HISTORY OF POLK COUNTY

CHAPTER I.

GEOGRAPHY AND GEOLOGY OF POLK COUNTY.

BY WARREN UPHAM.

PRINCIPAL RIVERS.

The great watercourses of Polk County are the Red River, which here flows nearly north-northwest, forming the western boundary of the county and the state, and its principal tributary, the Red Lake River, which takes a more meandering course. If the many small loops and bends of the latter stream are disregarded, however, its general route, from which the bends mostly deviate only a quarter to a half of a mile on either side, is seen on the map to be quite direct, running west and northwest through the central part of the county. The cities of Grand Forks and East Grand Forks are named from their situation where these streams unite, or rather where the lower rivers as it was seen by the Indians or the French voyageurs when coming up in their canoes.

Both these rivers have received translations of their Ojibway or Chippewa names, which these Indians gave to them on account of their being the outlet of the great Red Lake. Above the Grand Forks, indeed, the main Red River, as it is named by the white men, was called Otter Tail River by the Ojibways from the lake of that name on the upper part of its course. We may also go a step farther back to note that the name of Red Lake is likewise translated from its Ojibway name, given very long ago, according to the late Rev. Joseph A. Gilfillan, for twenty-five years a missionary on the White Earth reservation, from the bright red and vermillion hues of the sunset sky reflected upon the placid water of the lake; while Otter Tail Lake derived its Indian name from a long point of land, shaped like the tail of an otter, between the east end of the lake and its main inflowing stream.

FOREST AND PRAIRIE.

The southeast part of this county is sparingly timbered, mostly with groves of small poplars, being on the western limit of the originally forested region of the eastern United States; but it also has considerable expanses of original prairie, interspersed with the wooded and brushy areas. Westward a heavier growth of forest trees, including oaks, elm, basswood, box-elder, cottonwood, and other species, borders the rivers, usually reaching only a few rods and rarely a quarter of a mile from their banks. Otherwise the main western tract, forming a part of the broad and flat Red River Valley, is an extensive prairie, richly carpeted with grasses and flowers, being the eastern margin of the great prairie region of western and southern Minnesota, which thence continues west in the Dakotas and is gradually succeeded by the drier treeless plains that reach to the Rocky Mountains.

SURFACE FEATURES.

Although no very conspicuous hills or ridges diversify the surface of Polk County, it includes in its highest southeastern part two tracts of low drift hills, small ridges and knolls, called moraines, which were
amassed on the borders of the continental ice-sheet at times of pause or readvance interrupting its general departure from this region. The more northern of these tracts begins close east of Fertile and reaches about thirty-five miles northeast and east, with a width from one to five miles, passing close south of Erskine and onward to Gully station, near the east boundary of the county. The more southern morainic tract is part of a wider and longer hilly belt, stretching from Fosston southward into Mahnomen County and northeastward into and through Clearwater County.

Hills in each of these moraines occasionally rise 50 to 75 feet, or rarely more, above the adjoining and intervening hollows. Nearly all the surface is strewn with plentiful drift boulders, varying in size up to five feet or sometimes ten feet in length or diameter. Their abundance on the moraine belts is in remarkable contrast to their infrequent occurrence on other and smoother glacial drift areas that form much of this southeast part of Polk County and also the greater parts of Red Lake and Pennington counties, which originally were included in this county.

No rock outcrop is found in these counties, nor indeed in a very large region of western Minnesota, which is overspread with a vast sheet of the glacial and modified drift deposits to a depth commonly ranging from 100 to 200 feet or more, mantling and concealing the bed rocks.

Westward, along the low and flat valley of the Red River, fine alluvial silt, destitute of drift boulders or even pebbles, is spread over both the underlying rocks and the glacial drift, reaching in general about twenty or twenty-five miles from the river. This deposit, which has given this valley its fame as a very fertile wheat raising area, was laid down chiefly by river floods that flowed northward after the ancient lake of the valley had been drained away. If the valley silt were mainly of lacustrine deposition, it would extend farther from the Red River to the old lake beaches on each side of the valley at considerable heights above the flat river plain.

