

liptic orbits of Juno, Pallas, and Mercury have the greatest degree of eccentricity, and Mars and Venus, which immediately follow each other, have the least. Mercury and Venus exhibit the same contrasts that may be observed in the four smaller planets, or asteroids, whose paths are so closely interwoven.

The eccentricities of Juno and Pallas are very nearly identical, and are each three times as great as those of Ceres and Vesta. The same may be said of the inclination of the orbits of the planets toward the plane of projection of the ecliptic, or in the position of their axes of rotation with relation to their orbits, a position on which the relations of climate, seasons of the year, and length of the days depend more than on eccentricity. Those planets that have the most elongated elliptic orbits, as Juno, Pallas, and Mercury, have also, although not to the same degree, their orbits most strongly inclined toward the ecliptic. Pallas has a comet-like inclination nearly twenty-six times greater than that of Jupiter, while in the little planet Vesta, which is so near Pallas, the angle of inclination scarcely by six times exceeds that of Jupiter. An equally irregular succession is observed in the position of the axes of the few planets (four or five) whose planes of rotation we know with any degree of certainty. It would appear from the position of the satellites of Uranus, two of which, the second and fourth, have been recently observed with certainty, that the axis of this, the outermost of all the planets, is scarcely inclined as much as  $11^{\circ}$  toward the plane of its orbit, while Saturn is placed between this planet, whose axis almost coincides with the plane of its orbit, and Jupiter, whose axis of rotation is nearly perpendicular to it.

In this enumeration of the forms which compose the world in space, we have delineated them as possessing an actual existence, and not as objects of intellectual contemplation, or as mere links of a mental and causal chain of connection. The planetary system, in its relations of absolute size and relative position of the axes, density, time of rotation, and different degrees of eccentricity of the orbits, does not appear to offer to our apprehension any stronger evidence of a natural necessity than the proportion observed in the distribution of land and water on the Earth, the configuration of continents, or the height of mountain chains. In these respects we can discover no common law in the regions of space or in the inequalities of the earth's crust. They are *facts* in nature that have arisen from the conflict of manifold forces acting under un-