

poles, and this difference which is indicated by the angle contained by the astronomic and magnetic meridians, is called the Declination of the Needle ; which difference is not everywhere the same.

In this Eastern part of America the direction of Magnetic North is about sixteen degrees *West* of true North ; whereas in British Columbia, it is about twenty degrees *East* of North ; and this declination is continually changing, to the extent of about five minutes in a year, the North end of the needle now gradually moving towards the West, in this Eastern part of America.

It is therefore of primary importance that, before using in any section of the country, its direction be ascertained by astronomic observation.

It is likewise subject to another change, known as the diurnal variation, which deflects it from its usual course about twelve minutes in twenty-four hours, and must be taken into consideration when using it : the maximum variation occurring about 2 p.m., after which it slowly returns to its former position.

In these northern latitudes the North end of the needle is drawn downwards, the extent of the inclination varying in different locations even in the same latitude.

It has been ascertained that the North magnetic pole is situated in about latitude seventy degrees North and longitude ninety-six degrees forty-six minutes West, which is a little North West of Hudson's Bay, and not far from Chesterfield's inlet.

The *magnetic equator*, does not correspond at all points with the earth's equator, but it is a curved line, in places a number of degrees from the equator proper.

On the magnetic equator the needle remains in a horizontal position ; but in southern magnetic latitudes the South end is drawn downwards in the same way that the North end inclines in northern magnetic latitude.

In order to counteract this dipping, and to keep the Needle in a horizontal position, a sliding counterpoise is placed upon most needles. *Sliding* because, as the instrument, from long use or any other circumstance, loses its magnetism, the North end dips less.