# MINNESOTA

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AGRICULTURAL SERIES Nº 4

UNITED STATES RAILROAD ADMINISTRATION

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# FOREWORD



*St. Paul, Minnesota.*

Minnesota offers unusual opportunities for all persons seeking farm homes, no matter what his tastes or abilities. The man with plenty of capital can find highly improved farms and the man with very limited means can find cheap land. There are opportunities for the man who wants to do diversified farming, as well as for the man who wishes to specialize in small grains, potatoes, dairying, gardening, or in raising beef cattle, sheep, hogs, or chickens.

Minnesota has a variety of soils and kinds of land. There are gently rolling lands with streams and wood-lots and also level prairiees with rich clay loam suitable for general farming, sandy soils suitable for the raising of potatoes and similar products, and the rich cut-over lands of Northeastern Minnesota, especially suited for truck gardening and dairying.

There is no lack of educational opportunities. The State's school system is among the best and the large school fund insures the permanency of the State's support of public schools. Minnesota has taken an advanced position in the establishment of consolidated rural schools, and in promoting agricultural and vocational training.

The railroads bring markets within a few miles of every farm home, and the flour mills and stock yards of the Twin Cities, and the great inland port at Duluth, furnish splendid terminal markets. The highways of Minnesota are already ahead of those of many other states and the trunk highway system to be voted on next year will, if adopted, furnish a network of permanent, hard surfaced highways touching almost every community in the State.

Minnesota has become known as the sure-crop state. Total crop failures have been limited to such small areas as to be practically negligible.

J. A. A. Burnquist

Governor.

*St. Paul, Minnesota.*

This booklet has been prepared for the purpose of giving, in as brief and concise a form as possible, a survey of the agricultural possibilities and opportunities for farm-home building in Minnesota. A consistent attempt has been made to avoid meaningless words of glowing enthusiasm and to make only accurate, substantial statements of facts upon which the prospective settler may base a sound judgment as to the adaptability of Minnesota's conditions to his own needs and desires. The data upon which this information is based were found partly in the official statistics of the state and federal bureaus, and partly in the experience and observation of the writers of the different parts of the booklet, who were chosen for the service because of their long experience in agricultural development work in Minnesota.

The fundamental reason why there are such undeveloped agricultural resources in Minnesota is the fact that until comparatively recently there were ample areas of untilled prairie lands available for settlement. These prairie lands needed only to be cut up with the breaking plow to become immediately tillable. Much of Minnesota's undeveloped lands were, originally, covered by the "Big Woods," or by reason of inadequate drainage were incapable of immediate utilization as farm lands. Now, however, the forests have been removed by the lumbermen, swamps have been drained, railroads and roads have been built, and vast areas of fertile land lie open to settlement. It should be clearly understood, however, that these are not generally prairie lands, and that the problems of settlement and development are different from those of the open plains of the great prairie regions.

Hence it is not only to point out the possibilities and opportunities which are now available in Minnesota, but also to indicate briefly the methods by which the development of this new land can be undertaken with safety and profit that this booklet has been prepared.

The new settler will find many agencies available to give him assistance and advice in meeting his problems. The Department of Agriculture of the University of Minnesota, with its experiment stations and agricultural extension work, is ready to offer every possible assistance to farmers and homemakers. Several state departments, or commissions, are ready to assist with special problems of land settlement, rural finance, marketing of agricultural products, regulation of sale of foods, feeds, fertilizers, etc. In fact, Minnesota is well organized to afford help to new settlers in every possible way.

R. W. Thatcher

Dean of the Department of Agriculture,
University of Minnesota,
St. Paul, Minn.

Minnesota farmers profit by the combination of dairy, cattle and grain

# Minnesota

All the states in the Union offer opportunities and possibilities for agriculture. Minnesota is especially fortunate in this regard. It has a strategic location, a dependable climate, fertile soils, abundant rainfall, pure water, good markets, progressive men and women—everything needed, in fact, for a prosperous, permanent farm life. In addition, its mines, its forests, its manufactures, its railroads, its other resources are developing, and each is adding to the State's wealth and prosperity.

Old Jonathan Carver, writing more than 140 years ago, told of a region where trees bend under the weight of fruit, where meadows are green and luxuriant, where the waters teem with celery and wild rice, where the earth is stored with useful roots and is carpeted with beautiful wild flowers, where the hills rise boldly and are crowned with oak and maple. He also told of the wild duck, the swan, the brant, the goose, and the partridge. The region of which he wrote was Minnesota, and its beauty and fertility have reacted on its people, who enjoy their work in the fields during the warm summer and glory in the chill, bright sun of winter. In Minnesota there are beautiful rivers and streams, thousands of lakes and still to-day forests not yet wholly sacrificed to American haste and waste.

The agricultural history of Minnesota began with the story of the wheat field, and as the wheat fields pushed on further west diversified farming crept in, manufacturing sprang up, the lumber interests invaded the forests, and mining followed, until to-day every portion of the State is breathing activity and growing in wealth.

To Minnesota has been given the title "The Bread and Butter State," and justly so. This title alone speaks for the agricultural success of the State. The home seeker, hungry for a farm home, whether his means be large or small, need look no farther. There are yet in the older settled portions of the State, farms which have not reached a prohibitive price, but are priced according to actual returns in dollars and cents on the investment. There are yet

More clover—more crops—more cash for your bank account

prairie lands in the northwestern part of the State awaiting the plow. There are partly improved lands in the region left some time ago by the lumbermen, and in the more recently cut-over timber districts are rich, fertile lands that can be bought by the man of limited means and developed into farms, which, when developed, will equal in value those already established in the well settled districts.

