both towards west." The diurnal deviation is greatly influenced by local causes, such as the state of the weather, and especially the temperature, a circumstance which strongly tends to confirm the supposition that it is under the control of those electric currents, excited by the action of unequal currents of heat.

De Saussure made, some time since, a series of experiments on the Col du Géant at an elevation of about 11,300 feet above the level of the sea, with the object of determining the influence of elevation upon the diurnal change of variation. By comparing the result of these observations with those which he obtained at Chamouni and Geneva, he discovered that the change is but little influenced oy the altitude of the place, the course of the diurnal variation being the same in the three places, the times of the least and greatest variations being later on the Col du Géant than at Chamouni or Geneva.

DIP.

The needle is subject to a perpendicular as well as a vertical motion. Norman discovered that a needle, accurately balanced, and perfectly horizontal before it was touched by a magnet, always lost its position after the magnetic principle was communicated to it, the north pole declining below the horizon in those countries situated in the northern hemisphere. This ingenious philosopher invented an instrument by which to measure the inclination or dip, and determined it to be, in London, about 71° 50'. This experiment is supposed to have been made in the year 1576. The same philosopher was aware of the fact that the dip changes with the situation of the place in which the needle is suspended, though he was not aware of the circumstances which influence this change.

It may be stated, as a general law, that the dip increases from the equator to the poles. If the poles of the earth's rotation were the magnetic poles, then this would be strictly true, and on the equator the magnet would be horizontal, while at the poles it would be vertical. But, as the terrestrial and magnetic poles do not coincide, neither can the terrestrial and magnetic equator.

The dip may be very well illustrated by suspending a small magnetic needle over a large bar-magnet; when the middle