

this period were frequently corrected for this deviation so that they would point to the true north.

The earliest land observation which has thus far come to our notice was made at Rome by Georg Hartmann, vicar at Nuremburg, of whom we shall again have occasion to speak, in the early part of the sixteenth century, probably in the first decade. The needle bore 6° E. In Paris in 1541, according to Bellarmartus, the declination of the needle was 7° E. and, in London, in 1580, William Boroughs found $11\frac{1}{4}^{\circ}$ E.

Observations now began to multiply, and *the year 1600 marks a distinct epoch in terrestrial magnetism*, for in this year, nearly three centuries ago, appeared one of the most remarkable books ever written. It was epoch-making not alone for its contents and the marvellous conclusions reached, but also for the truly philosophical art of reasoning employed. Not a conclusion was reached without being subjected to a rigorous experimental demonstration. In this respect it stood notably apart from similar books of its day, and in many respects it is still a standard work. The book to which I refer was none other than the great treatise on magnetism, "De Magnete," by Dr. William Gilbert of Colchester, physician-in-ordinary to Queen Elizabeth.¹

The final conclusion reached by Gilbert with regard to the cause of the magnetic phenomena observed up to that time was summed up in the following sentence: "*Magnus magnes ipse est globus terrestris*" — "The terrestrial globe itself is a great magnet."

This was the first rational explanation of the action of a compass needle. Before that all sorts of fanciful theories were in vogue. Thus, for example, it was said that it was the attractive influence of the *pole star* which made the needle point approximately to the north.

The only modification that modern science could make with regard

¹This was written in Latin, and strange to say, was translated into English only within the last few years. This translation was performed by P. Fleury Mottelay and published by Wiley and Sons, New York. It is entitled: WILLIAM GILBERT OF COLCHESTER, Physician of London, On the Loadstone and Magnetic Bodies and on The Great Magnet the Earth. A new Physiology, demonstrated with Many Arguments and Experiments.