there will be $s s_1 \dots\dots$ groups of such terms as (3). Still further, without having respect to the surds t, t_1, &c., there may be (Cor. 5, Prop. VI.: see more particularly the explanation presently to be given) m distinct groups such as (3): only (as has been proved) the nr functions in (3) are the only unequal terms in all the m groups On the whole, the series of cognate functions of $f(p)$, taken on a non-recognition of the surd character of those surds alone which are present in F, will embrace $m n r s s_1 \dots\dots$ terms, or $m s s_1 \dots\dots$ lines of terms such as (3), of which the following may serve as examples:

$$\left.\begin{array}{l} \phi_1,\ \phi_2,\dots\dots\dots\dots,\ \phi_{nr}; \\ \psi_1,\ \psi_2,\dots\dots\dots\dots,\ \psi_{nr}; \\ \phi'_1,\ \phi'_2,\dots\dots\dots\dots,\ \phi'_{nr}; \\ \psi'_1,\ \psi'_2,\dots\dots\dots\dots,\ \psi'_{nr}. \end{array}\right\}\dots\dots\dots\dots \quad (4)$$

The first of these lines is (3). The second is a cluster of terms, in addition to the nr terms of the first line, obtained without having respect to t, t_1, &c., and being a repetition of the values of the terms in the first line; for, in the mnr terms, obtained without reference to t, t_1, &c., the unequal terms which constitute the series (3) are all repeated (Cor. 5. Prop. VI.) the same number of times. The third line of (4) contains the terms in the first line, transformed by changing t into $z_1 t$; z_1 being an s^{th} root of unity, distinct from unity. And those in the last line contain the terms of the second line, transformed by a similar change of t into $z_1 t$. Now it can be shown that the terms of the third line are equal, in some order, to those of the first, each to each. For, since t, present in $F_1(x)$, disappears from F, it follows that the continued product of the factors of F, viz.: $F_1(x)$, $F_2(x)$, &c., remains the same when $z_1 t$ is substituted for t. That is, the factors,

$$x-\phi_1,\ x-\phi_2,\dots\dots\dots,\ x-\phi_{nr},$$

are the same, taken in some order, with the factors,

$$x-\phi'_1,\ x-\phi'_2,\dots\dots\dots,\ x-\phi'_{nr}.$$

Hence the terms in the third line of (4) are, in some order, equal to those in the first line, each to each. In the same way it may be proved that all the $mnrss_1 \dots\dots\dots$ cognate functions above described, are merely repetitions of the values of the functions in (3). Hence the terms in (3) are all the unequal cognate functions of $f(p)$, obtain-