

Galileo, who first observed when a boy (having, probably, suffered his thoughts to wander from the service) that the height of the vaulted roof of a church might be measured by the time of the vibration of the chandeliers suspended at different altitudes, could hardly have anticipated that the pendulum would one day be carried from pole to pole, in order to determine the form of the Earth, or, rather, that the unequal density of the strata of the Earth affects the length of the seconds pendulum by means of intricate forces of local attraction, which are, however, almost regular in large tracts of land. These geognostic relations of an instrument intended for the measurement of time—this property of the pendulum, by which, like a sounding line, it searches unknown depths, and reveals in volcanic islands,* or in the declivity of elevated continental mountain chains,† dense masses of basalt and mela-

archetypus, mensuræ naturalis exemplar, utinam universalis! From an observation made by La Condamine, in his *Journal du Voyage à l'Équateur*, 1751, p. 163, regarding parts of the inscription that were not filled up, and a slight difference between Bouguer and himself respecting the numbers, I was led to expect that I should find considerable discrepancies between the marble tablet and the inscription as it had been described in Paris; but, after a careful comparison, I merely found two perfectly unimportant differences: "ex arcu graduum $3\frac{1}{2}$ " instead of "ex arcu graduum plusquam trium," and the date of 1745 instead of 1742. The latter circumstance is singular, because La Condamine returned to Europe in November, 1744, Bouguer in June of the same year, and Godin had left South America in July, 1744. The most necessary and useful amendment to the numbers on this inscription would have been the astronomical longitude of Quito. (Humboldt, *Recueil d'Observ. Astron.*, t. ii., p. 319-354.) Nouet's latitudes, engraved on Egyptian monuments, offer a more recent example of the danger presented by the grave perpetuation of false or careless results.

* Respecting the augmented intensity of the attraction of gravitation in volcanic islands (St. Helena, Ualan, Fernando de Noronha, Isle of France, Guam, Mowi, and Galapagos), Rawak (Lütke, p. 240) being an exception, probably in consequence of its proximity to the high land of New Guinea, see Mathieu, in Delambre, *Hist. de l'Astronomie, au 18me Siècle*, p. 701.

† Numerous observations also show great irregularities in the length of the pendulum in the midst of continents, and which are ascribed to local attractions. (Delambre, *Mesure de la Méridienne*, t. iii., p. 548; Biot, in the *Mém. de l'Académie des Sciences*, t. viii., 1829, p. 18 and 23.) In passing over the South of France and Lombardy from west to east, we find the minimum intensity of gravitation at Bordeaux; from thence it increases rapidly as we advance eastward, through Figeac, Clermont-Ferrand, Milan, and Padua; and in the last town we find that the intensity has attained its maximum. The influence of the southern declivities of the Alps is not merely dependent on the general size of their mass, but (much more), in the opinion of Elie de Beaumont (*Rech. sur les Révol. de la Surface du Globe*, 1830, p. 729), on the rocks of melaphyre and serpentine, which have elevated the chain. On the