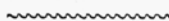


# RESISTANCE OF TIMBER

AND

## OTHER MATERIALS.



CALCULATIONS for the purpose of determining the relations which the dimensions of timbers should bear to the weights which they are required to sustain, are based upon several hypotheses which experience has proved to be correct within the usual practical limits.

The most important of these are—

1. The fibres are susceptible of compression and extension.
2. The degree of extension or compression will be directly as the force by which it is produced.
3. So long as the elasticity remains unimpaired, or so long as the fibres may be considered as perfectly elastic, the force required to produce a given extension will be equal to that which produces an equal compression, and the resistances to these forces will be likewise equal.

These hypotheses will be applied to the most simple case of flexure, which is, that of determining the relations between an applied weight and the dimensions of a timber which are necessary to sustain it when one end is fixed and the other unsupported.