

III. PHILOSOPHICAL APPARATUS.

The value of the Apparatus is above \$4000. Of this more than two thousand dollars' worth has been lately added by means of a personal subscription amongst some of the Governors. The collection is now very valuable for purposes of illustration in the departments of Mathematical and Experimental Physics. Besides instruments to illustrate Mechanics, (Statics and Dynamics) and Optical Instruments, such as Microscopes, a Telescope, Sextant, &c., there is a good collection for Hydrostatics and Pneumatics, another for Heat, and a very full collection for Magnetism and Electricity, (Statical and Dynamical) including Electro-magnetism, Magneto-electricity, Diamagnetism, Thermo-electricity, the Measurement of Electric Resistance, &c. The collection for Light, from Duboscq of Paris, besides apparatus illustrative of the common phenomena of optics, includes the best instruments for exhibiting on a large scale with the aid of the electric light the phenomena of Interference, Diffraction, Polarization and Double Refraction. There is a good collection for Sound (made by Koenig). The apparatus for Dynamical Electricity and Heat has been made by Messrs. Elliot Brothers, of London, makers of the apparatus used by the Committee on Electrical Standards of the British Association for the Advancement of Science.

IV. CHEMICAL LABORATORY.

The Laboratory is furnished with the Apparatus, Specimens and Chemical Reagents necessary to illustrate the class-lectures in Chemistry; and is also fitted up with all the necessary appliances for the work of a class in Practical Chemistry and for Chemical Analysis.

V. METEOROLOGICAL AND MAGNETIC OBSERVATORY.

The Basement of the Building is devoted entirely to the observations on Terrestrial Magnetism.

The Ground Story and Leads are the portion of the Building devoted to Meteorological observations.

The Transit tower is for the purpose of giving time to the City, and to the Ships in the Harbour, and is connected by Electric Telegraph with a "Time Ball" at the wharf. Connection by Electric Telegraph having also been established between the Observatory and the Government Buildings at Ottawa, mean time is transmitted daily at noon, and made known there by the firing of a Cannon.

The principal Meteorological Instruments are:—Thermometers for determining the Temperature of the Air; Barometers for ascertaining the atmospheric pressure; Psychrometers for the purpose of determining the Elastic force of Aqueous Vapour, the relative Humidity and Dew Point; Instruments for recording the Solar and Terrestrial Radiation; Rain and Snow Gauges for indicating the amount and duration of Rain and Snow; Ozonemeter for recording the amount of Ozone.

The direction and velocity of the wind are registered by a modification of Dr. Robinson's Anemometer.

Observations on Storms, Auroras, Haloes and other Natural Phenomena which mark the variation of Climate are duly recorded.

The Instruments in the Basement of the Building are for determining the Magnetic Elements; and consist of, (1) a Declinometer for measuring the Declination or Variation of the Magnet; (2) a Unifilar Magnetometer consisting of an apparatus for deflection and vibration, for ascertaining the horizontal Magnetic force; (3) an Inclinator or Dip-needle (No. 39 used in the Magnetic Survey in Great Britain) for showing the Inclination or Dip. From these observations are reduced the absolute value of the Magnetic Elements.

The Observatory is under the supervision of Professor Smallwood, M.D., LL.D., D.C.L.