Scale reading.	Wave-length.	Scale reading.	Wave-length.
84	459	94	442
85	457	95	440
86	455	96	438
87	453	97	437
88	451	98	435
89	450	99	434
90	448	100	432
91	447	101	430
92	445	102	429
93	443	103	427.5

IV. "Note on the Determination of Magnetic Inclination in the Azores." By T. E. THORPE, Ph.D., F.R.S. Received November 13, 1880.

With the exception of a series of determinations made by the officers of the "Challenger" at Ponta Delgada, St. Michael, in 1873, no magnetic observations have, so far as I can learn, been made in the Azores since the time of Captain Vidal's hydrographic survey in 1843-4. A visit to these islands during the past summer has enabled me to offer the small contribution to their magnetic history which forms the subject of the present communication.

Magnetic observations are made with some difficulty in the Azores, on account of the intensely volcanic character of the islands. Considerable care was however taken in selecting the stations, and there is no reason to suppose that the observations are affected to any great extent by the nature of the soil or rock immediately beneath the instrument or in proximity to it. The places chosen were such as will enable subsequent observers to repeat the determinations on the same spots.

The dip-circle employed was Dover 3, belonging to the Owens College, Manchester: I had previously used this instrument in the course of my magnetic observations along the fortieth parallel in North America ("Proc. Roy. Soc.," vol. 30, p. 132), and am again indebted to Professor Balfour Stewart for the loan of it. It was provided with two needles, each $3\frac{1}{2}$ inches long and 0.27 inch in maximum breadth. The same precautions were taken to preserve the needles from rust as are described in the communication above referred to, and the method of observation was identical with that previously adopted. In all cases duplicate and independent observations were made with the two needles.

The results are as follow :—

I. Island of St. Michael.

In the garden of Senhor José do Canto, Santa Anna, Ponta Delgada. Approximate position : lat. $37^{\circ} 45' N.$, long. $25^{\circ} 40' W.$

The spot was that selected for the “Challenger” observations : Mr. do Canto has now marked it by a small (stone?) pillar.

	Local time.	Needle 1.	Needle 2.	Mean.
Aug. 23, 1880.	12.0 to 3.30 P.M.	$62^{\circ} 40' \cdot 0$	$62^{\circ} 40' \cdot 5$	$62^{\circ} 40' \cdot 2 N.$

The “Challenger” observations in 1873 gave $63^{\circ} 56' \cdot 8 N.$ *

II. Island of Terceira.

At Angra : in the ground near the monument to Dom Pedro IV, 8 paces to the north of the Obelisk. Approximate position : lat. $38^{\circ} 39' N.$, long. $27^{\circ} 14' W.$

	Local time.	Needle 1.	Needle 2.	Mean.
Sept. 16, 1880.	11 A.M. to 12.12 P.M.	$64^{\circ} 10' \cdot 5$	$64^{\circ} 10' \cdot 1$	$64^{\circ} 10' \cdot 3$

III. Island of Fayal.

At Horta : 32 paces E.N.E. (magnetic) to the front of the Clock Tower to the north of the town. Approximate position : lat. $38^{\circ} 32' N.$, long. $28^{\circ} 38' \cdot 30 W.$

		Needle 1.	Needle 2.	Mean.
Sept. 1, 1880.	12.30 to 1.40 P.M.	$63^{\circ} 38' \cdot 5$	$63^{\circ} 38' \cdot 5$	$63^{\circ} 38' \cdot 5$

Before leaving Lisbon for the Azores I made a set of observations near Moita, at the Quinta do Esteiro Furado, belonging to Mr. T. Creswell, which it may be desirable to include here. The station was identical with that on which I made the series of determinations of Photo-chemical Intensity, published in the “Philosophical Transactions” for 1870. (“On the Relations between the Sun’s Altitude and the Chemical Intensity of Total Daylight in a Cloudless Sky,” Roscoe and Thorpe, “Phil. Trans.,” 1870, p. 309.) The position was, approximately, lat. $38^{\circ} 40' N.$, long. $9^{\circ} W.$ Hence it is practically in the same parallel as the Azores.

		Needle 1.	Needle 2.	Mean.
Aug. 3, 1880.	10.30 A.M. to 12.45 P.M.	$59^{\circ} 03' \cdot 0$	$59^{\circ} 03' \cdot 5$	$59^{\circ} 03' \cdot 2 N.$

* Communicated by Captain Evans, through Mr. Whipple.