

## INTRODUCTION.

**T**HE Rousdon Observatory is situated a short distance within the eastern boundary of Devonshire, and midway between the towns of Lyme Regis and Seaton.

The Observatory being a short distance from the Cliff, and at an elevation of 524 feet above mean sea level, an uninterrupted horizon to the Southward over the splendid bay between the Start Point and Portland Bill is obtained. To the West and North lie the distant hills of Devon, and to the East the Stonebarrow Hills, the Golden Cap, and the high land of Portland.

The situation is therefore decidedly favourable for the study of atmospheric phenomena, being sufficiently elevated above the surrounding country, and free from any purely local influences.

On my return from the observation of the Transit of Venus, in Queensland, I resolved to establish a complete meteorological second order station, and procured from Mr. L. P. Casella the following Instruments:—

Standard Barometer, No. 1243, on the Kew principle, with Vernier reading to 0.002 inch, and attached Thermometer.

Pair of Maximum and Minimum Thermometers.

Pair of Wet and Dry Bulb Thermometers.

Symons' Snowdon Rain Gauge, 5 inches diameter, No. 6771.

Observations with these instruments taken twice daily at the usual hours, viz., 9 A.M. and 9 P.M., were commenced on September 1st, 1883.

The Thermometers at this period, were placed on a Glashier's Thermometer Screen, but before the end of the year I procured one of the Stevenson's Thermometer Screens, as last improved at the suggestion of the Council of the Royal Meteorological Society. This was placed in position on January 1st, 1884.

The Robinson's Anemometer No. 569 (also by Casella) has cups 3 inches in diameter, on 7 inch arms, and registers up to 505 miles; it was received in January, but as the Kew certificate showed rather large errors, it was sent back to the maker for adjustment, and afterwards to Kew Observatory for a new certificate, and was not received here till March; the wind velocity records therefore date from April 1st, 1884.

A Sunshine Recorder of the usual form, by Negretti and Zambra, was placed in position on May 31st, and the duration of bright sunshine has been recorded since June 1st, 1884.

Three Earth Thermometers by Casella, were in position by the middle of June, and records of the temperature of the soil at depths of 1, 2 and 4 feet, have been continued since July 1st, 1884.

A Black Bulb Solar Radiation Thermometer *in vacuo*, by Negretti and Zambra, is mounted 4 feet above the ground, the record commencing October 3rd, 1884.

A Kew Observatory Standard Thermometer, No. 598, is kept for reference, and the readings of the various thermometers are compared with it at stated intervals.

Great care has been taken to find a suitable position for these instruments. The Barometer is placed in the sitting room of my assistant's cottage. The Thermometer Screen is at some distance North of the house, and the Earth Thermometers are planted at its foot. The Rain Gauge and Sunshine Recorder are close at hand, but well clear of all obstruction. The Anemometer is mounted on a pole, the cups being 30 feet above the ground, and in a fully exposed position.

With regard to the routine of observations, it may be stated that the Rain Gauge and Earth Thermometers are read once daily, at 9 A.M. The Black Bulb Solar Radiation Thermometer is read, and the card of the Sunshine Recorder changed once daily, at 9 P.M. The remaining instruments are read twice daily, at 9 A.M. and 9 P.M.; at which hours are also noted the amount of cloud, direction of the wind, and the general weather characteristics of the time.

On December 23rd, 1884, the thermometers were all tested by immersion in melting ice, and the corrections were found to have remained constant.