

processes of a mathematical aspect to deny that these are very remarkable principles. By way of instance, we select from the work under review the following problem, in which two premises are given. Let it be granted, first, that the annelida are soft-bodied, and either naked or enclosed in a tube; and, next, that they consist of all invertebrate animals having red blood in a double system of circulating vessels. Put

$$\begin{array}{ll} A = \text{annelida,} & s = \text{soft-bodied animals,} \\ n = \text{naked,} & t = \text{enclosed in a tube,} \\ i = \text{invertebrate,} & r = \text{having red blood in \&c.} \end{array}$$

Then the given premises are

$$A = vs \{ n (1 - t) + t (1 - n) \}, \dots\dots (25)$$

$$A = ir \dots\dots\dots (26)$$

Suppose the problem then to be: to find the relation in which soft bodied animals enclosed in tubes stand to the following elements, viz., the possession of red blood, of an external covering, and of a vertebral column. Professor Boole would doubtless have granted that this problem admits of being solved by what he calls the ordinary logic; but he would probably have contended that the ordinary logic does not possess any definite and invariable method of solution. A skilful thinker may be able to find out how syllogisms may be formed so as ultimately to give him the relation which soft bodied animals enclosed in tubes bear to the elements specified; but what of thinkers who are not very skilful? How are they to proceed? In Professor Boole's system, the process is as determinate, and as certain of leading to the desired result, as the rules for solving a group of simple equations in Algebra. Eliminate v , the symbol of indefinite quantity, from (25). Reduce (25), thus modified, and (26), to a single equation, by the method described in a previous paragraph. The equation is

$$A \{ 1 - sn (1 - t) - st (1 - n) \} + A (1 - ir) + ir (1 - A) + nt = 0.$$

Then, since the annelida are not to appear in the conclusion, we must eliminate A , by (22), from this equation. This will be found to give us

$$ir \{ 1 - sn (1 - t) - st (1 - n) \} + nt = 0.$$

And ultimately we get

$$st = ir (1 - n) + \frac{o}{o} i (1 - r) (1 - n) + \frac{o}{o} (1 - i) (1 - n);$$

the interpretation of which is: *Soft bodied animals enclosed in tubes*