great deal of work has been done which is proving satisfactory for the successful production of crops.

SOILS.

The soils of Polk County may be divided into three distinct areas as follows: First. The Eastern area of glacial-till, of a clayey nature, with a marked undulation to a hilly topography dotted with lakes, and which was originally wooded with hardwood timber.

Second. The “sandy ridge” area, a strip of land several miles wide and running north and south across the middle portion of the county.

Third. The prairie flats to the west of the “sandy ridge” area which extends in a magnificient plain to the Red River of the North, and which has a soil wonderful in its richness and fertility. It is of a lacustrine and alluvial origin, being deposited there by the waters of Lake Agassiz and the flood waters of the streams that emptied into the plain at a later day. The top soil varies from a sandy loam to a heavy clay loam. This dark rich loam varies from a depth of 12 inches to 30 inches. It is underlaid by a silty clay, which, in most cases, is almost impervious to water.

The plain has been cut through by numerous streams and rivers whose beds lie from ten to forty feet below the level of the prairie, affording excellent outlets for the numerous drainage ditches that have been constructed by the state and county. These ditches have a fall of several feet per mile and where these ditches have been made, drainage forms a simple problem to the farmer, which can be easily and cheaply effected by shallow surface ditches.

TEMPERATURE.

The mean annual temperature of Polk County is between 37° and 38° Fahrenheit. The mean annual temperature during the months of April to September is between 57° and 58°, and during June, July, and August between 65° to 66°. The average date of the last frost in Polk County is between the dates of May 15 and May 20. The average date of the first fall frost is September 22. This gives an average growing season for the county of between 120 and 130 days.

The average annual precipitation of the county is 22 inches, being greater in the eastern two-thirds of the county, where the average is 24 inches. The average of precipitation from October to March varies from 3.73 inches in the northwestern part to 5.31 inches in the eastern two-thirds of the county. The precipitation from April to September is 15.37 inches in the northwestern part of the county, and 17.07 inches in the eastern section. The evaporation varies directly with the temperature, and is, therefore, less rapid in northwestern Minnesota than in regions farther south. A rainfall of 24 inches in Polk County is equal in crop producing power to 40 or even 50 inches in lower latitudes. In the northern Red River Valley as much as 77 per cent. of the precipitation occurs in the growing season. This, and the fact that the average annual depth of evaporation from a free water surface in Polk County is from 20 to 30 inches, makes conditions that are favorable for crop producing and, particularly, for raising of small grains.

SETTLEMENT OF POLK COUNTY.

The settlement of Polk County was a part of the general movement that occurred in the late years of the decade of 1860 and the early years of that of 1870. In 1843, Norman Kittson established a trading post at Pembina, in the Red River Valley, which later became the location of a Hudson’s Bay Company’s post. In 1823, Major Long had ascended to the Minnesota portage through to the Red River, returning later by way of Rainy River and Lake Superior. This indicated the means of entry into Polk County, located in the center of the Red River Valley. Between the Mississippi and the Red River, the principal water route led up the Minnesota River, and over the portage at Browns Valley, from Big