FLOODS OF RED RIVER.

The range between the lowest and highest stages of the Red River much surpasses that of any other river in Minnesota. At Breckenridge the range is about 15 feet, but it increases rapidly northward, becoming 32 feet at Moorhead, attaining its maximum of 50 feet in the south part of Polk County, and continuing nearly at 40 feet from Grand Forks to the international boundary and Winnipeg. Floods rising nearly or quite to the high water line thus noted have been rare, occurring in 1826, 1852, 1860, 1861, and 1882. They are caused in the spring by the melting of unusual supplies of snow and by heavy rains, and often are increased by gorges of ice, which is usually broken up along the southern upper portion of the river earlier than along its lower course. These floods attain a height only a few feet below the level of the adjoining prairie where that is highest, and along the greater part of the distance between Moorhead and Winnipeg the banks are overflowed and the flat land on each side of the river to a distance of two to four or five miles from it is covered with water one to five feet or more in depth.

HEIGHTS ABOVE THE SEA.

It is of much interest, for our consideration of the ancient water levels, that a brief notice be given to the altitude and general contour of Minnesota, and more especially of the basin of the Red River. The topographic features of the state may be summed up for its western three quarters as being a moderately undulating, sometimes nearly flat, but occasionally hilly area, gradually descending from the Coteau des Prairies and from the Leaf hills, respectively about 2,000 and 1,700 feet above the sea, to half that height, or from 1,000 to 800 feet, in the Red River Valley and to the same height along the valley of the Mississippi from St. Cloud to Minneapolis. The lowest land in Minnesota is the shore of Lake Superior, 602 feet above the sea; and the Mississippi flows past the southeast corner of the state at the height of 620 feet.
Lakes in northern and central Becker County, forming the sources of Ottertail River, the head stream of the Red River, are 1,400 to 1,500 feet above the sea; Ottertail Lake, 1,315 feet; and Red Lake, 1,176 feet.

Rainy Lake is 1,117 feet above the sea; the Rainy River descends 23 feet at International Falls, two miles and a half from the mouth of this lake; the Lake of the Woods is at 1,060 feet; and the Winnipeg River thence falls 350 feet to Lake Winnipeg.

At Fergus Falls the Red River descends about 80 feet in three miles, from 1,210 to 1,130 feet; at Breckenridge its height at the stage of low water is 943 feet; at Moorhead and Fargo, 866 feet; at Grand Forks, 784; at St. Vincent and Pembina, near the northwest corner of Minnesota, 748; and at the city of Winnipeg, 724 feet.

Heights of railway stations in this county, noted in feet above the sea, are as follows:

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GEOLITHIC ERAS.

During the early geologic eras of Archean and Paleozoic time, which were almost inconceivably long, Polk County appears to have been a land surface, receiving no rock formations. Probably then, as now, it was in the interior of a large continent, which with many changes has become the North America of today.

Through the greater part of the ensuing Mesozoic era, so named for its intermediate types of plants and animals, Minnesota was wholly a land area. The floras and faunas of this time were gradually changing from their primitive and ancient characters, called Paleozoic, but had not yet attained to the relatively modern or new forms which give the name Cenozoic to the next and latest great division of geologic time.

Toward the end of the Cretaceous period, in late Mesozoic time, western Minnesota was depressed beneath the sea. Frequent outcrops of Cretaceous shales and sandstone, continuous from their great expanse on the western plains, occur here and there in the central and southern parts of this state; and in numerous other places deep wells, after passing through the thick covering of glacial drift, encounter these Cretaceous strata, which sometimes are found to reach to a thickness of several hundred feet.

Ever since the uplift of the Red River basin from the Cretaceous Sea, it has stood above the sea level and has received no marine sediments. It was instead being slowly sculptured by rains and streams through the long periods of the Tertiary era; and during a part of the relatively short Quaternary era it was deeply covered by snow and ice similar to the ice-sheets that now envelop the interior of Greenland and the Antarctic continent.

