FARMING IN THE FAR WEST—EVENING.

## DAKOTA WHEAT FIELDS.

OF the four hundred million bushels of wheat produced in the United States, by far the largest portion is sown in the fall, and is called winter grain. The varieties are conditioned by soil and climate, the latitude of Milwaukee marking in general the northern boundary of winter wheat.

The area suited for the production of wheat sown in the spring hitherto has been of limited extent, but there is an undeveloped section of the country so wide and far-reaching that it may be regarded as the great summer wheat field of the future. Its capabilities are so vast, and the insurance of production so certain, that the millions of the Old World may ever think of it as a land that will supply them with bread.

A traveller making the tour of the St. Lawrence and its connecting chain of lakes, landing at Duluth, and journeying west over the Northern Pacific Railroad two hundred miles, beyond the forest region of the Upper Mississippi, will find himself on the eastern edge of this bread land of the future—the valley of the Red River, a stream flowing northward to Lake Winnipeg, and thence to Hudson Bay.

In August, 1869, the writer of this article rode over this former hunting ground of the Sioux, where through by-gone ages they chased the buffalo and fought the Chippewas. The valley of the Red River was a vast expanse. No hill, no gentle undulation, nothing but the fringes of trees along the streams, bounded the sight. It was a reach of prairie unbroken by the plough. Our own voices, or the song of meadow-lark, plover, and curlew, and other fowl, alone broke the solemn and oppressive stillness of the solitude. At Georgetown the Hudson Bay Company had reared a house, and two or three settlers had set up their cabins upon the banks of the river. We encountered a man whose birth-place was in Virginia, who had been a frontiersman in Ohio, Indiana, Illinois, Wisconsin—a vidette of civilization.

"Have you any neighbors?" we asked.

"Oh yes; three families have just settled about twelve miles from here. They are getting pretty thick, and I shall have to move on, I reckon."

They have been getting thicker since,

and the locomotive is speeding its way across the valley, on to the Missouri, and beyond to the Yellowstone; it is flying down the valley to Winnipeg, and soon it will thunder along the Saskatchewan, far away in the distant Northland. Farm-houses dot the landscape; towns have sprung up; the traveller beholds piles of lumber, long lines of farm wagons, ploughs, seeders, harrows, reapers, threshers, and farm engines at every railroad station. Marvellous the change: in 1869 a furrowless plain; 1879, a harvest of eight million bushels of grain—ere long to be eighty million!

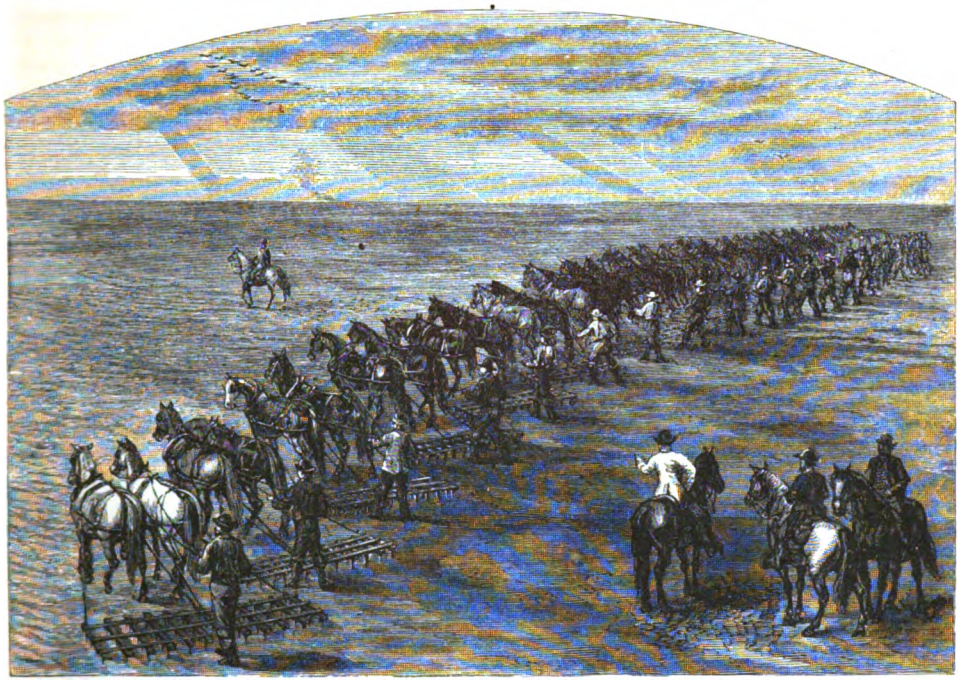
PLOUGHING.