The home seeker is likely to think of the northern part of the State as a desolate waste, or a region of dense forests, where he must pioneer as did his father and grandfather when they opened up their farms. The home seeker's wife naturally shrinks when she thinks of the hardships undergone by the early settlers. But no such pioneering is necessary. Good land is available on roads near good towns with good schools, in good communities, and with good neighbors whose interests are mutual.

Minnesota has all these things to offer the new home seeker, and it is the purpose of this booklet to present conditions as they exist to-day so that every home seeker will fully understand the situation and be able to choose for himself.

The geographical location of Minnesota is commanding. Except on the south and southwest its boundaries are natural. On the east is Lake Superior, the largest of the Great Lakes, the St. Croix and the Mississippi rivers. On the north is Canada separated by the Rainy River, chains of beautiful lakes, and lesser rivers and streams, and on the west is the Red River of the North. The entire area of the State is within the Atlantic watershed, the drainage reaching the ocean in three distinct channels. The largest area is drained through the Mississippi River, the northwest portion through the Red River of the North, into Hudson Bay, and the remainder is tributary to Lake Superior.

Among the states Minnesota ranks thirteenth in land area and nineteenth in population. Its total area is nearly 54,000,000 acres, or more than 84,000 square miles. Of this over 3,500,000 acres is water area, 10,000 lakes lying within the State's borders These lakes vary in size from small ponds to larger bodies of water many square miles in extent, such as Red, Mille Lacs, and Leech lakes.

The total population of Minnesota is now over 2,300,000. Of the total land area only a little more than one-half is devoted to farming at the present time, and the value of this farm property is about $2,500,000,000, not counting the great cities of St. Paul, Minneapolis, and Duluth. Fifty per cent of the inhabitants of Minnesota live on farms; of these nearly 80 per cent own their own farm homes. In other words, the farmers of this State are home owners and community builders.

There are nearly 9,000 miles of railroad in the State leading directly into the great markets of St. Paul, Minneapolis, and Duluth, the gateways and

The annual corn crop of the State is about one hundred million bushels

clearing houses for the Northwest.

The railroads have all been built with a view to the future agricultural development of the State, and the home seeker can locate within easy hauling distance of a shipping point and on, or close to, well constructed highways. Good roads spell dollars to the farmer when he is marketing his farm products, and the network of good highways constructed under state and county supervision furnishes evidence of Minnesota's realization that the public road is, and will be for generations to come, the basic communicating medium of social and business life.

The rural free delivery and rural telephone lines naturally follow the construction of these highways, and we find that in proportion to the rural population there are now as many rural delivery routes in Minnesota as in Iowa.

Duluth and Superior, at the head of the Lakes, offer direct water connection with the Atlantic seaboard and the European markets. St. Paul, Minneapolis, and Duluth with the greatest grain storage capacity in the world await the golden harvest every year. The South St. Paul live stock market takes the shipments of Minnesota cattle, sheep, and swine, affording the Minnesota farmer a market without the necessity of long hauls and unloading in transit.

Minnesota has long been known as a great wheat-producing state, but in recent years the corn acreage has increased immensely. This crop now ranks second and in the yield per acre is making the other great corn states look to their laurels.

Other leading crops are oats, barley, rye, flaxseed, hay, and potatoes.

**Crop Production for 1918**

| | | |
|---|---|---|
| Wheat | 79,710,000 | bushels |
| Corn | 110,000,000 | " |
| Oats | 134,372,000 | " |
| Barley | 43,000,000 | " |
| Rye | 8,700,000 | " |
| Potatoes | 32,700,000 | " |
| Flax | 3,120,000 | " |
| Hay | 2,590,000 | tons |

As a dairy state Minnesota is well toward the top, and her dairy cows were valued at the end of 1918 at $93,000,000. The dairy cow has made Minnesota one of the leading butter state of the Union, the annual output of butter being valued at $50,000,000. Other cattle are estimated as worth more than $48,000,000.

The Minnesota farmer being a farm owner has naturally developed the community spirit and this is reflected in the number of coöperative creameries, coöperative elevators, live stock shipping associations, and other coöperative enterprises.

The little old-fashioned, one-room schoolhouse is gradually disappearing, and the consolidated graded schools, paying special attention to agriculture, manual arts, and the practical household arts, are increasing. This is especially true of the northern districts, and the many free busses carrying the

Oats rank second as a small grain crop in the State

children to these schools are evidence of the keen interest taken in securing educational benefits for the young. In over 80 per cent of rural schools textbooks are free.

All of the things enumerated mean much to the new home seeker. Markets alone are as important as the soil. Location means practically as much. In making Minnesota your future home you are not severing home ties or breaking connection with your old friends and neighbors, but simply moving "next door" into a state which can fulfill all conditions required by the home seeker to assure his success. Land can be purchase at a price that will fit the pocketbook of the poor man, as well as meet the requirements of the man of means.

## GENERAL SOIL AREAS

The types of Minnesota soil vary from heavy clay to light sandy and peat soil. The peat soils are found most generally in Northern Minnesota, but as yet they have been but slightly developed. The shallower formations, where the peat is two feet or less in depth and underlaid by good clay soil, are being farmed successfully in many places. The deeper peat soils are still of uncertain value and should be avoided by the new settler.

Minnesota soils are mostly glacial drift, Houston County, the extreme southeast county, being the only exception. Starting at this corner of the State and traveling to the west over into the western part of Fillmore and Winona counties, and as far over as Mower, Dodge, and Goodhue counties, the major part of the soil is clay loam with clay subsoil, with gently rolling topography and scattered prairies and small hardwood timber sections. Further west, over into Freeborn, Steel, Waseca, and as far northwest as Meeker and part of Wright and Hennepin counties, is an area which represents a transition between the clay loam to the southeast and the prairie loam to the southwest. In this section, a part is prairie and a part is timber, and a portion is very rolling. The soil is generally a good black loam; some parts clayey and sandy, with usually a clay subsoil.

