, where inner guard rails are common.

Next let me inform Mr. Pownall that the fact of certain bridges having