for by the bending of the ray of light emerging from the water. After his time, Ptolemy, the celebrated astronomer, in his work on optics, collected together and endeavored to explain the various phenomena of light as then known.

About this time, what is known as the corpuscular theory was universally held by those scientists and philosophers who gave any attention to the study of light. According to this theory, light is produced, not subjectively, but rather from an extrinsic cause. Self-luminous bodies, such as the sun, were supposed to throw off continually, small imponderable particles of their substance which, on account of their minuteness, were termed corpuscles. Some of these corpuscles which were projected in all directions, reached the eye, and by their irritave action on the retina produced the sensation of vision somewhat analogous to the sense of smell; for we know that substances which are odorous, cast off small particles which reach the olfactory nerve. Other objects not self luminous, become visible by reflecting these particeles more or less regularly, that is. by making them rebound from their surfaces as if they were of an elastic nature. This theory was for a long time sternly adhered to by learned men, not because there was any real and definite proof of its truth, but rather, because it gave an explanation of all facts then known concerning light, and because it seemed to be in keeping with the atomic system of bodies then in vogue. There was, however, a fact derived from astronomy, which was for a long time considered a positive demonstration of the theory. It has been observed that the tails of comets in their revolution around the sun are always directed from it. When the comet approaches the sun, its tenuous envelope remains behind the head as something dragged in its wake, but when receding from the sun, strange to say, the tail precedes the more solid portion or nucleus as if some force were thrusting it forward. Many attributed this to the conflict of the luminous particles which resulted in favor of the sun, on account of the greater number projected, and the superior force with which they travelled.

From these various facts it was generally thought that scientists had hit upon the proper explanation of light; so much so, indeed, that even when conclusively proven to be erroneous, it was still resolutely adhered to by great thinkers The first shock that it received was when the velocity of light was determined. According to the theory, light was supposed, and rightly too, not to be instantaneous. but rather similar to what takes place in sound to occupy a certain time in travelling from the luminous body to the eye. It was not, however, thought to be so great as it proved to be. Its velocity was first ascertained from astronomical observation in 1675, by Romer, a Danish astronomer. This was done by observing the eclipses of Jupiter's first satellite. This satellite suffers occultation by passing behind the planet at regular intervals, the time elapsing between each occultation, being forty-two hours, twenty-eight minutes and thirty-six seconds. His method may be clearly understood by comparing it with the following experiment. Suppose a signal gun to be fired at a certain station, at regular intervals of one hour. If discharged exactly at noon, a person standing near it will hear the report almost at the same moment. Now if he travel from the gun he will