Then, by similar triangles, we have

$$SQ.PR = SR.QT.$$

From these it follows directly that

$$\frac{P}{SP^3}\Big/PR = \frac{Q}{SQ^2.SP.PR} = \frac{Q}{c^2SR.QT}.$$

Thus
$$\Sigma\left(\frac{P}{SP^3}\cdot\frac{1}{PR}\right) = \frac{1}{c^2SR}\Sigma\left(\frac{Q}{QT}\right).$$

The first member is the potential, at R, if the surface-density be everywhere inversely as the cube of the distance from S. The second is the potential, at R, of a mass *concentrated at S;* since $\Sigma(Q/QT)$ is constant, being the potential of the uniform shell at an internal point.

The mass of the centrobaric shell is

$$M = \Sigma\frac{P}{SP^3} = \Sigma\frac{Q}{SQ^2.SP} = \frac{1}{c^2}\Sigma\frac{Q}{SQ}$$

so that the expression for its potential at R is

$$\frac{\Sigma\frac{Q}{QT}}{\Sigma\frac{Q}{QS}}\cdot\frac{M}{SR}.$$

While S is inside the shell, the first factor is unity; otherwise it is directly as the ratio of the distance of S from the centre of the sphere, to the radius. Thus we prove by elementary considerations the important propositions enunciated above.

On Wireless Telegraphy and High Potential Currents.

By J. R. Burgess, M.A.

Sixth Meeting, 12th May 1899.

Alexander Morgan, Esq., M.A., D.Sc., President, in the Chair.

Discussion on "The Treatment of Proportion in Elementary Mathematics."

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