

but can be derived from it only by the aid of the principle of contradiction. Not the ultimate foundation; for what is the Dictum, but a particular case of a more comprehensive, and (in this sense) more fundamental, law? Aristotle saw this, and has expressed it as clearly as any man that ever lived. "It is manifest," he says, "that no one can conceive to himself that the same thing can at once be and not be, for thus he would hold repugnant opinions, and subvert the reality of truth. Wherefore, all who attempt to demonstrate, reduce everything to this as the ultimate doctrine; for this is by nature the principle of all other axioms."

Professor Boole's acceptance of the Leibnitzian maxim (though it was much older than Leibnitz) that the true foundation of the science of logic is the principle of contradiction, has the appearance of being at variance with some extraordinary statements which he elsewhere makes, to the effect that the principle of contradiction is a consequence of the law of duality. We may remind our readers that the law of duality [see (4) and (7)] is substantially the principle out of which all the details of Professor Boole's own doctrine are evolved. Now, under the influence of what was, perhaps, not an unnatural desire to vindicate for his system a peculiar depth of foundation, Professor Boole has been betrayed into observations by which his fame as a philosophic thinker must be seriously affected. For instance: "that axiom of metaphysicians which is termed the principle of contradiction, and which affirms that it is impossible for any being to possess a quality and at the same time not to possess it, is a consequence of the fundamental law of thought, whose expression is $x^2 = x$." And again: "the above interpretation has been introduced, not on account of its immediate value in the present system, but as an illustration of a significant fact in the philosophy of the intellectual powers, viz., that what has commonly been regarded as the fundamental axiom of metaphysics is but the consequence of a law of thought, mathematical in its form." In thus speaking of the principle of contradiction as a consequence of the law of duality, Professor Boole seems to take away the fundamental character of the principle of contradiction; for, if that principle be, in the proper sense of the term, a consequence of something else, it cannot be itself truly fundamental. Yet, as we have seen, Professor Boole admits that it is the real and deepest foundation of the science of logic. What, then, does he mean? On the one hand, he cer-

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