and therefore x_n is a factor in $\psi(x_1, x_2, \dots x_{n-1}, x_n)$. Since ψ is a symmetric function, $x_1, x_2, \dots x_{n-1}$, must also be factors; and therefore $x_1x_2 \dots x_n$, which is equal to ${}_np_n$, is a factor. If this factor be divided out, the quotient will be a symmetric function, the degree of which will be less by n that of the given function. The above process may then be repeated with this quotient; and so on, till the degree is reduced to zero.

Since every (symmetric) function of a single x_1 is a function of ${}_1p_1(=x_1)$, it follows by induction that every symmetric function of n variables is expressible in terms of the n elementary symmetric functions.

The ordinary propositions about the weight and order of symmetric functions may easily be obtained from the above.

On laboratory work in electricity in large classes.

By Messrs A. Y. Fraser, J. T. Morrison, and W. Wallace.

Seventh Meeting, May 10*th*, 1889.

George A. Gibson, Esq., M.A., President, in the Chair.

Solutions of two geometrical problems.

By J. S. Mackay, LL.D.

The two problems are :—

1. *To divide a given straight line internally and externally so that the ratio between its segments may be equal to a given ratio.*