

Station.	North end of compass needle veered between 1800 and 1890.
London.....	6° 30' to the east.
Paris.....	6 58 " "
Rome.....	6 29 " "
Manila.....	0 37 " "
San Francisco.....	3 02 " "
Baltimore.....	4 14 " west.
Rio de Janeiro.....	11 18 " "
Ascension Island.....	9 00 " "
St. Helena ".....	6 42 " "
Cape Town.....	3 48 " "

The compass needle accordingly while swinging to the *eastward* at London between 1800 and the present time was swinging in the opposite direction, *westward*, at Baltimore during the same interval of time, the amount of swing not being the same at the two stations.

Another striking fact disclosed by looking over the figures for any one station, for example, Baltimore, is *that at the same station the change per year, as frequently assumed by the surveyor, is not a constant quantity.* The annual change for this particular station may vary all the way from zero to four minutes. At the times of maximum or minimum values of the declination the annual change is practically zero for about five years on either side of these epochs. The annual change then begins to increase until about midway between the epochs of maximum and minimum values, for example, about 1730 or about 1870, when it reaches its maximum value of about four minutes; it then diminishes again.

The secular motion of the compass needle may be likened to the swinging of a pendulum. At the extreme positions of the pendulum, on either side of the position it would occupy if at rest, the velocity with which the bob moves in its orbital path vanishes. As the pendulum moves towards its mean position, from the right let us say, it does so at a constantly accelerating pace until it reaches the mean position midway between the two extreme positions. Here the velocity is a maximum, and as the pendulum swings past the mean position it begins to slacken its pace until reaching the extreme position on the left, when the velocity of motion again vanishes. As stated, at no station has as yet a complete swing, for example, from