The development of wheat culture in Northern Dakota is without a parallel. In March, 1875, Oliver Dalrymple, who had been a successful farmer near St. Paul, but whose earnings had been lost by unfortunate investments, rode over the lands west of the Red River, many thousand acres of which had been taken by Messrs. George W. Cass, of Pittsburgh, B. P. Cheney, of Boston, and the Messrs. Grandin Brothers, of Tidioute, Pennsylvania, holders of the bonds of the Northern Pacific Railroad. The bonds had been taken at par, but they had depreciated to ten cents on the dollar, and to save themselves from utter loss, they exchanged them for the company's lands. The March winds were bleak, and the last year's grass lay in a tangled mat upon the frozen sward, as the lone horseman rode over the treeless expanse.

"These lands intrinsically are worth twenty-five dollars per acre, or I don't know anything about farming," was Mr. Dalrymple's remark to himself.

His examination resulted in a contract with the owners of the lands for their development, and two sections, or twelve hundred and eighty acres, were ploughed the following summer, from which the first harvest was gathered in 1876, aggregating about 32,000 bushels.

Public opinion began to change. Other men before this had opened farms along the Red River, but none had pushed out so far upon the open prairie. Settlers came—soldiers with their land-warrants, men from Minnesota, Wisconsin, Ohio, taking homesteads on the government lands. Men of capital purchased the depreciated bonds of the Northern Pacific Railroad, and exchanged them for lands which cost them from fifty cents to one



HARROWING.

dollar per acre. In 1877 thousands of ploughs were turning the sod. Such the beginning.

Invention, system, capital, brains, are factors for success in most things in these days. The United States is supplying not only England, but Belgium, the Netherlands, and France, with bread at the present time, because the American inventor, comprehending the needs of the farmer, has supplied him with machinery to do the work of human hands.

The plough which the writer held in his early years for breaking the sod was made by the village carpenter and blacksmith. Its beam was hewn from a stalwart oak, twelve feet in length; its mould was the natural winding of a giant red oak, with a little additional curvature from the adze of the carpenter, with cast-off horseshoes and bits of an old saw nailed to the wood; its share was iron tipped with steel: an implement drawn by twelve oxen, with two drivers, a third man riding the beam to keep it in the ground, and a fourth following the furrow with a mattock to dig up the "boulks" and turn the turf which the plough failed to turn. With such an implement, managed by five men and twelve oxen, an acre and a half could be "broken" in a day, provided the ground was not too thickly planted with bowlders. Stories were current that in some localities amid the granite hills they were so abundant that the farmers punched holes in the sod with their iron hoes, dropped in a few kernels of corn, and turned their swine loose in the lot, whose insinuating snouts did all the ploughing possible.

In Dakota the farmer may mount his sulky-plough, ride till noon, if his acres extend so far, and reach home at night with a returning furrow. He need not hold the plough. His ten-year-old son or daughter might drive the team afield just as well. He does his "breaking" in June, which insures the required rotting of the turf. In the fall the decayed furrow is reversed, which is termed "back-setting," and then the harrow is applied to tear the turf to tatters. The more thoroughly this is done, the greater the yield in harvest. The cost of breaking, back-setting, and harrowing is about four dollars per acre. This prepares the ground for the seeding of the first crop. This preparatory work is all done in the summer and fall, and the ground left till spring.

Although the winters of Dakota are as cold as in Central New York, there is far less snow, and in the spring the Dakota husbandman has his seeding done by the time the farmer in the Empire State can drive his team afield. By the middle of March or the first week in April the ground has thawed sufficiently to permit the working of the seeders.

How invention has simplified husbandry! In our boyhood days we walked day after day in spring-time over the furrows, dragging a chain to mark a line for the sower, who, with basket strapped to his shoulders, marched with even paces, flinging the seed right and left, to fall in uneven patches upon the ground, some of it to be buried deep by the passing harrow, some to lie wholly uncovered. Instead of this, the Dakota farmer puts his seed in a long box mounted on wheels. If the seed is plump and fair and of first quality, he will graduate the machine to sow eighty pounds per acre; if the kernel is shrunken and less fair, he will need more—ninety or one hundred pounds. With unvarying precision the seed is dropped, each grain at a certain depth, evenly distributed, and not a kernel exposed, to be devoured by the birds hastening northward to their summer haunts. The farmer's boy or girl may do the seeding—fifteen acres in a day.