These two eras, or principal divisions of geologic history, may be here classed together as a single Cenozoic era, distinguished by the evolutionary creation of new and present types of life. Nearly all the plants and animals of the preceding eras have disappeared, as also many that lived in the early Cenozoic periods, while new species succeeding them make up the present floras and faunas.

THE ICE AGE.

The last among the completed periods of geology was the ice age, most marvelous in its strange contrast with the present time, and also unlike any other period during the very long, uniformly warm or temperate era which had preceded. The northern half of North America and northern Europe then became enveloped with thick sheets of snow and ice, probably caused chiefly by uplifts of the lands as extensive high plateaus, receiving snowfall throughout the year. But in other parts of the world, and especially in its lower temperate and tropical regions, all the climatic conditions were doubtless then nearly as now, permitting plants and animals to survive and flourish.
until the departure of the ice-sheets gave them again opportunity to spread over the northern lands.

High preglacial elevation of the drift-bearing regions is known by the depths of fjords and submerged continuations of river valleys, which on the Atlantic, Arctic and Pacific coasts of the north part of North America show the land to have been elevated at least 2,000 to 3,000 feet higher than now. In Norway the bottom of the Sogne Fjord, the longest and deepest of the many fjords of that coast, is 4,000 feet below the sea level. Previous to the Glacial period or Ice age, and doubtless causing its abundant snowfall, so high uplift of these countries had taken place that streams flowed along the bottoms of the fjords, channeling them as very deep gorges on the borders of the land areas.

Under the vast weight of the ice-sheets, however, the lands sank to their present level, or mostly somewhat lower, whereby the temperate climate, with hot summers, properly belonging to the southern portions of the ice-clad regions, was restored. The ice-sheets were then rapidly melted away, though with numerous pauses or sometimes slight readvances of the mainly receding glacial boundary.

On certain belts the drift was left in hills and ridges accumulated during this closing stage of the Glacial period along the margin of the ice wherever it halted in its general retreat or temporarily readvanced. Upon the greater part of Minnesota and North Dakota the only hills are formed of this morainic drift, ranging in height commonly from 25 to 75 or 100 feet, but occasionally attaining much greater altitude, as in the Leaf Hills of Ottertail County, Minnesota, which rise from 100 to 350 feet above the moderately undulating country on each side.

**GLACIAL LAKE AGASSIZ.**

When the departing ice-sheet, in its melting off the land from south to north, receded beyond the watershed dividing the basin of the Minnesota River from that of the Red River, a lake, fed by the glacial melting, stood at the foot of the ice fields, and extended northward as they withdrew along the valley of the Red River to Lake Winnipeg, filling this broad valley to the height of the lowest point over which an outlet could be found. Until the ice barrier was melted off the area now crossed by the Nelson River, thereby draining this glacial lake, its outlet was along the present course of the Minnesota River. At first its overflow was on the nearly level undulating surface of the drift, 1,100 to 1,125 feet above the sea, at the west side of Traverse and Big Stone counties; but in the process of time this cut a channel there, called Brown's Valley, 100 to 150 feet deep and about a mile wide, the highest point of which, on the present water divide between the Mississippi and Nelson basins, is 975 feet above the sea level. From this outlet the valley plain of the Red River extends 315 miles north to Lake Winnipeg, which is 710 feet above the sea. Along this entire distance there is a very uniform continuous descent of a little less than one foot per mile.

The farmers and other residents of this fertile plain are well aware that they live on the area once occupied by a great lake, for its beaches, having the form of smoothly rounded ridges of gravel and sand, a few feet high, with a width of several rods, are observable extending horizontally long distances upon each of the slopes which rise east and west of the valley plain. Hundreds of farmers have located their buildings on these beach ridges as the most dry and sightly spots on their land, affording perfectly drained cellars even in the most wet spring seasons, and also yielding to wells, dug through this sand and gravel, better water than is usually obtainable in wells on the adjacent clay areas. While each of these farmers, and in fact everyone living in the Red River Valley, recognize that it is an old lake bed, few probably know that it has become for this reason a district of special interest to geologists, who have traced and mapped its upper shore along a distance of about 800 miles.

