BRIDGE MATERIALS.

Country, is of recent date, and but little has been experimentally proved in relation, to their cost and qualities.

XXXIII. This much, however, my own experience has demonstrated. Having received Letters Patent for an "Iron Truss Bridge," upon the arch truss plan, and constructed two bridges thereon, over the Enlarged Erie Canal (of 72 and 80 feet spans), one of which has been in use for six years, it may be regarded as a demonstrated fact, that bridges may be sustained by iron trusses. It has also been shown that the cost of the above class of bridges, is only about 25 per cent more than the same class of bridges of wood, as heretofore built, under the most favorable circumstances, upon the Erie Canal. That the iron portion, constituting some three-fourths of the whole, as regards expense, in the iron bridge, gives fair promise of enduring for ages, while the wooden structure can only be relied on to last eight or ten years.

Upon these facts, experimentally established, I found the following comparison:

A common road bridge of 72ft. span (the usual length for the enlarged Erie Canal), will cost, with iron trusses:

For 7,000 lbs. of cast iron at 3cts., .................. $210.
" 6,000 " " wrought iron, manufactured for the work, at 7cts., .......... 420.
" Timber, labor and painting, .................. 230.
" Superintendence and profit, .................. 80.

Whole first cost, .................. $940.

$175 will renew the perishable part once in 9 years, to produce which, at 5 per cent compound interest will require capital of, 320.

Total for a perpetual maintenance, $1,260.