tribution to the study of the influence of soil and climate on the composition of the sugar beet (Bulletin No. 74 of the Bureau of Chemistry), from which we abstract the following items. This study refers to the weather of the growing season of 1901. The experiments were made at Washington, D. C.; Lafayette, Ind.; Ames, Iowa; Lexington, Ky.; Lansing, Mich.; Geneva and Ithaca, N. Y.; Logan, Utah, Blacksburg, Va., and Madison, Wis. The soils at these stations were examined as to their physical and other characteristics, and with respect to these Dr. Wiley says:

> While it is doubtless true that the character of the soil influences to a greater or less degree the quality of some crops, yet it is certain that in the case of the sugar beet its principal influence is exerted almost exclusively upon the magnitude of the crop.

And again:

> It is evident that while the texture of the soil, as shown by the mechanical analysis, undoubtedly has a direct bearing on the yield per acre, it has practically no effect on the content of sugar in the beet. This is also true of the chemical properties of the soil.

As regards latitude and sunshine it may be said that with one exception, viz, Blacksburg, Va., at an altitude 2100 feet, the sugar content and the latitude seem to increase and decrease together. With regard to sunshine, the percentage of possible sunshine seems to have but little effect upon the sugar content, and it appears to be well established that the chemical activities of the sun's light in promoting the condensation of carbo-hydrate molecules in the chlorophyll cells are not notably diminished by filtration through aqueous vapor. As regards the distribution of sunshine, it must be said that the actual predominance of clear days is not to be reckoned as an important factor, except in so far as it may indicate drought, and thus interfere with the magnitude of the crop; thus the large number of clear days at Ames was accompanied by excessively dry weather. The relation between the average length of the day and the sugar in the beet is most interesting; in general the percentage of sugar increases with the length of the day. This is in harmony with the commonly accepted theory of the correlation of the functional activity of the chlorophyll cells and the light of the sun. Under the same general conditions, it is evident that the longer the hours of activity, the greater the amount of work accomplished; hence, with longer hours of daylight, the greater the quantity of carbo-hydrates that is formed.

As regards temperature, it is evident that the tendency of the sugar is to diminish as the temperature increases, but in general, the percentage of sugar in the beet increases with the coefficient of purity of the juice.

The chart showing the percentage of sugar in the beet, the altitude of the station, and the rainfall shows the remarkable effect of the altitude of the Blacksburg station. It is the altitude that has secured for this station the highest content of sugar in the beet. At the Washington station the lowest altitude coincides with the lowest percentage of sugar.

The absolute amount of rainfall does not have so great an influence on the composition of the beet as does its distribution. Give a sufficient quantity of water to secure normal growth, the beet is not very sensitive to a slight diminution or increase, but it is important that the rainfall be not too great in September, which is a period of ripening, nor in October, which is the season of harvesting.

IS THE MOON'S INFLUENCE ON THE WEATHER WORTH ANY FURTHER INVESTIGATION.

Rev. F. L. Odenbach, Director of the Meteorological Observatory, St. Ignatius College, Cleveland, Ohio, writes as follows:

> With reference to the rain theory of Mr. H. C. Russell, of Sydney, N. S. W., I have looked up the extensive literature on the subject extending through the two last centuries up to date. An immense amount has been written on the subject.
>
> The sum and substance of all the work done along this line has failed to bring out anything that might be considered a law or be used as a safe rule in questions of climatology or weather forecasting.
>
> I, myself, think that the moon (and why not the sun and the planets?) must have *some* influence on our weather. Yet this influence must be so slight, or so concealed, that all these years of observation and hard work have not resulted in anything worth considering.
>
> The great objection I have to this new exposition of Mr. Russell is that from the start he distinguishes between the rainfall on the coast and that of the interior. Why? In this point Mr. Russell follows all of his predecessors. The rule is bolstered up with exceptions and conditions, subconditions, and special combinations until the application becomes a mere guesswork. My general impression on the subject is that about as much time has been wasted on this matter as on the "Perpetuum mobile," and with about the same success. Being in this mood I think it best not to write anything for the REVIEW, for fear lest some might take up the matter and neglect other lines of much more importance and far greater utility. Had clouds received half the attention allotted to the moon I am certain we would have derived immense benefit from that study.
>
> I am at present spending all my spare time on this latter subject and hope that in the near future I will be able to send something for the REVIEW.

THE WEATHER OF THE MONTH.

By Mr. W. B. STOCKMAN, Forecast Official, in charge of Division of Meteorological Records.

PRESSURE.

The distribution of mean atmospheric pressure is graphically shown on Chart IV and the average values and departures from normal are shown in Tables I and VI.

The mean barometer was highest over the region from Kansas northeastward over central and western Lake Superior and northward over eastern North Dakota, with readings of 30.00 inches or slightly higher. It was lowest over the middle and southern Plateau regions, within which the lowest was 29.72 inches at Yuma.

The pressure was below the normal in southwestern New England, the Middle and South Atlantic and east Gulf States, eastern part of the west Gulf States, the Ohio Valley and Tennessee, eastern upper Lake region, lower Lake region, and the interior of the Pacific States; elsewhere it was above the normal. The greatest minus departures occurred over portions of North Carolina, and amounted to —.10 inch. The maximum plus departures occurred over the slope regions, Missouri Valley, northern portion of the Mississippi Valley, and North Dakota, and ranged generally from + .10 inch to + .15 inch.

Over the region from the Mississippi River westward to the one hundred and fifteenth meridian, except in Louisiana, on the Texas coast, and in southwestern Arizona, the pressure increased over that of May, 1903, with maximum departures amounting to +.10 inch to +.14 inch, in the slope regions and North Dakota. Over the remainder of the country the pressure diminished from that of May, 1903, and as a rule the departures were more marked, in the Atlantic States north of Florida, the eastern parts of the Ohio Valley and Tennessee, eastern upper Lake region, and lower Lake region, ranging from —.10 inch to —.22 inch.

TEMPERATURE OF THE AIR.

The distribution of maximum, minimum, and average surface temperatures is graphically shown by the lines on Chart VI.

In the Pacific States except southwestern California, Nevada, Idaho, Montana, western Wyoming, Arizona, and northeastern Minnesota the temperature was above the normal, but the departures were not very marked except in western Montana, Idaho, northern Nevada, and the eastern parts of Washington and Oregon, where they ranged from + 3.0° to + 7.3°; elsewhere the temperature was below the normal and as a rule