of $\frac{1}{299}$th. In accordance with this, the polar radius is 10,938 toises (69,944 feet), or about $11\frac{1}{2}$ miles, shorter than the equatorial radius of our terrestrial spheroid. The excess at the equator in consequence of the curvature of the upper surface of the globe amounts, consequently, in the direction of gravitation, to somewhat more than $4\frac{3}{7}$th times the height of Mont Blanc, or only $2\frac{1}{2}$ times the probable height of the summit of the Dhawalagiri, in the Himalaya chain. The lunar inequalities (perturbation in the moon's latitude and longitude) give, according to the last investigations of Laplace, almost the same result for the ellipticity as the measurements of degrees, viz., $\frac{1}{299}$th. The results yielded by the oscillation of the pendulum give, on the whole, a much greater amount of compression, viz., $\frac{1}{288}$th.*

2·8403 toises, or 18·16 feet, whence the length of a geographical mile is 3807·23 toises, or 6086·7 feet. Previous combinations of measurements of degrees varied between $\frac{1}{302}$d and $\frac{1}{297}$th; thus Walbeck (*De Forma et Magnitudine telluris in demensis arcubus Meridiani definiendis*, 1819) gives $\frac{1}{302.78}$th: Ed. Schmidt (*Lehrbuch der Mathem. und Phys. Geographie*, 1829, s. 5) gives $\frac{1}{297.482}$d, as the mean of seven measures. Respecting the influence of great differences of longitude on the polar compression, see *Bibliothèque Universelle*, t. xxxiii., p. 181, and t. xxxv., p. 56; likewise *Connaissance des Tems*, 1829, p. 290. From the lunar inequalities alone, Laplace (*Exposition du Syst. du Monde*, p. 229) found it, by the older tables of Bürg, to be $\frac{1}{323.5}$th; and subsequently, from the lunar observations of Burckhardt and Bouvard, he fixed it at $\frac{1}{299.1}$th (*Mécanique Céleste*, t. v., p. 13 and 43).

* The oscillations of the pendulum give $\frac{1}{288.7}$th as the general result of Sabine's great expedition (1822 and 1823, from the equator to 80° north latitude); according to Freycinet, $\frac{1}{286.2}$d, exclusive of the experiments instituted at the Isle of France, Guam, and Mowi (Mawi); according to Forster, $\frac{1}{289.5}$th; according to Duperrey, $\frac{1}{266.4}$th; and according to Lütke (*Partie Nautique*, 1836, p. 232), $\frac{1}{269}$th, calculated from eleven stations. On the other hand, Mathieu (*Connaiss. des Temps*, 1816, p. 330) fixed the amount at $\frac{1}{298.2}$d, from observations made between Formentera and Dunkirk; and Biot, at $\frac{1}{304}$th, from observations between Formentera and the island of Unst. Compare Baily, *Report on Pendulum Experiments*, in the *Memoirs of the Royal Astronomical Society*, vol. vii., p. 96; also Borenius, in the *Bulletin de l'Acad. de St. Pétersbourg*, 1843, t. i., p. 25. The first proposal to apply the length of the pendulum as a standard of measure, and to establish the third part of the seconds pendulum (then supposed to be every where of equal length) as a *pes horarius*, or general measure, that might be recovered at any age and by all nations, is to be found in Huygens's *Horologium Oscillatorium*, 1673, Prop. 25. A similar wish was afterward publicly expressed, in 1742, on a monument erected at the equator by Bouguer, La Condamine, and Godin. On the beautiful marble tablet which exists, as yet uninjured, in the old Jesuits' College at Quito, I have myself read the inscription, *Penduli simplicis æquinoctialis unius minuti secundi*