

great progress has been made because the scientific mind has become impressed with the necessity of, from time to time, examining every received theory, in order to ascertain whether it is still in accordance with facts. Thus, the phlogistic theory of chemistry promulgated by Stahl and Beccher was replaced by the oxygen theory of Lavoisier, when the discoveries of Scheele, Priestley, Cavendish and Black, showed it to be no longer tenable; and in our own day a very considerable change in chemical theory and nomenclature has been made, because the facts were found not to agree with deductions from the received theory. Now, the Greeks did not neglect to observe facts, and in truth, all the theories that they formed were based on facts. But they had, as Buckle thinks the Scotch have, a strong bias towards deduction, and having once made a generalization, their tendency was to reason from it and accept the results of this reasoning without ascertaining whether they too were supported by the facts. From this, also, resulted a great indistinctness and haziness in their explanations of phenomena, even when they had by chance obtained some glimmering of the correct view. As in the case of the giant who received an accession of strength when he touched mother earth, it is for the advantage of all theorizers to come down frequently to the solid basis of reality. This tendency to deduction in the Greek mind had, indeed, its good side. To it we owe the geometry of Euclid, which is the logical exhibition of the conclusions implicitly contained in a few definitions, postulates, and axioms. In modern times there has been a close alliance between the mathematicians and the devotees of the sciences of observation and experiment, to their great mutual advantage. But whatever may have been the cause, the geometry of Euclid failed in ancient times specially to promote progress in other sciences.

While the failure of the Greeks to make any great advance in this department has its lesson for us, the fact that they were the only race of antiquity that made great and persistent exertions to solve scientific problems has also its lesson. What was the cause of the great intellectual activity of this race? I believe it to have been due to the same causes that made the Greeks free, whether these were climatic, or racial, or connected with their occupation and mode of life. As compared with Rome or Carthage, Athens and some of the other great commercial cities of Greece were decidedly democratic, the Roman and Carthaginian populations having never been able to