(Sapporo) was in danger. The Toyohashi was a raging, muddy, destructive agent studded with floating timber, bush-wood, up-rooted trees, and other débris. In spite of the efforts of the men placed on the 150 feet span to fend off and to push under the drift, it steadily accumulated under the bridge and on the current side of the bridge. During the early morning the track and all the banks for nearly half a mile on each end of the bridge had been swept away, thus leaving the piers and bridge isolated in the broad stream. About 12 (noon) o'clock the bridge was buoyed up from the coping stones, and on the mass of drift materials it floated from the piers. The men on the bridge when it moved from the piers succeeded in reaching the upper works of the fifty feet span which had remained firm. The east end of the moving span encountered firm resistance about 200 feet below its pier, at which time the other end swung down the stream. When the bridge, still keeping its form, went under, it was turned partially on its side and soon became filled with drift and sand. It was estimated by the Japanese engineer present that the current near the centre of the span moved at the rate of 26 feet per second. After the flood had subsided it was found that the coping stones of the piers had been three feet and seven inches under water.

"The piers, not having been injured, have been built up to a new level. The bridge having been removed from the bed of the river was found to have had very few parts ruined, though many of the links and rods were bent and twisted. During the past month (Nov. 1882) the links and rods have been straightened, parts of the bridge have been re-riveted and re-adjusted, and a few parts replaced by material from Tōkyō. It is now expected that the bridge will be in position again in January, 1883."

The bridge was tested the last week of December, 1882, and found acceptable. It has been in use since. No repairs have been needed, painting excepted, since it was replaced. Coal-trains of from fifteen to eighteen cars (eight tons of coal per car) pass over the bridge at from half to three-quarter speed daily.—I remain, Sir, yours truly,

Sapporo, August 12th, 1885.

[We have before us a photograph of this bridge as it now stands. It is a handsome, solid-looking structure.—Ed. J.M.]

(August 31st, 1885.)

Sir,—In your issue of the 12th instant, Mr. Waddell, of the Tokio University, refers the public to me as responsible engineer for the alleged flaws in the details of the Arakawa and Karasugawa Bridges. I decline to be so referred to. I was not the chief engineer responsible for the erection of those bridges; but, as far as I know, they are safe and satisfactory. Mr. Alexander, of the Imperial College of Engineering, Tokio, has advised me to defend myself and countrymen from Mr. Waddell’s attack, which I