The form 40 (1) is convenient for calculating this series. We obtain

$$(1)\quad W=\frac{4}{\pi^2}\int_0^\infty \cos\lambda(z-z')d\lambda$$

$$\int_0^\infty e^{\ s\pi}\sinh s\pi\frac{\cosh s(a+\phi'-\phi)}{\sinh sa}G_{u}i\lambda\rho G_{u}i\lambda\rho' ds$$

$$o<\phi-\phi'<2a.$$

(2) From this we deduce as usual

$$W=\frac{4}{a}\int_0^\infty \cos\lambda(z-z')d\lambda\sum_m{}'\cos\frac{m\pi}{a}(\phi-\phi')G_{\frac{m\pi}{a}}i\lambda\rho\, J_{\frac{m\pi}{a}}i\lambda\rho',$$

$$\rho>\rho'.$$

$$(3)\quad W=\frac{2\pi}{a}\int_0^\infty e^{-\lambda(z-z')}d\lambda\sum_m{}'\cos\frac{m\pi}{a}(\phi-\phi')J_{\frac{m\pi}{a}}\lambda\rho\,.\,J_{\frac{m\pi}{a}}\lambda\rho'.$$

$$z>z'.$$

The functions T and W coincide when $a=\pi$.

42. The relation of the solution of Green's problem to the general problem of determining a potential function taking an arbitrary value at a given boundary is well known. When this paper was commenced, it was intended to consider in some detail, and to illustrate from the foregoing solutions, certain questions arising in this connection, particularly with reference to modes of expansion of an arbitrary function. Since, however, the paper is already sufficiently long, these questions must be left over for the present, but I propose to deal with them in a future paper, which I hope to have the privilege of reading to the Society at one of next session's meetings.

On the Discriminant of the General Homogeneous Quadric.

By Chas. Tweedie, M.A., B.Sc., F.R.S.E.

A note on change of Coordinate Axes.

By Prof. Steggall.

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