Axis major = 41,854,800 feet, in long. 38° 44′ E. from Paris (one end falling about half-way between Mount Kenia and the east coast of Africa, the other in the middle of the Pacific Ocean).

Axis minor = 41,850,007 feet, in long. 128° 44′ E. from Paris (one end falling on Waygiou, one of the Molucca Islands, and the other at the mouth of the Amazon River), giving an ellipticity of one 8880th, or about one-thirtieth part of that of the meridians as already stated.

(26.) The figure of the equator, and its dimensions thus obtained, the exact equatorial diameter corresponding to any given longitude is easily calculated. And by comparing this with the polar axis, the precise ellipticity of the meridian for that longitude may be computed. And executing this computation for Paris, M. Schubert finds $\frac{1}{296}$ for the ellipticity of the French meridian.

(27.) With these data, viz., a Polar axis of 41,708,088 feet, and an ellipticity of $\frac{1}{296}$ which certainly may lay claim to greater precision than anything previously obtained, I shall now proceed to calculate the true length of the quadrant of the French meridian, for which purpose the following very simple and convenient formula may be used,* viz.:—

$$Q = \frac{\pi}{4} A (1 + 2m + 9m^2 + 38m^3)$$

* For the present purpose it is necessary to carry out the calculation to the cube of the ellipticity—but in cases where the *square* of that fraction may be neglected, the following simple rule for finding the circumference of an ellipse is worth remembering. On the longer axis of the ellipse describe a circle, and between this and the ellipse, describe a small circle having its centre in the prolongation of the minor axis, and touching the ellipse externally, and