

this Province has hitherto chiefly concentrated its intellectual energies : the Geological Survey and the Magnetic Observatory, Montreal and Toronto are named with pride wherever science is cultivated and knowledge revered. There is something grand and ennobling in reflecting on the patient labors of the Magnetic, as of the Astronomical observer. In that little building which rears its modest tower in the University Park, apart from all our busy thoroughfares, on a spot so recently hewn out of the forest wilderness, observers are patiently noting, day by day, the minutest phenomena connected with the elements of terrestrial magnetic force, the laws of periodicity, the number, diversity of forms, and intensity of auroral manifestations, and the indications of a solar magnetic influence on the earth, dependent, as it seems, on the changes which the luminous envelope of the sun undergoes. A larger series of magnetic phenomena completes its cycle of variations from the ordinary mean within a decennial period, which coincides with a similar one observed in the solar spots ; and a variation of the magnetic declination has also been traced, chiefly by means of our own Toronto observations, to lunar influence ; while it has been conclusively established that the elements of the earth's magnetic force are subject to regular diurnal, annual, and decennial ranges of variation from maximum, through minimum, to maximum again. By such observed data glimpses of novel truths of the most remarkable and unexpected kind are being obtained. Through a source so unlikely as our observation of the phenomena of terrestrial magnetism, we are learning somewhat of the constitution of the central luminary of our system. Towards the close of last century, amidst an absolute ignorance of any known data to reason upon, much ingenious speculation was indulged in relative to the nature and constitution of the sun. In seeking to interpret observed solar phenomena, Sir William Herschell was led to the conclusion that the central body of our system is probably an opaque globe, surrounded by a luminous atmosphere, the disturbance of which he accounted for by the emission of an elastic fluid, ascending from the solid body, and producing by its currents those solar spots, to which our attention has been recently drawn by a series of interesting communications from one of our own number.

The recent ingenious application of photography by Sir John Herschell, for following up the speculations of his father, and making the sun record for us the daily changes wrought on its own luminous surface, is another means whereby materials for further philosophical