If one would draw a line through Albert Lea, Mankato, Hutchinson, and Willmar, and as far northwest as the intersection of Stevens and Douglas counties, he would cut off the southwestern part, which is, perhaps, the most uniform of any section of the State. It is a broad, level prairie, drained by the Minnesota, Des Moines, and Rock rivers; an excellent farming country, adapted to all the crops of the North Central States. The soil is generally a black loam, commonly called the "prairie loam" of the State, and there is usually a clay subsoil. In Stearns, Pope, Douglas, and part of Ottertail and Todd counties lies a district of black sandy loam,

Pasturing hogs means cheap pork production

more sandy than the prairie loam of the southwest. Some of this territory is quite rolling, and there is quite a variation in soil types. The percentage of sand increases going north into Wadena, Becker, and part of Cass counties. On the average, this is a good sandy loam. East of the Mississippi River is an area including parts of Isanti, Anoka, Sherbourne, Benton, and Morrison counties, which is, perhaps, more sandy than any other in the State. However, this sandy loam is spotted with farms of clay and clay loam. Owing to the glacial formation of the soils of this State, it is natural that they would not be of great uniformity. In fact, in every soil area there are several types.

Going northeast of this area into Kanabec, Pine, and Chisago, and part of Aitkin and Carlton counties, is also found the gray sandy loam, sometimes with sand and sometimes with clay subsoil. There are more areas of clay and clay loam soils in this locality than nearer the Mississippi River. Northern Aitkin, parts of St. Louis and Itasca, northern Cass and southern Beltrami counties represent still another area which is characterized by a gray sandy loam. Swamps are frequent; and rocks, generally hard heads, are scattered over many areas. There are many good tracts of land and many good sized areas of clay loam soil.

The northeastern corner of the State, including Cook and part of Lake counties, represents a hilly and swampy territory, with a large portion covered with moraines and many rocks. There are, however, localities which have good agricultural lands. Along the lake shore there is more clay; and as the elevation increases back from the lake, the land becomes more rocky. There are many small lakes made by moranic enclosures. Around Duluth is an area which extends back some miles from the lake, and which consists mainly of red clay loam interspersed with slightly sandy areas, and with scattering swamps. Much of this land is more or less rocky.

In the northwestern corner, along the Red River of the North, lies a valley which, from the standpoint of soils, is known practically all over the world. This is the Red River Valley, which ages ago was covered by a glacial lake known as Lake Agassiz. For many years water stood over this section and deposited material of an alluvial nature, which produced the rich soil of this fertile region. This valley includes Wilkin, Clay, Norman, Polk, Marshall, Red Lake, Pennington, Kittson, and Roseau counties. There is some gumbo and a little alkali soil in this area.

A typical scene in the Red River Valley—one of the most fertile grain producing sections of the State

## FARMING SECTIONS OF MINNESOTA

Minnesota may roughly be divided into four great areas: Southern Minnesota, Central Minnesota, the Red River Valley, and Northeastern Minnesota.

**Southern Minnesota** is a belt from 75 to 100 miles wide lying next to the Iowa border. Most of the country south of St. Paul and Minneapolis is usually thought of as Southern Minnesota. This is a region possessing wonderful advantages for diversified farming.

Prosperous cities, a network of railroads, permanent highways, good schools, good homes, and large barns, all combine to meet the ideal of the man who desires to remain in the "corn belt" but whose ambition for expansion is restricted by the advanced value of land.

There is no wild land in Southern Minnesota. Practically every acre is utilized for crops and live stock. Corn, barley, oats, spring wheat, and fall rye are the principal grain crops. Timothy, Kentucky bluegrass, clovers, and alfalfa insure the success of the live stock industry. All garden crops, small fruits, and apples are easily grown.

Farm improvements here are fully equal to those of Iowa, Illinois, and Indiana. Land values range from $100 to $200 an acre. The higher prices prevail in districts exceptionally well located.

When compared with land values in other states, and based on the actual returns from the capital represented, land in this part of Minnesota is a sound investment. In other words, there has not yet crept into this part of the State a condition of sentimental values such as may be found in the older agricultural states.

**Central Minnesota** is a strip about as wide as Southern Minnesota and lying just north of that area. It extends as far north as Little Falls and Fergus Falls, and is, in fact, bounded on the north by the timbered and cut-over lands of Northeastern Minnesota and by the broad level land of the Red River Valley.

This belt contains very great natural advantages for diversified farming: rich soil, favorable climate, abundance of water in streams and numerous lakes, delightfully rolling landscapes, and small groves of native trees. It contains many of the best improved farms to be found in any part of the United States.

It is a region of great variety from the level prairie lands of the western counties to the rolling prairie, lakes and woodlands of the central counties, and the timber belt of the eastern counties, now rapidly being cleared and cultivated.

Dairy herds like this add millions annually to the income of Minnesota farmers

Corn growing is rapidly coming to be general on farms formerly used mainly for small grain. Beef cattle and dairy cows are increasing in numbers rapidly. Silos are being built. Improved methods of farming are producing increasing returns which are reflected in a gradual increase in land values. The section farther east, where the surface is more rolling and where pasture and shade are abundant, is already one of the greatest dairy sections of the United States. Land improvement and clearing are rapidly extending this highly productive region. Good, improved farms here are worth from $65 to $125 an acre, the higher prices covering improvements of the very best character on farms well located. Uncleared lands or farms partly improved range in value from $25 to $50 an acre. There is some variation in soil but practically all of it will produce maximum crops.