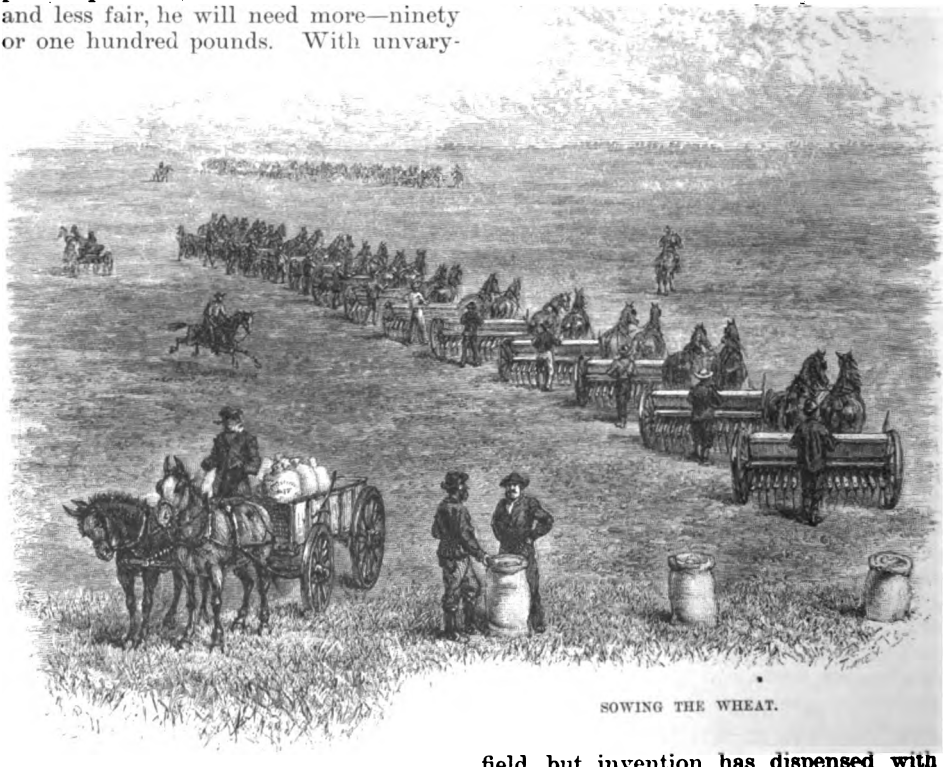
The seeding done, the owner of the fair acres may give his attention to other things till harvest. The harvest! Poets and painters have ever delighted in portraying the harvest scenes of Old England—the reapers bowing down to their work in the golden fields, maidens binding the sheaves.

"E'en the domestic, laughing dairy-maid
Hies to the field, the general toil to share."

Who has not seen pictures of the noon rest beneath the branches of an overspreading tree—the dinner basket, the jug of home-brewed ale?

"The lovely maid
In youth's own bloom and smiles arrayed;
Her hat awry, divested of her gown."

It never was, nor will it ever be, an American scene. True, in the early years of the republic women worked in the harvest field, but invention has dispensed with their labor as followers of the sickle. Those men who have devised mechanism for reaping and binding of grain have made it even for Old England a picture of the past. Ruth never will glean in the



