an equation all of whose other terms are finite, this indicates that the quantity of which it is the co-efficient is zero. So, in the logical system, if, in any term of an equation obtained in the manner in which equation (20) has been obtained, the co-efficient be $\frac{1}{0}$, the corresponding constituent must be 0. These are certainly very remarkable analogies. But let us see what follows. We have first, from (20),

$$x\,(1-y) = 0.$$

Hence as the equation (20) describes the separate classes of which z consists, and as there is no such class as $x\,(1-y)$ in existence, the second term on the right hand side of equation (20) may be rejected. The third term also may be omitted, its co-efficient being zero. This reduces the equation to the form,

$$z = x\,y + \tfrac{0}{0}\,(1-x)\,(1-y):$$

which means, that beasts which chew the cud consist of the class $x\,y$, together with an indefinite remainder of beasts common to the classes $1-x$ and $1-y$.

Before leaving the subject of inference from a single premiss, we must say a few words regarding elimination; for though, in Algebra, elimination is possible only when two or more equations are given, Professor Boole, shows that, in Logic, a class symbol may be eliminated from a single equation. In fact, elimination from two or more premises is ultimately reduced by our author to elimination from a single premiss. And yet, as if to preserve the analogy between Algebra and Logic, even where the two sciences seem to differ most widely from one another, the possibility of eliminating x from a single premiss in the latter science, arises from the circumstance, that, in that science the equation previously referred to as expressing the Law of Duality always subsists; and it is by the combination of that equation with the given proposition that the elimination of x from the given proposition is effected. For let the given proposition be

$$f(x) = 0 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (21)$$

Then, by (10),

$$f(1)\,x + f(0)\,(1-x) = 0.$$

$$\therefore x\,\{f(0) - f(1)\} = f(0),$$

$$\text{and, } (1-x)\,\{f(0) - f(1)\} = -f(1).$$

$$\therefore x\,(1-x)\,\{f(0) - f(1)\}^2 = -f(0)\,f(1).$$

But, by the Law of Duality, $x\,(1-x) = 0$. Therefore