

since been contrived by Sir John Herschel for this purpose ; but in the report of the Committee of Meteorology appointed by the Royal Society, it is said, " As the actinometer can only be observed at intervals in perfectly clear weather, additional information with regard to solar radiation, of much interest, *though not of so precise a nature*, may be obtained, by the daily register of the maximum temperature of a register thermometer, with a blackened bulb, exposed to the full action of the sun's rays. It may be placed about an inch above the bare soil, and screened from currents of air. The maximum temperature indicated by such a thermometer, even in cloudy weather, will generally be considerably above that of the air, and the maxima and mean daily maxima of its indications will, after a long series of observations, afford data of the utmost value to the history of climates." As this recommendation will undoubtedly be extensively acted upon by the expedition which has sailed to the antarctic regions, and at the observatories established in connection with it, we may expect to have in a few years a large body of facts recorded concerning solar radiation in various latitudes ; and it will obviously facilitate the deduction of general laws therefrom to have the means of comparing observations made in the southern hemisphere with similar ones made in the arctic regions. With this view, I have revised the original records of the Fort Franklin observations, for the purpose of tabulating them more fully than has been done in the appendix above mentioned, so that, in conjunction with the tables there given, the most important of the results may be readily exhibited.

When I first thought of commencing the observations in question, I had no personal experience to guide me in the best mode of conducting them, nor had I read of any example that I could follow, further than the general recommendation to travellers to observe the effect of the sun on a thermometer with the bulb blackened or wrapped round with black wool. My earliest trials were, therefore, of the nature of experiments, and for two or three months were made only at times when the sun shone brightly. In February 1826 I began to observe every hour that the sun was above the horizon, and continued to do so till the end of April, when I found, on summing