Numerous explorers of this region, from Long and Keating in 1823, to General G. K. Warren in 1868 and Professor N. H. Winchell in 1872, recognized the
lacustrine features of this valley; and the last named geologist first gave what is now generally accepted as the true explanation of the lake's existence, namely, that it was produced in the closing stage of the Glacial period by the dam of the continental ice-sheet at the time of its final melting away. As the border of the ice-sheet retreated northward along the Red River Valley, drainage from that area could not flow, as now, freely to the north through Lake Winnipeg and into the ocean at Hudson Bay, but was turned by the ice-barrier to the south across the lowest place on the watershed, which was found, as before noted, at Brown's Valley, on the west boundary of Minnesota.

Detailed exploration of the shore lines and area of this lake was begun by the present writer for the Minnesota Geological Survey in the years 1879 to 1881. In subsequent years I was employed also in tracing the lake shores through North Dakota for the United States Geological Survey, and through southern Manitoba, to the distance of 100 miles north from the international boundary, for the Geological Survey of Canada. For the last named survey, also, Mr. J. B. Tyrrell extended the exploration of the shore lines, more or less completely, about 200 miles farther north, along the Riding and Duck mountains and the Porcupine and Pasquia hills, west of Lakes Manitoba and Winnipegosis, to the Saskatchewan River.

This glacial lake was named by the present writer in the eighth annual report of the Minnesota Geological Survey, for the year 1879, in honor of Louis Agassiz, the first prominent advocate of the theory of the formation of the drift by land ice. Its outflowing river, whose channel is now occupied by Lakes Traverse and Big Stone and Brown's Valley, was also named by me, in a paper read before the American Association for the Advancement of Science, at its Minneapolis meeting in 1883, as the River Warren, in commemoration of General Warren's admirable work in the United States Engineering Corps, in publishing maps and reports of the Minnesota and Mississippi River surveys. Descriptions of Lake Agassiz and the River Warren were somewhat fully given in the eighth and eleventh annual reports of the Minnesota Geological Survey, and in the first, second, and fourth volumes of its final report; and more complete descriptions and maps of the whole lake, in Minnesota, North Dakota, and Manitoba, were published in 1895 as Monograph XXV of the United States Geological Survey.

Several successive levels of Lake Agassiz are recorded by distinct and approximately parallel beaches of gravel and sand, due to the gradual lowering of the outlet by the erosion of the channel at Brown's Valley, and these are named principally from stations on the Breckenridge and Wahpeton line of the Great Northern Railway in their descending order, the Herman, Norcross, Tintah, Campbell, and McCauleyville beaches, because they pass through or near these stations and towns. The highest, or Herman, beach is traced in Minnesota from the northern end of Lake Traverse eastward to Herman, and thence northward, passing a few miles east of Barnesville, through Muskoda, on the Northern Pacific Railway, and around the west and north sides of Maple Lake, which lies in Polk County, about twenty miles east-southeast of Crookston, beyond which it goes eastward to the south side of Red and Rainy lakes. In North Dakota the Herman shore lies about four miles west of Wheeland, on the Northern Pacific Railway, and the same distance west of Larimore on the Pacific line of the Great Northern Railway. On the international boundary, in passing from North Dakota into Manitoba, this shore coincides with the escarpment or front of the Pembina Mountain plateau; and beyond passes northwest to Brandon on the Assiniboine, and thence northeast to the Riding Mountain.

