Chapter XII

THE WEATHER IN POLK COUNTY

The weather in Polk County is quite typical of the North Central Temperate Zone. The atmospheric conditions vary within the county. The open prairie of West Polk, where there is an open play of summer and winter winds, makes up the fringe area of the eastern Great Plains, while the semi-wooded areas of the eastern part of the county make up a fringe area of the forest section of the state. The cold winters and the freezing of the soil have profound effects on mellowing the heavy soils and inhibiting the growth of many soil parasites. The cold winter air crystallizes the precipitation into snow with only a minimum of sleet and ice. The snow, which generally remains throughout the winter, furnishes a protective blanket to the winter-annual, biennial and perennial crops.

The state, county and township roads have been built up, in recent years, above the general level of the surrounding land and requires a minimum of work to remain in good driving conditions throughout the winter. The winter drifting of snow which plagued the Polk County pioneers has been quite largely eliminated by improved highway construction, the use of temporary snow fences, the planting of windbreaks and the use of modern snow removal equipment.

Seldom has the total annual precipitation in Polk County been excessive. The normal distribution of rainfall throughout the growing season is adequate for the production of good crops. The fifteen to sixteen inches of precipitation for the six months beginning with April, with the moisture retentive soils of the Red River Valley are much less than is required to grow crops successfully in regions south where the soils are less retentive and the summer temperatures are higher.

**TABLE**

Climatic Summary, Average Temperature and Average Precipitation, Crookston—1931-1952*

<table>
<thead>
<tr>
<th>TEMPERATURE</th>
<th>Annual Avg.</th>
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<tbody>
<tr>
<td>Jan</td>
<td>Feb</td>
</tr>
<tr>
<td>5.0</td>
<td>9.4</td>
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<table>
<thead>
<tr>
<th>PRECIPITATION</th>
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<td>.59</td>
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* U. S. Weather Bureau Office, Minneapolis, Minnesota

Complete weather information can also be secured in Bulletin 408—"Fifty Years of Weather in the Red River Valley", Agricultural Experiment Station, University of Minnesota, St. Paul Minnesota. This data was compiled by Dr. D. C. Soine, agronomist at the Northwest Experiment Station, Crookston, from data collected at the Crookston reporting station.

Other weather data of interest: We can normally expect from 120 to 130 frost-free days during our growing season. Killing frosts
have occurred in Polk County after May 30th only five times in fifty years. According to O. C. Soine, "No definite trend has been followed in determining the dates of killing frost in the spring or fall. The shortest frost-free period occurred in 1915, with only 78 days, while longest frost-free period of 171 days occurred in 1914. The coldest winter month on record was February 1936, with the mean temperature -13.9 degrees. The lowest temperature on record was -51 degrees on February 15, 1936. The warmest summer month has been July. The highest temperature on record was 108 degrees on July 28, 1917." I have noted however that on only twelve times during the period 1900 to 1950 has the temperature been 100 degrees or more and never more than once in any one year.

NOTE:—Winter precipitation figures can be transposed into snowfall by allowing ten inches of snow for each inch of precipitation.

The prevailing winds from February through May and September through December are dominantly from the northwest. The percentage of time the wind blows from the various directions has been figured by Soine to be:

- Northwest 35
- South 29.0
- North 14.6
- Southeast 14.0
- Southwest 5.0
- Northeast 3.0
- West 1.5
- East 1.5

The snow mantle which covers the land in winter does not add materially to the water reserves in the soil. Much of it is lost through evaporation and most of the remainder is lost in the spring run-off before the frost leaves the soil. The winter snowfall is of inestimable value however in furnishing winter protection to crops, preventing deep freezing of the soil and furnishing essential humidity to the winter air. The driest years on record at the Northwest Experimental Station at Crookston since 1900 were 1920 and 1936, with 9.27 and 9.99 inches of precipitation, respectively. The longest dry period occurred between the years 1929 and 1936 with an average annual precipitation of 17 inches. During this period the water resources of northern and northwestern Minnesota were at their lowest ebb. While some long-season crops suffered from lack of rainfall during the drier years, yet in the forty-nine years of the writer's observations, there has never been a total crop failure.

Polk County must be favored geographically, because through the years it has not suffered from the excessive amounts of precipitation that have plaqued counties both north and south of our area. The greatest water damage to crops in the last fifty years occurred in 1919 when 8.33 inches of rain fell during the month of July, with more than half of that amount falling during the first few days of that month. The more than four inches of rain during the first days of the month resulted in floods which swept across some of the level lands of west Polk County. Following the run-off fair to good crops were harvester from the drained areas.
Map showing drainage ditches in Polk County. While the natural fall of the land is toward the northwest yet in west Polk county drainage is diverted into east and west ditches located along township roads.