INTRODUCTION.

2

seconds.* Degrees, minutes, and seconds, are denoted by the characters, °, ', ". Thus, 23° 27' 54" means 23 degrees, 27 minutes, 54 seconds.

4. The earth performs a revolution round the sun in a year, moving in a path which is called its orbit.

5. While moving round the sun, the earth, each day, revolves on a line passing through its centre, and called its *axis*.

6. The points in which the axis cuts the surface, are called the *poles* of the earth: one of them the *north pole*; the other, the *south pole*.

7. A great circle which has all points of its circumference equally distant from the poles, is called the *equator*. This circle divides the earth into the northern and southern hemispheres.

8. A semicircle which extends from one pole to the other, and through any particular place, is called the *meridian* of that place.

9. The *latitude* of a place on the earth's surface, is its distance from the equator, measured in degrees, on its meridian. Latitude is of two kinds, *north* and *south*, according to the situation of the place in respect to the equator.[‡]

10. The *longitude* of a place is the distance in degrees on the equator between its meridian, and another called the *first meridian*. Longitude is of

+ 5. The remaining part of the entire circle is sometimes called the anti-meridian. Sometimes also the entire circle is regarded as the meridian.

5 6. The less the latitude of any place is the greater, in general, is the heat of its climate. This, however, is much modified by the elevation of the place above the level of the sea, the heat being less as the place is more elevated. The temperature is also influenced by contiguity to heated plains of sand, or to frozen regions, and places that are near the sea, enjoy, a more equable temperature, than places more remote. It has been generally thought also, that the heat is considerably greater in the northern hemisphere, than in the corresponding latitudes in the southern. The difference, however, if there be any, is probably much less than is commonly supposed.

. ? The longitude of a place may also be defined to be the angle of inclination of the planes of its meridian and the first meridian; and this angle is measured tv of

is

n

di

L w p

> 29 no th

di is ot

po th po

eith those place

will

the con ting mot and hea in p nor of t cont with like the thos 8071 1001 dow been 10 8

othe

^{• 4.} A fourth part of the circumference is called a *quadrant*: a quadrant, therefore, contains 90°. It is evident that the magnitudes of degrees, minutes, and seconds, will depend on the magnitude of the circle of whose circumference they are parts. Thus, if the tircumference to 360 yards, each degree will evidently be a yard: while, if the former be 160 miles, the latter will be half a mile. The average length of a degree on the earth's surface, is about 69 British miles and one twentieth.