

be understood by the general reader, from the following summary.

Every one is familiar with the ordinary phenomena of a magnetic needle freely suspended, and with its tendency to assume a position more or less approaching to parallelism to the earth's axis; that is to say; all over the world, a magnetic needle points nearly north and south. Most persons, probably, are also acquainted with the phenomenon termed the *dip* or *inclination* of the magnetic needle: thus, in the latitude of London, a needle exactly poised and freely suspended, instead of assuming a horizontal position, will settle at an angle of 70° , the north pole being downwards. If we carry such a needle southwards, towards the equator, we observe that the dip gradually diminishes; till at a certain point, nearly coinciding with the earth's equator, it has no dip at all, but assumes a perfectly horizontal position. As we still proceed towards the south, the dip again makes its appearance, but in an opposite direction, the south pole being now next the earth's surface. To understand the reason of this *dip* of the magnetic needle and of its general direction, we have only to consider that the earth itself operates as a great magnet, the poles of which are situated beneath its surface. The directive property of the needle is owing to these poles; and when the needle is on the north side of the