Leveling along the upper beach shows that Lake Agassiz, in its earliest and highest stage, was nearly 200 feet deep above Moorhead and Fargo, a little more than 300 feet deep above Grand Forks and Crookston; about 450 feet above Pembina, St. Vincent, and Emerson; and about 500 and 600 feet, re-
spectively, above Lakes Manitoba and Winnipeg. The length of Lake Agassiz is estimated to have been nearly 700 miles, and its area not less than 110,000 square miles, exceeding the combined areas of the five great lakes tributary to the St. Lawrence.

After the ice border was so far melted back as to give outlets northeastward lower than the River Warren, numerous other beaches marking these lower levels of the glacial lake were formed, and finally, by the full departure of the ice, Lake Agassiz was drained away to its present representative, Lake Winnipeg.

While the outflow passed southward, seventeen successive shore lines, marked by distinct beach ridges, were made by the gradually falling northern part of this lake; but all these, when traced southward, are united into the five beaches before noted for the southern part of the lake. During its stages of northeastern outflow, a lower series of fourteen shore lines were made. Thus Lake Agassiz had, in total, thirty-one successive stages of gradual decline in height and decrease in area.

The earliest Herman beach has a northward ascent of about a foot per mile, but the lowest and latest beaches differ only very slightly from perfect horizontality. It is thus known that a moderate uplift of this area, increasing in amount from south to north, was in progress and was nearly or quite completed while the ice-sheet was melting away. Before the Glacial period, all the northern half of our continent had been greatly elevated, producing at last the cold and snowy climate and the thick ice-sheet; in a late part of that period the land was depressed under the weight of the ice, which in consequence melted away; and latest, at the same time with the departure of the ice-sheet, the unburdened land rose a few hundred feet, the uplift having a gradual increase toward the central part of the country formerly ice-covered.

In comparison with the immensely long and ancient geologic periods that had preceded, the final melting of the ice-sheet, the deposition of its marginal moraines and other drift formations, its fringing glacial lakes, and the attendant uplifting of the land, occupied little time and were very recent. The entire duration of Lake Agassiz, estimated from the amount of its wave action in erosion and in the accumulation of beach gravel and sand, appears to have been only about 1,000 years, and the time of its existence is thought to have been somewhere between 6,000 and 10,000 years ago.

**BEACHES AND DELTA IN THIS COUNTY.**

The south line of Polk County crosses the highest beach near the middle of the south side of Garfield Township, about two and a half miles southeast of Fertile. In the east edge of the southeast quarter of section 28 and the west edge of the northwest quarter of section 27, Garfield, this beach is a typical ridge of gravel and sand, with its crest 1,166 to 1,173 feet above the sea. There is a gradual descent toward the west. The depression on the east is a sixth to a fourth of a mile wide, sinking 6 to 10 feet below the beach. Farther eastward the land is moderately undulating glacial drift, rising 20 to 30 feet above the beach and bearing frequent groves of small poplars, bur oak, and canoe birch.

When Lake Agassiz stood at its greatest height, the Sand Hill River brought into its margin a delta six miles long from south to north and three miles wide, reaching from the upper beach to the west side of Garfield and continuing south through the northwest part of Sundal in Norman County. The surface of this delta deposit of stratified gravel and sand descends slowly westward and is crossed by the lower Herman and Norcross shores, though these lake levels are not there generally traceable. The Tintah shores pass along its western margin, which in some portions was worn away to a low escarpment, steeper than its original frontal slope, while the eroded sand and gravel, after being carried some distance southward, but not wholly beyond the delta, were deposited in beach ridges. Upon the delta plain many dunes of small and large size, seen from a distance of ten or twelve miles across the lower expanse at the west, have been heaped up by the winds, probably mostly before vege-
tation had spread over this area after the withdrawal of the glacial lake.

