If the first with the fourth, the strength appears as the square of the depth nearly, the breadth and length being the same.

If the first with the fifth, the strength will be seen to be nearly as the length, inversely, the breadth and depth of each piece being the same.

If the fifth with the seventh, the strength will appear to be nearly in proportion to the breadth, multiplied by the square of the depth, the length being the same in both.

If the first with the seventh, the strength is as the square of the depth, multiplied by the breadth, and divided by the length.

Experiments 1st and 2d show the increase of the strength, by fastening the ends, to be in the proportion of 2 to 3. Experiments the 5th and 6th show the same thing.

By the whole of the above experiments, it appears that the rule founded on the Galilean hypothesis, for finding the comparative strength of timber, is nearly true.

M. Buffon and M. du Hamel, also men of acknowledged abilities, were directed by the government of France to make experiments on this important subject; and were supplied with ample funds and every suitable apparatus they could need; they also had the choice of the best subjects in all the forests in France.

The reports of M. Buffon may be found in the Memoirs of the French Academy, for the year 1740, 1741, 1742, and 1768; and those of M. du Hamel, in his work, *Sur l' Exploitation des Arbres, et sur la Conservation et la Transportation de Bois*.

We shall now give a brief account of M. Buffon's experiments on timber.