

of Western Canada. Several of our correspondents have also objected to annual figures which are the totals of the twelve calendar months of each year. To meet the needs of those who wish to inquire into possible periodicities, there are supplied on the following pages tables of the annual precipitation, arranged to cover the crop year from Aug. 1 to the 31st of the following July. These are to be found in Table 9 under the heading "P<sub>12</sub>". In a parallel column is given the average temperature of the months of May, June and July of the corresponding year. Since the mean temperature of the actual growing period (which is nearly that of May, June and July) gives a fairly reliable indication of the temperature of the soil, it was thought that these would be the most useful temperature data. Dividing the figures in the first column by those in the second column and multiplying by a constant, we obtain a quotient listed under the heading "Q". The soil moisture varies directly as the precipitation and inversely as the temperature of the soil. The figures listed under "Q" should, therefore, give some indication of the average soil moisture during the growing season of each year. Since there are no actual observations of soil moisture available (except those made at a few scattered points several years ago under the supervision of Dr. F. T. Shutt, Dominion Chemist), we can assign no absolute meaning to these quotients. All we can say is that they afford some reasonable basis for the inter-comparison of the individual years. In the diagrams the yields of wheat for a few recent years have been plotted alongside the values of "Q" for the nearest representative station.

It has also been urged by our correspondents that the success of western crops was not totally dependent upon the weather of the current year but also upon the weather of the immediately preceding years. Although several suggestions of this nature have been propounded, they may be briefly summarized by saying that two dry years in succession have a more detrimental effect upon the crop of the second year than a single contemporary dry season and that a good third year does not compensate for two previous dry years. For the benefit of those who would like the data arranged to suit this viewpoint, a second table has been included in which the quotients are arranged by progressive means and described as "weighted quotients" (Q<sub>w</sub>). These means were obtained by the following formula:—

$$\frac{a + 2b + 3c}{6}$$

The mean so obtained is credited to the year *c*. For the year *d* the figure is obtained from the formula:—

$$\frac{b + 2c + 3d}{6}$$

and so on up to the year 1932. In the accompanying diagrams these progressive quotients have been arranged to show the graphic history of western weather from this standpoint.

During the last fifty years there have been many meteorological stations established on the prairies but few of them have lasted very long. To obtain reliable district values for each year, using a shifting station network, we must submit the crude figures to considerable statistical transformations. It was, therefore, considered better for the present purpose to give the actual figures for a representative station of long continued record in each section of the west. The stations