trary, the suspension bridge would cost considerably more, in consequence of being mostly of wrought iron, while the truss-bridge is composed of one half cast iron, which does not cost more than half as much for the same quantity.

Besides this, the towers to support the suspension bridge, and the pits for securing the guys, add greatly to the expense.

I conclude then, that unless some better and more economical plan can be devised for adapting suspension bridges to R. R. purposes than I have yet met with, the truss bridge is decidedly preferable for any thing less than 500 feet, unless it be in very peculiar circumstances, and such as have never come within my observation. If cases should occur warranting attempts to construct R. R. bridges of greater stretch than 500 feet, the suspension might deserve a preference. But such will occur so rarely, if at all, that I choose to leave them for the special investigation of those into whose hands their management may fall, rather than devote to them, in this work, the time and space which I consider would be more profitably occupied in matters more within the range of ordinary practical bridge building.

I will here make one remark in reference to the proposed "Niagara Suspension Bridge."

I have seen it stated that the plan proposed is, "the combination of the suspension chains, (or cables,) with a heavy cast iron arch," which, it is thought, will obviate the difficulties of undulation.

How much or how little this may differ from a truss bridge, I can not judge, without a more full description of the plan than I have yet seen. I will hazard the opinion, however, that the modification of the truss shewn in Fig. 26, is better suited to the purpose than any combination of arches and suspension chains that can be devised.

The banks of the river being very high, the bridge would be so placed as to have the rail track on the top,