This section is certain to appeal to the substantial home seeker in the quality of its farms and its obvious advantages in point of production and farm comforts. No doubt can exist but that farms of this region will continue to advance in value. The farmer coming to this part of the State from one of the older central states will find the pioneering done. It is a new country, but not raw. Moderate land values enable the owner of a small farm of high-priced land to establish the members of his family each on a farm of his own; thus meeting the demand for expansion without carrying a big debt on high-priced land.

In addition to corn and small grain, clover and timothy produce abundantly. Extensive areas specialize in potatoes and other vegetables, several hundred cars being shipped from individual stations each year. The quality of Minnesota potatoes has established permanent markets for them throughout the central and southern states.

Road-building has advanced so that all improved sections are well supplied, and unimproved land is within reach of good highways. Within a few miles of railroad towns some of the best wild land may be found.

**The Minnesota Red River Valley** is the basin of the Red River of the North. This river is the boundary between Minnesota and North Dakota. The Minnesota share of the Red River Valley is 30 to 100 miles wide and 200 miles long, lying along the eastern border of North Dakota. It contains the greatest area of smooth even land in the State. The valley is crossed at intervals by small rivers which afford natural drainage into the Red River.

The soil of the lower or main portion of the valey is a heavy black loam overlying clay of great depth and exceptional moisture-holding qualities. It lies even, without undulation to any extent but with sufficient slope for good drainage. The sections

Potatoes are a never failing cash crop for the new settler

having the best natural drainage are highly developed for farming and are found largely along the main or branch streams. Where drainage has been facilitated by ditch systems development has been slower, and it is this variation which accounts to the greatest extent for difference in land values in this portion of the valley.

A number of railroad lines traverse the valley, bringing all farms within a few miles of stations. The importance of such towns as Crookston, Thief River Falls, Warren, Ada, Breckenridge, Moorhead, bear evidence of the wonderful productiveness of the valley.

This level, black land makes a certain appeal to persons from similar regions of surrounding states. Its great productivity is quickly recognized by men familiar with such land.

In the early stages of farm development in this region, continuous crops of small grain were grown. Good crops were produced with a minimum of labor. As time advances, diversification and rotation increase. At present fields of corn, potatoes, clover, and alfalfa divide immense fields of wheat, barley, oats, and flax. Comfortable homes, large barns and silos, groves, fenced fields and pastures, herds of cattle and droves of sheep and hogs are coming to be the rule of these Red River Valley farms.

The opportunity here is for the man of moderate means to find room for expansion in acreage to meet the needs of his grown-up boys and girls. Lands may be purchased in this part of the State for $25 to $80 an acre, depending on the improvements and location.

Along the eastern edge of the main portion of the valley the surface changes from the even to the undulating or slightly rolling. The soil shows greater variation from heavy black to black sandy loam, and, continuing eastward, an increasing quantity of brush and trees are encountered.

Farm improvement and drainage are gradually extending. A great deal of the land is very cheap considering its productiveness. Good opportunities are offered for both grain and stock raising, as there are still large expanses of wild pasture at a minimum rental, an abundance of both hay and grazing.

**Northern Minnesota** has been slow in settling, not because of any lack of fertility, or because of location or climate, but because of the extensive lumber operations. This entire area—more than one-third of the State—has been a timber country. However, as the timber disappears, Northern Minnesota is being developed agriculturally. It is a natural grass country. The grasses and clovers grow profusely as soon as a clearing is made. For this reason dairying is of the first importance. The beautiful lakes, rivers, and numerous small streams afford the purest of water. In most localities where

Feed for cattle, logs for building, and fuel for the beginner in Northern Minnesota

corn is grown it is used for silage. Small grains and potatoes and root crops are grown successfully.

The class of timber which grows on these lands readily classifies the soils. The heavier soils usually carry only hardwood, or white pine timber, the subsoil being generally a heavy clay. The mixed hardwood districts, with a scattering of pine and poplar, are generally very desirable for all-round farming. This soil is a mixture of sand and clay, enough sand being present to give warmth to the soil and ease in cultivation. White pine is found on a variety of soils ranging from very heavy clay to soils that are quite sandy. One is generally safe in assuming that hardwood and white pine lands in this section are productive. A good deal of this land is too stony for easy cultivation, but much of it is free from stone and very desirable farming land. Hardwood land is somewhat easier cleared than white pine land, because if hardwood timber is cut off, especially if the land is pastured, the stumps quickly rot and disappear. White pine stumps rot very slowly. Norway pine land is lighter in type than the white pine land, but will grow fine stands of clover and grasses, and is capable of producing good crops. Jack pine land is the lightest of the sandy soils. With proper rotation and seeded to clover periodically it will pay good dividends to the careful farmer.

While only a small proportion of the good farm land of this section is as yet developed, there are, nevertheless, very many communities that are well advanced. Some of the very best roads and schools in the State are found here. Coöperative creameries furnish good markets for milk and cream. Potatoes are one of the principal cash crops, and facilities for marketing this crop are being properly provided. Here is the place in Minnesota where the settler can still find good farm land selling at the comparatively low price of $10 to $25 an acre for unimproved land. While much of this land is improved, the climate, soil, and markets are such that there can be no question about the future development. Good water, trees, lakes, and streams, plenty of fuel, and comparatively cheap building and fencing material afford opportunities for the development of farm homes under really desirable living conditions.