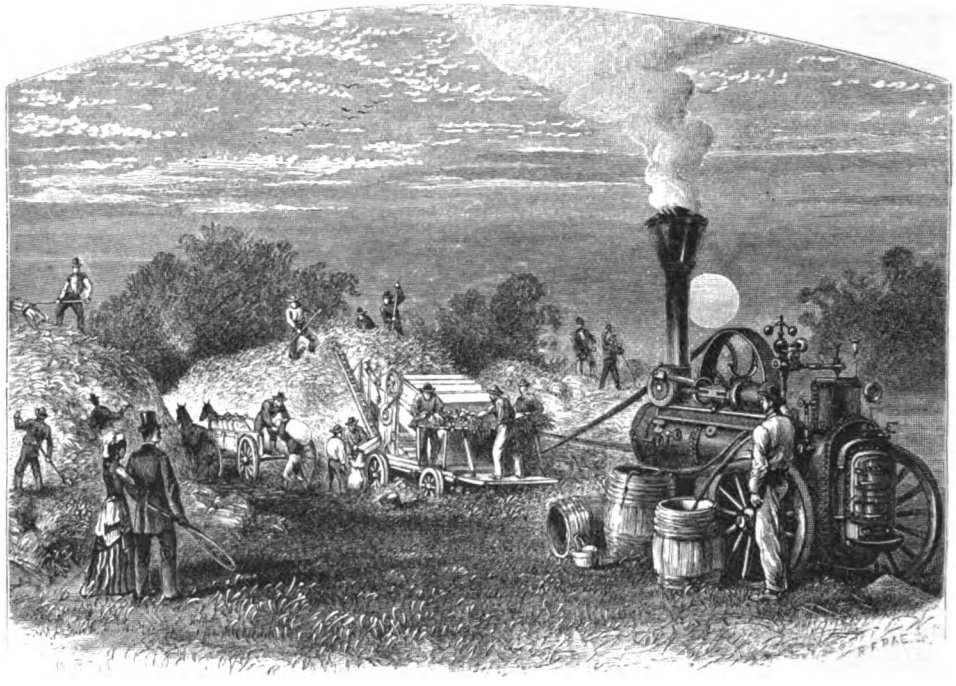
SOWING THE WHEAT.

REAPING.

fields of Boaz on American soil, or dip her bread in the vinegar at the noon lunch on the plains of Dakota. The sickle! Do we not remember it? Is there not a perpetual reminder on the little finger of our left hand, where the ragged edge of the gleaming hook flayed the flesh from the bone? And such aches in the back! We thank you, Messrs. Inventors, in behalf of every farmer in this republic, for abolishing back-aches in harvest.

In 1794 a son of Scotland invented "a most marvellous and wonderful machine for cutting grain," as the newspaper of the day described the grain cradle. "With which a man could do as much work in a day as seven men with the sickle," wrote the secretary of the Highland Agricultural Society. It was not every man, however, who could use the cradle. An expert—one who could lay his "gavels" straight and even—was a man to be looked up to in a community, who could earn his two dollars a day, against half that amount by ordinary laborers. He could save men from the back-ache. But the grain cradle is an implement of the past. In 1833 Obed Hussey took out his first patent for a reaping machine. Forty years passed before the inventor could perfect a machine that would reap and bind grain without the intervention of human hands. Since 1850 nearly 2,500,000 reaping and mowing machines have been manufactured in the United States. The annual production at the present time is about 160,000. In 1873 fifty tons of wire were used by the self-binding reapers; in 1878, *fourteen thousand tons!* so rapid the development. Probably in 1879 not less than 20,000 tons of wire were used.

Ride over these fertile acres of Dakota,



THRESHING.

and behold the working of this latest triumph of American genius. You are in a sea of wheat. On the farms managed by Oliver Dalrymple are 13,000 acres in one field. There are other farmers who cultivate from 160 to 6000 acres. The railroad train rolls through an ocean of grain. Pleasant the music of the rippling waves as the west wind sweeps over the expanse. We encounter a squadron of war chariots, not such as once swept over the Delta of the Nile in pursuit of an army of fugitive Israelites, not such as the warriors of Rome were wont to drive, with glittering knives projecting from the axles to mow a swath through the ranks of an enemy, to drench the ground with blood, to cut down the human race, as if men were noxious weeds, but chariots of peace, doing the work of human hands for the sustenance of men. There are twenty-five of them in this one brigade of the grand army of 115, under the marshalship of this Dakota farmer. A superintendent upon a superb horse, like a brigadier directing his forces, rides along the line, accompanied by his staff of two on horseback. They are fully armed and equipped, not with swords, but the implements of peace—wrenches, hammers, chisels. They are surgeons in waiting, with nuts and screws, or whatever may be needed.

This brigade of horse artillery sweeps by in echelon—in close order, reaper following reaper. There is a sound of wheels. The grain disappears an instant, then reappears; iron arms clasp it, hold it a moment in their embrace, wind it with wire, then toss it disdainfully at your feet. You hear in the rattling of the wheels the mechanism saying to itself, "See how easy I can do it!"

