the ground that the behavior of an elastic body, for example, is completely determined after a time t_0 by its state at $t = t_0$. According to this view the discrepancies between theory and observation are due to inadequate experimental facilities for the determination of interior initial conditions. Volterra, on the other hand, contends that just as bodies react upon each other at a distance, so it is possible that tensions and displacements separated by an interval of time may be related. Even if the contention of those who question the philosophical basis of the theory is granted, nevertheless the agreement between experimental results and the elastic theory involving heredity is in itself a justification. It seems clear to Volterra that, in view of the difficulty of determining initial conditions experimentally, and in the absence of other theories agreeing with experiment, the theory of heredity offers the only explanation at present possible of a large class of phenomena. He cites the experiments of Webster and Porter in the theory of sound as a cogent illustration, and his own success in the mathematical solution of problems in the theory of elasticity with heredity must be regarded as a potent argument in favor of his point of view.

G. A. BLISS.

SHORTER NOTICES.

List of Prime Numbers from 1 *to* 10,006,721. By D. N. LEHMER. Washington, D. C., Carnegie Institution of Washington, 1914. xvi+133 pp.

THERE are several reasons why number theorists will welcome most heartily the publication of this volume.

First, it answers with utmost directness the question, arising at almost every stage of number theoretic computation, whether or not a proposed number (under ten millions) is prime. Here the question of absolute accuracy of a table is paramount; the user of such a table has no practical means of checking the accuracy of an entry and if he relies upon an erroneous entry his conclusions will be wholly wrong. It is thus quite different from the case of ordinary tables (those of the values of a continuous function), since it is there only a question of approximation and a grossly erroneous error should be detected by the user of the table. The present table prob-