Settling in this section of Minnesota is by no means pioneering in the old sense of the word, because there are plenty of good opportunities where schools, roads, markets, and neighbors are accessible. The land is cheap merely on account of the fact that it is still covered with brush, stumps, and logs, which must be removed before it can become productive. The opportunities in Northern Minnesota are for actual settlers who will clear the land and make it productive. The opportunity here is for the man who has little capital but his own labor, or for the man with capital. The essential point is that the land must be developed. One cannot expect rapid advance in undeveloped land held merely for speculation.

Stump land pastures give good returns

Beef and brains make bank accounts for the farmer

## CEREAL CROPS

The growing of small grains—wheat, oats, rye, and barley—is an important part of farming operations almost everywhere in Minnesota. The harvest of grain that every fall flows into the granaries and elevators is a mute tribute to the productivity of the land, the industry of the farmers, and the extensive area of the State. The 1918 crop of 134,000,000 bushels of oats, 80,000,000 bushels of wheat, 43,000,000 of barley, and 8,000,000 of rye—a total of 265,000,000 bushels—shows how general and how extensive grain production is in Minnesota.

Wheat has been, and still continues to be, Minnesota's great cash grain crop. Throughout the Red River Valley and Central Minnesota the wheat raised is nearly all of the spring varieties—Marquis, Velvet Chaff, Fife, and Blue Stem particularly. In Southern Minnesota some winter wheat is raised, but hard spring wheat, for which Minnesota is famous, is the principal variety grown.

**Oats** is the greatest grain crop of the State in point of bushels grown, but a large part of the crop is used on the farms where produced. This crop seems to be adapted to every part of the State. In Southern Minnesota it is a cash crop, and a large acreage is commonly grown for sale, in addition to that required for farm feed. On the smaller farms, where the rotation calls for a grain crop once in three, four, or five years, oats are almost always sown. In Northern Minnesota, both quality and yield are especially good, returns of 70, 80, or 90 bushels an acre being recorded. The early 60-day oats are frequently grown in the north, and also often in Central Minnesota, so as to get the oats harvested before the wheat harvest is on. In Southern Minnesota the standard white varieties are common.

**Barley** as a feed crop or a cash crop is growing in favor. A large acreage is harvested annually, the 6-row bearded varieties being the favorite. Its early maturity, which makes possible a longer harvesting season, its large yield in pounds of feed per acre, and its splendid feeding qualities make this crop very popular. In regions where corn is not successfully grown, barley is extensively used for fattening hogs, being almost as satisfactory for that purpose as corn.

**Rye** is grown to a large extent on the lighter soils, but is also raised throughout the State. This crop is often thought of as a crop for poor soils only, but its adaptability in rotations and its excellent yields have brought it into favor with farmers generally. The winter variety is generally grown, but some successful trials with spring rye have been made.

Alfalfa is becoming a most important crop on grain and live stock farms

**Flax,** though not a cereal, is grown so generally it should be mentioned here. On new breaking it does especially well, giving a good crop while subduing the sod for other crops. It does well anywhere in the State.

## CORN

Cultivated crops are of special importance in the farming operations of Northern Minnesota. The limited acreage under the plow on many northern farms means that the largest possible returns must be obtained, and cultivated crops, especially potatoes and root crops, offer such returns.

Corn is the great cultivated crop of Southern and Central Minnesota, and is grown to some extent all over the State. In spite of the fact that the northern boundary is 400 miles from the southern, which means that the State's northern regions are well beyond the corn zone, it must still be remembered that the State ranks among the foremost as a great corn state. Its mighty crop of 110,000,000 bushels in 1918 is outranked by only one fact, and that is her average yield of forty bushels an acre. In 1918 Minnesota stood seventh in total corn yield among all the states of the Union. Corn is king in Minnesota, as in so many of the other states of the corn belt, and the farmers are looking forward to still greater results.

Corn may be grown in many parts of Northern Minnesota, but the settler who goes into Northern Minnesota must not expect the same results as his neighbor to the southward. Considerable silage corn is grown all through the Red River Valley and in parts of the cut-over region, and except in unfavorable years, ripe corn is also secured. Northwestern Dent, Minnesota No. 23, and the flint varieties are best adapted to northern localities.

## POTATOES AND ROOT CROPS

Potatoes are an important cash crop in Minnesota. The State produces about 30,000,000 bushels annually, about two-thirds of which are sold outside of the State. Most of the potatoes grown on a commercial basis are raised north of the Twin Cities.

Potatoes are the great cultivated crop of Northern Minnesota farms. For the new settler, with a small clearing, the potato crop offers a large return per acre, and for the better developed farm, with modern machinery and large-sized operations, they are also a profitable crop. The soil and the climate seem to be peculiarly adapted to the production of large yields of tubers of high quality, and yields of 200 to 250 bushels an acre are common, while many growers regularly expect even larger yields.

The poultry products of the State amount to approximately thirty million dollars annually

This man's share of Minnesota's thirty-two million bushel potato crop make him smile

Following the example of the Red River Valley, which has developed the widely-know and well adapted strain known as the Red River Valley Early Ohio, the entire northern section of Minnesota is swinging steadily toward certain definite varieties, best suited to the soil and climatic conditions. Of the late potatoes, probably the most popular variety is the Green Mountain, or Carmen No. 1, a splendid white potato which yields well and commands a ready market. The Rural New Yorker, or Carmen No. 3, is almost as generally raised. Russet Burbanks are in favor in some localities, and other varieties are found. These late varieties go on the market as table stock, and their crisp, firm flesh and splendid keeping qualities are winning for Northern Minnesota an enviable reputation as a potato-producing section.

