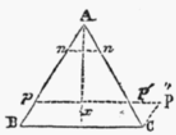
will be $\frac{w}{2l}x^3$, and the whole deflection will therefore be $\left(w x - \frac{w}{2l}x^3\right)$. The expression $\frac{w}{2l}x^3$ is represented by the area $A\ p'\ n'\ c$, which we have already shown to be $\frac{1}{8}$ rectangle. And hence, the deflections will be as $\frac{1}{3} - \frac{1}{8} : \frac{1}{3}$, or as 5 to 8.

STRENGTH OF PARTICULAR SECTIONS.

PROP. 13. *Strength of a triangular section.*

As this case is more curious than useful, we will simply indicate the mode of procedure without entering into its full investigation.

FIG. 27.



Let $A\ B\ C$ represent the section at the point of greatest strain
h = height and b = base of triangle, $p\ p'$ neutral axis
R = the maximum strain upon a superficial unit.

The strain varying as the distance from the neutral axis, it will be $= R$ at the point A, and at any point of $B\ C$ it will be found thus, $(h - x) : x :: R : \frac{R\,x}{h - x}$. The strain upon the upper part of the section will be represented by a pyramid, whose base is $A\ p\ p'$, and altitude R; upon the lower part, it will be the wedge-formed solid, whose base is $p\ p'\ B\ C$, and altitude $\frac{R\,x}{h - x}$. The volume of the solid will be the difference between the wedge $p\ p''\ B\ C$ and pyramid $p'\ p''\ C$.

By equating the moments we obtain the value of x, and, consequently, the position of the neutral axis; this value substituted in the expression for the resistance of the section will give its value in terms of b and h.