till each was found, by astronomical observation, to be a degree from the place at which they started. It then appeared that these terrestrial degrees were respectively 56 miles, and 56 miles and two-thirds, the mile being 4000 cubits. In order to remove all doubt concerning the scale of this measure, we are informed that the cubit is that called the black cubit, which consists of 27 inches, each inch being the thickness of six grains of barley.

Sect. 6.—Ptolemy's Discovery of Evection.

By referring, in this place, to the last-mentioned measure of the earth, we include the labors of the Arabian as well as the Alexandrian astronomers, in the period of mere detail, which forms the sequel to the great astronomical revolution of the Hipparchian epoch. And this period of verification is rightly extended to those later times; not merely because astronomers were then still employed in determining the magnitude of the earth, and the amount of other elements of the theory,—for these are some of their employments to the present day,—but because no great intervening discovery marks a new epoch, and begins a new period;—because no great revolution in the theory added to the objects of investigation, or presented them in a new point of view. This being the case, it will be more instructive for our purpose to consider the general character and broad intellectual features of this period, than to offer a useless catalogue of obscure and worthless writers, and of opinions either borrowed or unsound. But before we do this, there is one writer whom we cannot leave undistinguished in the crowd; since his name is more celebrated even than that of Hipparchus; his works contain ninety-nine hundredths of what we know of the Greek astronomy; and though he was not the author of a new theory, he made some very remarkable steps in the verification, correction, and extension of the theory which he received. I speak of Ptolemy, whose work, "The Mathematical Construction" (of the heavens), contains a complete exposition of the state of astronomy in his time, the reigns of Adrian and Antonine. This book is familiarly known to us by a term which contains the record of our having received our first knowledge of it from the Arabic writers. The "*Megiste* Syntaxis," or Great Construction, gave rise, among them, to the title *Al Magisti*, or *Almagest*, by which the work is commonly described. As a mathematical exposition of the Theory of Epicycles and Eccentrics, of the observations and calculations which were employed in