Early varieties are Bliss Triumph, Early Ohio, and Irish Cobbler. These go on the market principally as seed stock for the southern trade, and the native influence of northern conditions in giving sturdy seed stock as well as freedom from disease and trueness to variety and type is bringing the southern trade to Minnesota in every increasing volume.

Many farmers raise one early and one late variety to lengthen their digging season and to concentrate on standardization of varieties.

**Rutabagas and other root crops** for stock feed are of great importance, especially on the farm with a limited acreage cleared. Northern Minnesota is a natural stock country. Pasture is abundant, or may easily be opened up, but the winter feed is not so easily provided. It is one thing to clear away the brush sufficiently to give plenty of pasture land. It is another matter to finish the clearing, to get out the stumps, and break the land in sufficient quantities to provide hay land to correspond with the pasture land. Consequently, the shortage of hay must be supplemented by crops which may be raised on a smaller acreage, and of all these other crops, rutabagas stand first. The yield is good, from twelve to fifteen or more tons an acre, so that a very small piece of ground will produce large returns. Root crops of this character are more than roughage; they take the place of grain which in many cases would have to be bought and they provide the succulence needed for the production of live stock.

Root crops as they are handled in Northern Minnesota do not require so much work as one might suppose. They are planted in rows and cultivated, and require one thinning and some hand work in weeding, but as the acreage is usually small on account of the very heavy yields, the work of caring for the crop is not excessive. In the fall, the crop

The clover crop raised in the northern part of the State insures ample pasture, winter feed, and soil fertility

is stored in cheap root-cellars near the barn so as to be handy for feeding.

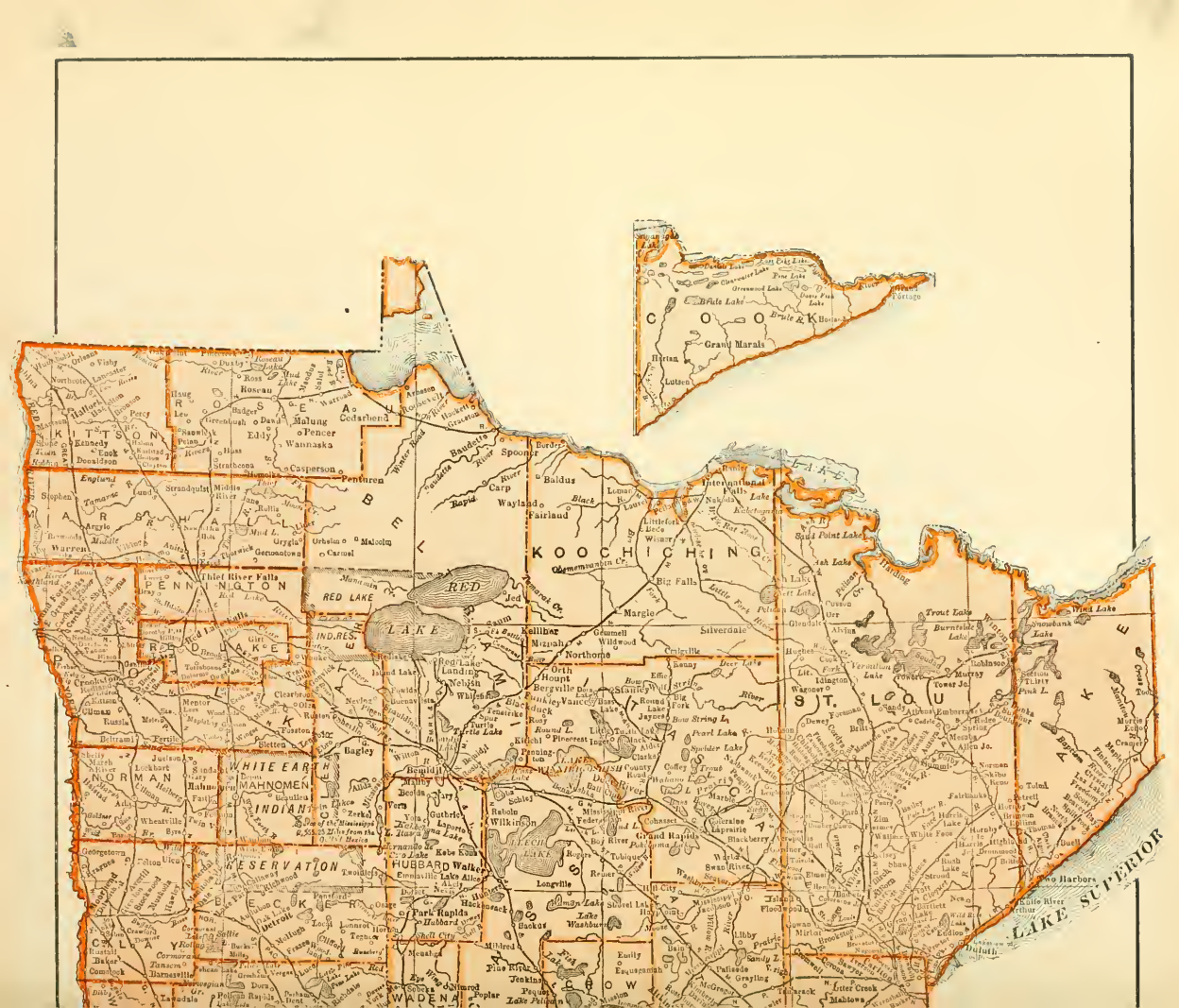
The price of rutabagas is often good enough to make rutabagas a profitable crop to raise for the market, but the farmer with a herd of cows in his barn and a good market for dairy products will usually gain by feeding this crop.