In the south half of section 32, Garfield, and in a belt which thence extends approximately north and south, the surface of the delta, as it was originally deposited, falls toward the west with a slope of 25 or 30 feet in a mile, from 1,125 or 1,130 feet to about 1,100 feet above the sea. Beneath the original surface, however, channels have been eroded by the winds, and sand hills 25 to 75 feet above it have been blown up in irregular groups and series, scattered over a tract about a mile wide and extending three or four miles southward from the Sand Hill River, in section 29, the northeast part of section 30, and in section 31 and 32, Garfield, and reaching southward in sections 5 and 8, Sundal. An isolated group of these hills lies north of the Sand Hill River, in the northwest quarter of section 16, Garfield. These sand dunes are in part bare, being so frequently drifted by the winds as to allow no foothold for vegetation; other portions are clothed with grass or with bushes and scanty dwarfed trees, including bur oak, the common aspen or poplar, cottonwood, green ash, black cherry, and the frost grape.

The upper Herman beach, the first of the series which was formed in the vicinity of Maple Lake contemporaneously with the single Herman beach farther south, runs approximately from south to north, through or near the northeast corner of section 4, Garfield. It is a smooth gravel ridge, with its crest 1,165 to 1,175 feet above the sea. The second Herman beach, in the east part of section 5, this township, and section 32, Godfrey, about a mile west of the upper beach, has a height of 1,149 to 1,153 feet, being a ridge of gravel and sand about forty rods wide, with very gentle, prolonged slopes toward both the east and west. A half or two thirds of a mile farther west, the third Herman beach, passing through the northwest quarter of section 5, Garfield, and the west part of section 32, Godfrey, has a height of 1,130 to 1,135 feet, forming a distinct ridge in its southern part, but farther north being a flat area of gravel and sand, slightly elevated above the land next east.

Thence the Herman beaches are very finely developed for a distance of six to eight miles northward, passing through Godfrey Township into the southeast part of Tilden, where they curve to the northeast and east. From this great bend of their course, these beaches pass eastward by the northeast end of Maple Lake and by Mentor and Erskine. The highest Herman beach is traced onward northeast and east to Trail and Gully railway stations; and it continues through Clearwater and Beltrami counties, passing close south of Red Lake.

Maple Lake, the largest of the many lakes in the southeast part of Polk County, is 1,169 feet above the sea. In its curving course west and north of this lake the highest beach of Lake Agassiz is magnificently exhibited, forming a massive, gently rounded ridge of gravel and sand, about thirty rods across, with the crest of its highest portion, along a distance of two or three miles, at 1,178 to 1,186 feet.

On the Fosston line of the Great Northern railway and on the same latitude with the eastwardly curving beaches north of Maple Lake, three small beach ridges are crossed about two and a half miles east of Benoit, the elevation of their crests being successively 1,062, 1,069, and again 1,069 feet, in their order from west to east. These probably represent the upper Tintah beach. One and a quarter miles farther east a more massive beach is crossed, with its crest at 1,092 feet, which is probably the lowest Norcross shore line. Other beach ridges crossed nearly one mile and a half and again nearly two miles east of the last, with crests respectively at 1,114 and 1,120 feet, are apparently referable to upper Norcross stages of the lake. The next beach noted on this railway, three quarters of a mile farther east, at the height of 1,142 feet, belongs to the lower portion of the Herman series.

In section 34, Liberty, close south of the Sand Hill River, the Campbell shore is marked by a low eroded escarpment of the glacial drift or till, the top of which is 1,010 feet above the sea, being probably 10 feet
higher than the lake level when it was made. It runs in a nearly due north course, parallel with the well-developed McCauleyville beach ridges which lie a half to two thirds of a mile farther west. Continuing northward through Liberty and Onstad townships and the southern two thirds of Kertsonville, the Campbell shore is almost continuously a terrace cut in the till, having a descent of 10 to 30 feet within as many rods. Numerous boulders, remaining from the wave erosion, are strewn on a narrow belt below the terrace. The erosion was in progress along the greater part of this terrace during both the upper and lower Campbell stages of the lake; but a beach ridge of gravel and sand, which was accumulated along its base during the lower stage, extends through section 5, Onstad, and into the adjoining sections.

