

applied to derive the general equation of condition given by (20). Suppose the plane of incidence is taken as the plane of a system of rectangular axes with its origin at the point A where the straight line LL' (x -axis) meets the refracting surface. Let the foot of the ordinate of the incidence-point P be designated by D, so that $x = AD$, $y = DP$, and $y \frac{dy}{dx} = DG$. Putting $m = LD$, we may write: $l^2 = y^2 + m^2$; and since

$$g = -\left(m + y \frac{dy}{dx}\right)$$

we obtain according to equation (24) :

$$n'^2 g'^2 (y^2 + m^2) = n^2 l'^2 \left(m + y \frac{dy}{dx}\right)^2 ;$$

which may be arranged as a quadratic in m as follows :

$$\begin{aligned} (n'^2 g'^2 - n^2 l'^2) m^2 - 2n^2 l'^2 \left(y \frac{dy}{dx}\right) m \\ + n'^2 g'^2 y^2 - n^2 l'^2 \left(y \frac{dy}{dx}\right)^2 = 0. \end{aligned}$$

This equation is precisely equivalent to (20); as may be seen by writing $(s+x)$ in place of m , n in place of n'/n , and $-z$ in place of g' .

NEW YORK, N. Y.

MARCH 1, 1922.

The Centenary of the Discoveries of Ampère. (*Le Matin*, Nov. 25 and 26, 1921.)—On November 24, 1921, in the great amphitheater of the Sorbonne, France celebrated in a worthy manner the scientific achievements of her great son whose name has been given to the unit of electric current. The President of the Republic presided and addresses were made by Paul Appell, Paul Janet, Raynauld, Legouez and Boucherot. The tribute of the United State was given—and in the French language—by Dr. C. O. Mailloux, member and official delegate of The Franklin Institute, Philadelphia.

The four thousand persons present found interest in a table a metre square, on which was a complex of rods and wires. Though the humble product of a village locksmith it was none the less from the laboratory of Ampère to which so many of the applications of electricity can be traced.

The ceremonies were continued the next day at the Conservatoire des Arts et Metiers under the charge of Painlevé. He emphasized the discoveries made in the art of telegraphy in France in succession to the work of Ampère.

G. F. S.