measuring the effect of temperature on plant life is that of recording daily the maximum and minimum. For comparison of different localities a fairly correct idea can be obtained from the mean temperature of the air during the hottest and coldest months, usually July and January, together with the absolute minimum reached during the year. These observations should be supplemented by the minimum temperature of the soil at different depths, but such figures are very rarely obtainable.

Precipitation.—In the absence of water, plant life would cease to exist. Hence rainfall and its frequency are very important factors and both are easily measured. The total rainfall during the chief growing months, that is, from June to September, furnishes a useful basis for comparison of different areas, but rainfall figures alone lose much of their value unless supplemented by the amount of evaporation for which, unfortunately, few records exist. Evaporation from a water surface is, in fact, an index of the combined effect of four other factors, namely, temperature, bright sunshine, wind, and humidity of the air.

Figures of total snowfall are useful, mainly, as providing a basis for estimating the amount of moisture likely to be added to the soil when the snow melts in spring. A snow cover also protects the roots of the plants against excessive minimum temperatures.

Light.—Light varies greatly at different points on the earth's surface, not only in its duration but also in its intensity. During the summer months the duration of daylight in northern latitudes is much greater than in places farther south and, even though the temperature in the former localities may be lower, this is compensated for to a considerable degree in the plant's economy by the longer exposure to light. The same is true of light conditions on the summit of a mountain as compared with the valley at its base, and partly explains why arctic plants occurring at low altitudes above the sea are also often found in alpine situations much farther south. The following examples taken at different latitudes will show how the average duration of diffuse daylight (as distinct from hours of bright sunshine) varies in different localities during the month of June: Fort Vermilion (lat. 58° 23′) 18·2 hours; Prince George (lat. 53° 50′) 16·7 hours; Swift Current (lat. 50° 20′) 16·3 hours; Annapolis Royal (lat. 44° 45′) 15·7 hours; Harrow (lat. 42° 02′) 15 hours.

As there is no simple or easy method of summing up the total daily light factor, the total hours of bright sunshine during the six growing months may serve to some extent to institute a comparison between different places. In this connection the data on the duration of daylight, given in the section on Meteorology at pp. 66 to 68, for places situated between latitudes 44° N. and 52° N., are of importance.

Wind.—Wind is important chiefly in promoting pollination of flowers so that seeds may be set; it also serves for the dispersal of many seeds and fruits over a wider area. Wind promotes evaporation of water from the surface of the soil but, as in the case of air humidity and of fog, it is seldom of more than local importance in the comparison of floral areas.

Altitude.—Altitude above the sea-level has a marked effect on climate and as a consequence on vegetation. Temperature falls about 1° F. for every 300 feet of ascent, while precipitation increases with altitude, taking the form of snow at higher levels. The duration of daylight also increases with altitude and the intensity of the wind is also greater. Owing to the difference in exposure to the sun's rays on