From the southeast part of section 9, Kertsonville, the Campbell shore takes a north-northeastward course for the next ten miles to the southwest corner of the township of Red Lake Falls and to the Red Lake River. Along this extent it bears a conspicuous beach deposit, on which several farmhouses are built, their cellars being dug to the depth of six or eight feet in gravel and sand, while the surface on each side of the shore line is till. For the greater part of this distance there are two parallel beach ridges, usually occupying together a width of about fifty rods. The crest of the eastern and higher beach is 1,012 to 1,015 feet above the sea, and that of the lower beach about 1,000 feet, varying from this only one or two feet. Each ridge has a descent of four to six feet toward the east, and their western bases are respectively at 995 and 985 feet, approximately. The upper and lower Campbell levels of Lake Agassiz, which heaped up these beaches by their waves, were very nearly at 1,000 and 990 feet.

Several much later and lower stages of this ancient ice-dammed lake, after it had ceased to outflow at Brown’s Valley, are represented by beach ridges traced in nearly parallel south to north courses through Crookston, Parnell, Belgium, Euclid, Angus, and adjoining townships. The lowest beach observed in this county, passing through sections 10 and 15, Tabor, is referred to the Gladstone stage of the lake, named from Gladstone in Manitoba. The southern end of the waning Lake Agassiz had then receded from Brown’s Valley to the vicinity of the mouth of Sand Hill River, and its depth of water above the present Lake Winnipeg was reduced to less than 200 feet.

Two relatively small deltas were formed in the east edge of the lake by the Buffalo and Sand Hill rivers, while its west edge received four deltas, each much larger in both area and thickness, namely the Sheyenne, Elk Valley, Pembina, and Assiniboine deltas. All of these remarkable tributary sand and gravel deposits were brought by inflowing streams during the earliest and highest Herman stages of the lake, though each was considerably channeled and in part borne farther to lower levels during the later and lower stages. In every instance the delta formations were supplied mainly by drainage from neighboring portions of the melting and departing ice-sheet. Alike on the east and west sides of the Red River Valley, the retreating border of the continental glacier nearly adjoined the ancient lake, being melted back from south to north as fast as the lake grew northward and made its earliest beaches.

Above the Sand Hill delta, southeastern Polk County was yet covered by the ice, melting fast away every summer, when its drift supplied the sand beds of the delta. Not far distant northward, the front of the ice-sheet stretched across the valley, but it was gradually yielding its place to the great glacial lake. Soon the originally smooth delta expanse, laid bare by the land uplift and the declining lake levels, was partly blown by the winds into high and picturesque sand hills, before protecting vegetation could overspread the surface.
CHAPTER II.
THE EARLY INDIAN INHABITANTS.


The record of the early human occupation of the Red River Valley of the North is very incomplete and imperfect. It seems quite probable that from creation until a few hundred years ago it was not occupied at all by human beings, and its only denizens were the wild birds of the air, the wild beasts of the prairies and scanty forests, and the fishes of the lakes and streams. There are no signs of a remote settlement or other form of ancient civilization in the Valley.

That very ancient and very mysterious race, which, for inability to coin a more suitable name, we call the Mound Builders, and which lived at one period in the southeastern part of the State, never dwelt, for any considerable time in the Red River Valley. At any rate, none of their mounds and tumuli, which invariably denote and prove their former presence, are found here. There are mounds but they were not built by the old Mound Builders. The so-called Red Indians were the first human occupants, but their occupation was fugitive, unstable, and disconnected.

It is true that there are mounds or tumuli within the present boundaries of Polk County, and that some authorities have pronounced these to be the work of the old Mound Builders; of course these authorities are of those that believe the Mound Builders were the immediate ancestors of the Red Indians. The principal mound in the county is now within the limits of Crookston, and only three-fourths of a mile from the center of the city. It is on the south bank of the Red Lake River and 35 feet above the stream.