## HAY AND FORAGE CROPS

Minnesota points with special pride to its grass and hay crops. In addition to the great crops of grain, corn, potatoes, and other farm products, there is every year harvested a tremendously valuable crop of hay. Minnesota is a live stock state. Diversified farming is the rule, not the exception. The luxuriant pastures and heavy hay crops are necessary to the continued success of the live stock industry, which is the foundation of diversified agriculture.

The standard hay crop is a mixture of medium red clover and timothy. On low lands this is supplemented with alsike clover and redtop, but all over the State the red clover and timothy combination is seen. The clover, being a biennial, lasts only a year or two in the mixture, and after that a year or so of clear timothy is often secured before a meadow is broken up. Often such a meadow is turned into pasture for a time, though more often the rough or low spots of the farm are fenced in as permanent pasture, thus securing profitable yields from every acre of the farm. Left to itself, an old meadow will promptly grow up to Kentucky blue grass, though the process may be hastened by sowing in a little blue grass seed.

**Clover** is the most valuable of all the forage crops grown in the State. This is not only because of its wonderful growth and native adaptability, but because of its importance in the general Minnesota farming plan. The progressive farmer—whether in Northern or in Southern Minnesota—aims to put in a piece of clover nearly every year. It is the biggest and surest rotation hay crop he can get; it produces a fine aftermath for cattle, hogs, or sheep to pasture on in the fall; it leaves a fine texture to the soil when it is finally plowed under, and, more than all these, it leaves the soil enriched in nitrogen. This great crop seems to be especially adapted to conditions in Northern Minnesota. Seed scattered from the hay which the loggers took into this timbered region years ago started the crop and now it grows wild all over the north, wherever there is a clearing large enough to let it start. Consequently, the first thing a new settler does is to clear away a few acres of brush and scatter in a little clover seed. In a few months he has as fine a pasture as any cow could wish.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# MAP OF MINNESOTA

Many successful Minnesota farmers began this way

Northern Minnesota is a great clover-seed producing area, the lighter soils of the State being particularly adapted to seed production. In addition to the seed produced in this special region, clover is often hulled in other parts of the State, and, consequently, there is usually no difficulty in securing plenty of high class clover seed. Timothy seed is produced freely also, as well as alsike.

The advantage of securing home-grown seed is apparent, because it is sure to be acclimated and also because many farmers are able to raise their own seed, thus assuring a constant supply for replacement. A ready market is found for any surplus.

**Alfalfa** is successfully grown in every county in the State. The acreage of alfalfa is not large, because it has been so easy to get a catch of clover and other grasses that the grass necessarily grown in rotations has furnished all the hay and pasturage needed. On some of the more intensive live stock farms alfalfa is now raised quite extensively. Where alfalfa is grown, three crops are cut each year.

## HOME GARDENS AND HOME FRUIT

A considerable part of the home living of practically every Minnesota farm is furnished by the home garden. A small plot of ground, well planned and well tended, will yield a surprisingly large and regular supply of fresh vegetables and fruits, and at a very small expenditure of labor.

All common garden vegetables are readily grown anywhere in the State. Potatoes, beans, peas, lettuce, onions, radishes, carrots, beets, asparagus, rhubarb, cabbage, cauliflower, sweet corn, squash, pumpkin, turnips, rutabagas, Swiss chard, spinach, ground cherries, kohlrabi—these are a few of the common vegetables raised. Such small fruits as raspberries, strawberries, currants, gooseberries, blackberries, are usually raised in quantities sufficient for home use. Home orchards of summer and winter apples are common through Southern and Central Minnesota, and plums, grapes, and other fruit may be found in many orchards.

## COMMERCIAL FRUIT-GROWING

Fruit-growing on a commercial scale has been developed to a considerable degree in certain districts of the State. The best developed of these localities is that of the Lake Minnetonka district just west of Minneapolis. Hundreds of farmers in this district make the growing of raspberries, strawberries, and apples the main enterprise of their farms. Other well known fruit districts are in Houston, Washington, Fillmore, Wright, Crow Wing, and Aitkin counties. Raspberries are the chief commercial fruit crop in Crow Wing and Aitkin

Rye is particularly adapted to newly cleared land

counties, and raspberries and strawberries in Washington County. Near Mankato many acres are devoted to black raspberries and apples.

A special fruit-breeding farm is located near Excelsior to bring out new varieties of fruits. Such varieties as Minnesota No. 3 strawberry, Minnesota No. 4 raspberry are varieties that are very prominent. Minnesota No. 21 plum is receiving considerable favorable comment.

Many commercial apple orchards may be found throughout Southern Minnesota. Several splendid varieties of apples originated in Minnesota,, as for example, the Wealthy, well known for hardiness and excellent quality. This originated near Excelsior. Varieties best suited to the different localities have been developed both for commercial and home use. Lists of the varieties of fruits, vegetables, and ornamental plants, suitable for planting in the State, may be secured from the Minnesota State Horticultural Society which has headquarters in Minneapolis.

A very important development in connection with the commercial growing of small fruits in Minnesota is the plan of coöperative marketing. Practically every important small fruit section has one or more of these fruit-shipping associations which handle practically all the fruit grown in their respective localities. Each association has as manager an experienced fruit salesman who handles the business of the association. Ample warehouses and sheds are maintained, the fruit itself is carefully picked, graded, packed, and labeled, and everything possible is done to maintain a reputation for high-class production. These associations are a success in every way and are a practical example of Minnesota's coöperative spirit.

