

takes place, without the plant or the organ perishing. Thus cold does not kill vegetation by a mechanical action proceeding from the congelation of the liquid as some naturalists pretend. We must recognize rather a physiological action; that the vitality of the tissue is destroyed by a certain degree of cold followed by a certain degree of heat, according to the peculiar nature of each plant. The vegetable and animal kingdom, according to this view, will act alike. In the same manner as the gangrene that sets in after the thawing of a frozen part causes the death of an animal tissue, so the change or putrefaction which follows a rapid thawing will be the principal cause of the death of the vegetable tissue. It is well known in practice how to manage the transitions of temperature to preserve the organs of vegetables.

Since 1838, until my connection with the Academy of Geneva ceased, I stated in my annual lectures that cold may act in two ways on vege-

tation:—either physically, by the contraction or congelation of the liquids, which often does not kill them; and physiologically, by an action upon the tissues and upon vegetable life, which the laws of physics do not account for. The most striking example of this last, is the immediate death of hot-house plants when exposed to a temperature of 1 + or + 2° C., which causes no congelation. The action of the same degree of temperature is very different on two allied species, and sometimes on two varieties of the same species."

Shooting Stars.—M. Couvreur Gravier reports (Comptes Rendus Acad. Sci., Aug. 16, 1852) that according to his observations at Paris from June 18 to Aug. 13, 1852, the average hourly number of shooting stars seen (by one observer?) at midnight was in the first half of July about 8, from the 16th to the 21st, 11; from the 22d to 27th, 21; from Aug. 2d to 6th, 38; on the 10th, 63; on the 11th, 50; on the 12th and 13th, 45.

Monthly Meteorological Register, at Her Majesty's Magnetical Observatory, Toronto, Canada West.—December, 1852.

Latitude 43 deg. 39.4 min. North. Longitude, 79 deg. 21 min. West. Elevation above Lake Ontario: 108 feet

Table with columns: Magnet. Day, Barom. at tem. of 32 deg., Temperature of the air, Tension of Vapour, Humidity of Air, Wind, Rain S'w in in. Rows include dates from 1 to 31 and monthly totals (M).

Sum of the Atmospheric Current, in miles, resolved into the four Cardinal directions.

Table with columns: North, West, South, East. Rows include Mean velocity of the wind, Maximum velocity, Most windy day, Least windy day, Most windy hour, Least windy hour, Mean diurnal variation.

Highest observed Temp. - 51.0, at 2 P. M., on 7th } Monthly range:
Lowest regist'd Temp. - 13.2, at A. M., on 21st } 37.8
Mean Highest observed Temperature - - 36.54 } Mean daily range:
Mean Registered Minimum - - - - 26.53 } 9.96
Greatest daily range - - - - 22.2 from 6 A. M., to 10 P. M., on 17th.
Warmest day - - 7th - - - Mean Temperature - 47.65 } Difference:
Coldest day - - 21st - - - Mean Temperature - 16.72 } 30.93

The "Means" are derived from six observations daily, viz., at 6 and 8, A. M., and 2, 4, 10 and 12, P. M.

Comparative Table for December.

Table with columns: Year, Temperature (Mean, Max, Min, Range), Rain (D'vs, Inches), Snow (D'vs, Inch), Wind (Mean, Velocity). Rows include years 1840 to 1852 and monthly means (M'n).

The column headed "Magnet" is an attempt to distinguish the character of each day, as regards the frequency or extent of the fluctuations of the Magnetic declination, indicated by the self-registering instruments at Toronto. The classification is, to some extent, arbitrary, and may require future modification, but has been found tolerably definite as far as applied. It is as follows:—

- (a) A marked absence of Magnetical disturbance.
(b) Unimportant movements, not to be called disturbance.
(c) Marked disturbance—whether shown by frequency or amount of deviation from the normal curve—but of no great importance.
(d) A greater degree of disturbance—but not of long continuance.
(e) Considerable disturbance—lasting more or less the whole day.
(f) A Magnetical disturbance of the first class.

This is the mildest December since 1831, (the earliest date of observations at Toronto.)

The day is reckoned from noon to noon. If two letters are placed, the first applies to the earlier, the latter to the later part of the trace. Although the Declination is particularly referred to, it rarely happens that the same terms are not applicable to the changes of the Horizontal Force also.

Highest Barometer - - 30.210, at 4 P. M., on 22d } Monthly range:
Lowest Barometer - - 28.966, at 6 A. M., on 28th } 1.244 inches.