In about 1890 Prof. Moore, then principal of the Crookston City Schools, and some of his pupils made excavations in this mound and found in it human bones, including skulls. From the reports made to the compiler of this examination it does not seem that any pottery, flint, stone, or copper implements, or any other reliable evidences of Mound Builder work or occupation were found. These evidences certainly would have been unearthed had the old pre-historic race been the builders. Their work and former sites of occupation are almost as readily determined as those of the ancient Greeks and Romans.

In noting the Crookston mound Hon. William Watts plausibly suggests that it marks the site of the cemetery of an old-time Sioux village. This may be a correct theory, although we now know a great deal of the early and very early history of the Sioux, and we do not know that (at least within the proper time when skulls and other human bones would be preserved for a long time in the earth) there was ever a...
considerable Indian village at the site of Crookston. If the Sioux had such a village, it must have been of the Sisseton band (Sissetonwans, or People of the Marsh), because the Sissetons were later located not very far to the west or south; we know their early history fairly well, and we have no account of such a village in that part of the country. Possibly the mound may have been the burial place for a village of Cheyenne Indians, for we well know that they were in this quarter for several years before they were driven out by the Sioux and went into various parts of South Dakota and the southeastern part of North Dakota, and mainly upon the river which still bears their name as it is commonly pronounced.

Both the Cheyennes and the Sioux built mounds over their dead; both tribes made and used pottery. But their mounds were simple sepulchres and their pottery was solely for domestic purposes. In 1680 Father Hennepin found the Sioux of Mille Lacs boiling their food in fire-proof earthen pots, which they had made. But neither tribe built large, high mounds, for temples of worship, for observation or watchtowers, and for the burial places of their chiefs or kings, as the Mound Builders always did. Neither tribe made flint and stone implements, either arrow and lance heads or axes, spades, etc., and the Mound Builders constantly made these things. The Sioux, Cheyennes, and other Red Indians picked up the flint arrow points and lance-heads and used them (though many of them had come from quarries as far off as West Virginia), but they could not make them—and none of them ever knew who did!

It is probable that the Crookston mound was made to cover the remains of their warriors slain in some pre-historic battle, in which the Sioux were the victors and had the opportunity of decently interring their dead. The Sioux often, and indeed almost commonly, raised a slight mound of earth over the skeletons of their dead. If not slain in battle, their dead were suspended in trees or placed upon high scaffolds until the flesh was gone, and then the bones were taken down and buried. Sometimes the remains were buried in receptacles made in the banks of streams and coulees, and even in the big mounds made by their predecessors in the country, the Mound Builders. The idea probably was to honor the venerated remains and to preserve them from destruction or desecration. Many a modern Indian's bones have been found in a Mound Builder's sacrificial mound, and thus fairly justifying the belief that the mound itself was the work of modern Indians.

There is a possibility that the great battle between the Sioux and the Chippewas described by Warren as having occurred on Sand Hill River, and mentioned on another page, was really fought on the Red Lake River and that the Crookston mound is the grave of the Sioux warriors killed there—as suggested on another page. But there is no positive evidence in support of this suggestion, and Warren is clear in his statement that the battle was on the Sand Hill River. There is no mound on the Sand Hill near the supposed site of the battle, although the Sioux held the field and had the opportunity to bury their dead properly according to their custom, with a heap of dirt raised over them.

Prof. Winchell's "Aborigines of Minnesota" mentions (p. 361) the Crookston mound and gives its dimensions, when he surveyed it, in 1880, as "7 feet high and 120 feet in diameter." The location is, however, erroneously given as "about two miles southwest from Crookston."

The "Aborigines" notes (p. 362) another mound in what is now Polk County, and which is described as having a diameter of 50 feet and a height of four and a half feet. Its location is given as in township 148, range 45, not far from Melvin Station.

The Sand Hill River mounds are also noted on page 362 of "Aborigines." These are three small mounds, averaging about four feet high and 50 feet across, which are located in township 147, range 45, west of Fertile. It is difficult to tell without examination by digging into them whether these are natural or artificial. There are numerous erroneous statements in "Aborigines"—typographical errors often—regard-