1) the formula (1) or

$$y = e^{\alpha+\beta x+\gamma x^2+\cdots-\varkappa x^{2r}},$$

2) the products of integral algebraic functions by a typical function or (6)

$$y = k_0\varphi - \frac{k_1}{\underline{|1}} D\varphi + \frac{k_2}{\underline{|2}} D^2\varphi - \frac{k_3}{\underline{|3}} D^3\varphi + \cdots, \qquad \varphi = e^{-\frac{1}{2}\left(\frac{x-m}{n}\right)^2},$$

3) a sum of several typical functions

$$y = \Sigma_1^r k_i e^{-\frac{1}{2}\left(\frac{x-m_i}{n_i}\right)^2}. \tag{14}$$

This account of the more prominent among the functional forms, which we have at our disposal for the representation of laws of errors, may prove that we certainly possess good instruments, by means of which we can even in more than one form find general series adapted for the representation of laws of errors. We do not want forms for the series, required in theoretical speculations upon laws of errors; nor is the exact representation of the actual frequencies more than reasonably difficult. If anything, we have too many forms and too few means of estimating their value correctly.

As to the important transition from laws of actual errors to those of presumptive errors, the functional form of the law leaves us quite uncertain. The convergency of the series is too irregular, and cannot in the least be foreseen.

We ask in vain for a fixed rule, by which we can select the most important and trustworthy forms with limited numbers of constants, to be used in predictions. And even if we should have decided to use only the typical form by the laws of presumptive errors, we still lack a method by which we can compute its constants. The answer, that the "adjustment" of the law of errors must be made by the "method of least squares", may not be given till we have attained a satisfactory proof of that method; and the attempts that have been made to deduce it by speculations on the functional laws of errors must, I think, all be regarded as failures.

VI. LAWS OF ERRORS

EXPRESSED BY SYMMETRICAL FUNCTIONS.

§ 21. All constants in a functional law of errors, every general property of a curve of errors or, generally, of a law of numerical errors, must be symmetrical functions of the several results of the repetitions, i. e. functions which are not altered by interchanging two or more of the results. For, as all the values found by the repetitions correspond to the same essential circumstances, no interchanging whatever can have any influence on the law of errors. Conversely, any symmetrical function of the values of the