

and in the depths below us—at the bottom of the sea. Let us hope that the means will soon be forthcoming to permit the making of such observations, so that continued progress, another step forward, may be made in the subject of the earth's magnetism!

THE SECULAR VARIATION OF THE MAGNETIC DECLINATION.

The year 1634 witnessed the discovery of the next remarkable fact with regard to the magnetic declination, the so-called *secular variation*, whereby the earth's magnetism suffers most remarkable changes in the course of time. It was an accepted fact by this time that the needle's deviation from the true north was not the same at all places, but varied with geographical position. But now an entirely new fact was clearly demonstrated. Henry Gellibrand, a professor of mathematics at Gresham College, after a careful determination made on June 12, 1634, at Deptford, about three miles southeast of London Bridge, found that the needle pointed $4^{\circ} 6'$ east, while Gunter, on June 13, 1622, had found the value of $5^{\circ} 56\frac{1}{2}'$ east, and, as above cited, Boroughs found the declination to be in London in 1580, $11^{\circ} 15'$ east. It was therefore clearly apparent that the declination or variation was changing and getting smaller. Gellibrand gives his conclusion thus:

“Hitherto, according to the tenets of our magnetical philosophers, we have supposed the variation of all particular places to continue one and the same. . . . But most diligent magnetical observations have plainly offered violence to the same, and proved the contrary, namely, that *the variation is accompanied with a variation.*”

He embodied his observations in a little treatise published in 1635.¹

This fact of the “diminution of the variation” was likewise shown by the Paris observations. It seemingly was ascribed, however, to

¹ The title was, Henry Gellibrand: A Discourse Mathematical on the Variation of the Magnetical Needle, together with its admirable diminution lately discovered. London, 1635.

This interesting book has just been reprinted in facsimile under the editorship of the well-known meteorologist and bibliographer, Prof. Hellmann, of Berlin. It constitutes No. 9 of Hellmann's “Neudrucke von Schriften und Karten über Meteorologie und Erdmagnetismus.” A. Asher & Co., Berlin. Price, 3 marks.