him do we owe the discovery of the law of specific gravity. To Euclid, a professor of mathematics in the ancient college of Alexandria, are we indebted for our geometry. The notations used in the arithmetics and algebras originated with the Arabs and Moors, who were among the learned races of the times. Though skilled as were the ancients in the sciences, yet their knowledge was very imperfect and not at all extensive, when compared with that of our own age.

As centuries rolled on the tree of knowledge grew taller and yielded more and more of its fruit. As a nation became greater attention was paid to knowledge in all its various ramifications. This was especially true of ancient Greece and Rome. But in many nations of Europe in more recent times much bigotry in regard to learning prevailed, and men were persecuted for holding certain views. Thus, that great genius Galileo, who discovered many important principles and revealed many an unknown truth, was thrust into a dungeon because he believed and asserted that the earth went around the sun. When the zealous and courageous Christopher Columbus laid his plans before the Court of Salamanca he was laughed at, and regarded as a visionary. But as time advanced nations became more enlightened and individuals ceased to be hooted at and persecuted for their beliefs. New systems sprang up and new departments were added. The structure whose foundation was laid by the ancients was raised higher and higher as law after law, and principle after principle was built upon it. The fame of Newton, of Leibnitz, of Laplace and others whose giant intellects devised new systems and discovered new laws has been immortalized. Centuries will roll on and their names will live with the grand work which they have accomplished.

F. A. G.

THE STEREOSCOPE.

THOUSANDS have enjoyed the life-like illusions of this simple instrument, while few have understood its principles or known why it gives such seemingly real solidity to the objects in a picture. To understand this it is necessary to remember a law of light and a law of vision. First, a luminous body emits rays of light from every point in every direction, and a non-luminous body reflects rays in the same manner. Second, every point of an object is seen in the direction of that ray from it which passes through the optical centre of the eye to the retina. From the last it follows that if the two eyes, about two and a half inches apart, be so turned toward each other that their axes meet on a point, then the image conveyed to the mind by one eye lies in space directly upon that conveyed by the other, and we see both in the same position, and there is but one perception, as in common vision. But let the direction of the axis of one eye be change a little, by a gentle pressure of the finger, and one image is seen in one direction, another in a different; there are two perceptions, and the mind conceives two objects a little removed in position.

This simple experiment shows that each eye takes its own image through nerve and brain, to the formation of a distinct perception in the mind. The true reason why we see but one object with two eyes is neither anatomical nor physical (as many have taught) but is purely psychological, and depends on this: that by the constitution of the mind and by its relations with space and matter it is impossible for us to think two points of space in one, two atoms of matter in one, two objects co-existing in the same place. And since, by law of visible direction, one eye tells the mind of an object in a certain place and the other eye simultaneously tells the mind of an object in that same place, the