An army of "shockers" follow the reapers, setting up the bundles to ripen before threshing. The reaping must ordinarily all be done in fifteen days, else the grain becomes too ripe. The first fields harvested, therefore, are cut before the ripening is complete. Each reaper averages about fifteen acres per day, and is drawn by three horses or mules.

The reaping ended, threshing begins. Again memory goes back to early years, to the pounding out of the grain upon the threshing-floor with the flail—the slow, tedious work of the winter days. Poets no more will rehearse the music of the flail. The picture for February in the old *Farmer's Almanac* is obsolete. September is the month for threshing, the

thresher doing its 600 or 700 bushels per day, driven by a steam-engine of sixteen horse-power. Remorseless that sharp-toothed devourer, swallowing its food as fast as two men can cut the wire bands, requiring six teams to supply its demands! And what a cataract of grain pours from its spout, faster than two men can bag it!

The latest triumph of invention in this direction is a straw-burning engine, utilizing the stalks of the grain for fuel.

The cost of raising wheat per bushel is from thirty-five to forty cents; the average yield, from twenty to twenty-five bushels per acre. The nearness of these lands to Lake Superior, and the rates established by the railroad—fifteen cents per bushel from any point between Bismarck and Duluth—give the Dakota farmers a wide margin of profit.

Since the first furrow was turned in the Red River Valley, in 1870, there has been no failure of crops from drought, excessive rains, blight, mildew, rust, or other influence of climatology. The chinch-bug has not made its appearance; the grasshoppers alone have troubled the farmers, but they have disappeared, and the fields are smiling with bounty. With good tilth, the farmer may count upon a net return of from eight to ten dollars per acre per annum. The employment of capital has accomplished a beneficent end, by demonstrating that the region, instead of being incapable of settlement, is one of the fairest sections of the continent. Nor is it a wonder that the land-offices are besieged by emigrants making entries, or that the surveyors find the lands "squatted" upon before they can survey them; that hotels are crowded; that on every hand there is activity. During the months of May, June, and July, 1879, the sales of government land were nearly 700,000 acres, and the entries for the year will probably aggregate 1,500,000, taken in homestead, pre-emption, and tree claims. There are other millions of acres, as fair and fertile, yet to be occupied.

Over this domain, extending as far to the north as Athabasca Lake, large enough for ten or twelve States of the size of New York, nature has given a climate suited to the successful cultivation of summer wheat. Not that every acre of it has the requisite soil, for there are vast reaches which in coming years will furnish pasturage to flocks and herds, as they now do to the buffalo. It is a region from which the buffalo never departs. It is his summer and winter haunt. Where buffaloes can find pasturage, men can live and carry on successful husbandry.

Wonderful the mechanism of this world of ours, spinning in its orbit, whirling on its axis, keeping exact time in all its motions, in the flow of its tides and ocean current, the sweep of its winds! When the Creator set the planet whirling from west to east, there followed a secondary event—the flowing of the waters of the oceans at the equator in an opposite direction. The equatorial current of the Atlantic breaks upon the projecting headlands of Brazil, one portion whirling southward, another northward. The northern current becomes the Gulf Stream of the Atlantic, softening the rigors of climate in Great Britain and Northern Europe, and making those lands what they are. The Pacific westward current divides upon the island of Borneo, and its northern stream sweeps past Japan—a river in the sea, one thousand miles wide, flowing three miles per hour, with a temperature of 76°, ameliorating the climate of Alaska and all the far Northwest. The Rocky Mountains intercept the clouds born of that mighty stream, which pour out their moisture in copious rains, clothing British Columbia and Washington with forests. But over and beyond this range of mountains to the plains of the Saskatchewan flow the warm currents of air from the far-distant tropics, bringing the wild fowl, the blackbird, and the plover to the banks of the Peace River in the month of March.

A few years hence the locomotive will speed its way from Lake Superior to Puget Sound, within our own borders, and from Thunder Bay, on the north shore of the lake, westward four hundred miles to Winnipeg, and from thence northwest to the base of the Rocky Mountains. The latter road is being constructed by the Dominion government. Who can estimate the capabilities of this region when these are accomplished events? When we reflect that the Red River Valley alone, if under complete cultivation, has a capacity for the production of 400,000,000 bushels of grain, what may we not predicate of the capabilities of this summer wheat field, equal in area to the States of the Union east of the Mississippi?