while a passage-way for carriages and common travel could be arranged underneath, perfectly secure from all danger, except, perhaps, that of frightening horses by the passage of trains overhead. It would probably be best, however, not to suffer horses to go on to the bridge when trains were in hearing.

WOODEN BRIDGES.

Preliminary Remarks upon the Strength of Timber, &c.

LXVI. The qualities of wood as a building material, have been extensively treated of by authors, with whose works the public have long been familiar, with a degree of ability and research to which I can make no pretensions. I shall therefore only simply state the conclusions I have arrived at, from reading and observation, with respect to the average absolute strength, (positive, negative, transverse, and to resist splitting, in certain cases,) of the timbers principally in use for building purposes, as also, the forces they will bear with safety in various circumstances. At the same time, I shall, of course, leave it to others to adopt my conclusions for their own practice, or to modify or correct them, according as their greater experience or better judgment may dictate.

Pine timber in this section of country, is perhaps to be ranked as the most valuable timber for building, in use.—White oak and some other varieties are preferred for some purposes, as being harder and somewhat stronger, and especially better calculated to bear a negative or crushing force, whether acting parallel with, or at right angles to their fibres. But in what follows, I shall principally have reference to the ordinary white pine of this country.

Some writers and experimenters estimate the absolute positive strength of pine, at 10,000 lbs. to the square inch of cross section, and the safe practical strength at one-