9. *Eccentricity of the Planetary Orbits.*—The form of the elliptical orbits is determined by the greater or less distance of the two foci from the center of the ellipse. This distance, or the *eccentricity* of the planetary orbits expressed in fractional parts of their half major axes, varies from 0·006 in the orbit of Venus (consequently very near the circular form), and 0·076 in that of Ceres, to 0·205 and 0·255 in those of Mercury and Juno. Next in succession to the least eccentric orbits of Venus and Neptune follows that of the Earth, whose eccentricity is now decreasing at the rate of about 0·00004299 in 100 years, while the minor axis increases; then come the orbits of Uranus, Jupiter, Saturn, Ceres, Egeria, Vesta, and Mars. The most eccentric orbits are those of Juno (0·255), Pallas (0·239), Iris (0·232), Victoria (0·217), Mercury (0·205), and Hebe (0·202). The eccentricity is on the increase in the orbits of some planets, as Mercury, Mars, and Jupiter; on the decrease in those of others, as Venus, the Earth, Saturn, and Uranus. The following table gives the eccentricities of the large planets for the year 1800, according to Hansen. The eccentricities of the *fourteen small planets* will be given subsequently, together with other elements of their orbits for the middle of the nineteenth century.

Hist. of the Conquest of Peru, vol. i., p. 126. The Mexicans possessed among their twenty hieroglyphical signs of the days, one held in especial veneration, called *Ollintonatiuh*, that of the *four movements of the Sun*, which governed the great cycle, renewed every $52=4\times13$ years, and referred to the course of the Sun intersecting the solstices and equinoxes, and hieroglyphically expressed by *foot-steps*. In the beautifully-painted illuminated Aztec manuscript, which was formerly preserved in the villa of Cardinal Borgia at Veletri, and from which I derived much important information, there is the remarkable astrological sign of a cross. The day-signs, which are written on the margin by its side, would perfectly represent the passage of the Sun through the zenith of the town of Mexico (Tenochtitlan), the equator, and the solstitial points, if the points (round disks), added to the *day-signs* on account of the periodic series, were equally complete in all *three* passages of the Sun. (Humboldt, *Vues des Cordillères*, pl. xxxvii., No. 8, p. 164, 189, and 237.) The King of Tezcuco, Nezahualpilli (called a *fast child*, because his father fasted for a long time previously to the birth of the wished-for son), who was passionately given to astronomical observations, erected a building which Torquemada rather venturously calls an *observatory*, and the ruins of which he saw. (*Monarquia Indiana*, lib. ii., cap. 64.) In the *Raccolta di Mendoza*, we find a priest represented (*Vues des Cordillères*, pl. lviii., No. 8, p. 289), who is watching the stars, which is expressed by a dotted line which passes from the observed star to his eye.