## LIVE STOCK

A report of the United States Department of Agriculture for January 1, 1919, shows the number and value of live stock in Minnesota:

| | Number | Value |
|---|---|---|
| Horses | 950,000 | $93,100,000 |
| Cows | 1,368,000 | 105,704,000 |
| Other cattle | 1,632,000 | 54,672,000 |
| Sheep | 642,000 | 8,474,400 |
| Swine | 2,784,000 | 79,344,000 |

This allows for each of the 160,000 farmers in the State 6 horses, 19 head of cattle, 17 hogs, and 4 sheep. Taking into account the fact that thousands of farms were recorded in the newer settled portions of the State, whose very recent development had not allowed time to accumulate much stock, an idea can be gained of the large amount of stock found on the average well developed farm. As a better idea of what a well developed Minnesota farm actually does contain, the average figures for Rock County, one of the older and well settled counties, are given. On the 1,200 farms reported for this little county of twelve townships, there was an

Sheep keep down the brush and make clearing easier

As the brush and stumps disappear, the farm develops

average for every farm of 9 horses, 36 head of cattle, 90 hogs, and 5 sheep.

On the larger farms of Southern and Central Minnesota, the raising of beef cattle and the feeding of cattle for market is common. Purebred herds of all the beef breeds are common, some of the best herds in America being found in Minnesota. Purebred sires for the heading of grade and purebred herds may be readily obtained, and as a consequence the herds are showing constant improvement.

Throughout the area the feeding of beef steers is a profitable practice. Especially on the larger farms, where a large amount of feed is available with a relatively small amount of help, the feed yard is the main channel for the disposal of the season's crop. The advantage of being able to ship to the South St. Paul market or to the Chicago or Sioux City markets, as circumstances warrant, is not lost to these feeders, nor is the opportunity of buying feeders from these near-by markets neglected.

There is a splendid opportunity for the general dairy farmer to secure good sires at reasonable prices from these herds, or to secure foundation stock for a purebred herd of his own. The best of coöperation exists between the established breeders and the new beginner, as every additional purebred herd or purebred sire means just that much more development to the live stock industry of the State.

## HOGS

Minnesota was designated by the United States Food Administration in 1918 as one of the eight leading corn and hog-producing states. Very rapid development has been made in swine-raising in recent years owing to a great increase in corn production and to the large production of barley. The thousands of cars of hogs that may be seen moving toward South St. Paul, Chicago, and Sioux City each winter are a visible proof of the importance of this great crop. And the prosperity left behind in cancelled mortgages in better houses and barns, in tile drainage, and in other improvements, indicates better than anything else the important part hogs have played and are playing in Minnesota's development.

All breeds are raised. There are purebred herds in large numbers, some of them being herds of national reputation. Duroc Jerseys probably outnumber any other breed, both as to number of breeders and in the number of actual hogs which reach the market. But there are many Poland China, Chester White, Yorkshire, and Berkshire herds, as well as those of other breeds.

The half-way point in the evolution of a Minnesota farm

## SHEEP

The great demand for wool during the last year or so has called attention to the importance of the sheep industry in Minnesota. Some sheep are raised in every county. There should be more. In Northern Minnesota, on the great cut-over pastures of that verdant region, sheep do especially well. Browsing through the brush and among the stumps, they turn a handsome profit from the partly cleared acres, while during the winter their warm coats turn the cold so that meager shelters and a minimum of feed bring them out in spring fit and ready for the lambing season and the spring pastures. Thousands of sheep have been shipped into Northern Minnesota during the last year or so, but there is room for many thousands more.

But it is not only on the cut-over farm that sheep may be found. Anywhere in the State they do well, and the farm flock is recognized on thousands of farms as an important branch of the live stock industry. A small flock will trim up the weeds, and clean up the aftermath from haying and harvest, at a good profit for the little extra feed they require, and they will keep the place looking neat and trim besides. Many farmers maintain small flocks of from ten to fifty head especially for this purpose, and find it pays.

Larger flocks are kept by many farmers. In the Red River Valley many such flocks may be seen, and they are found to be well adapted to the more extensive methods of farming practiced there.

## DAIRYING

Dairying in Minnesota has made its great growth in connection with diversified farming. Throughout a great deal of the State the dairy herd is an important part of the farming system, furnishing a profitable outlet for the pasture, roughage, and grain, and providing regular and profitable labor for the farmer and his family; at the same time maintaining the fertility of the farm and assuring a permanent system of farming.

Dairy products in Minnesota are marketed chiefly in the form of butter, and the butter industry of the State is almost entirely on the coöperative basis. Minnesota has more than 800 creameries and of this number more than 600 are coöperative, owned and operated by the farmers. The practical advantage of this close relation of the farmers to their creameries is seen in the fact that of the $49,214,876 received for butter by the creameries of the State in 1917, $44,176,033.18 was paid to the farmers for butterfat.

The cheese industry of Minnesota is now making marked progress. Many fine, new, modern factories have been built during the last year and cheese factory managers have offered very alluring prices to

The winter harvest in Northern Minnesota

farmers for milk. There are now about eighty-five factories manufacturing American, brick, and Swiss cheese. Last year 6,421,148 pounds were produced, the greater part of which was American cheese. Although the amount of cheese made in this State is less than that of some of the neighboring states, the quality is not surpassed by any.

**Poultry** has attained an important place on Minnesota farms. In fact, the average farm flock in Minnesota is larger than is found in most other states. The average egg yield per hen is also high. The climatic conditions assure a strong, healthy, and vigorous fowl and the farmers of Minnesota for several years have made rapid progress in developing a better class of poultry; not only aiming to obtain better egg yields but increased meat production.

Poultry progress has been made possible primarily through the efforts put forth by the county poultry organizations, which, at the present time number more than sixty. The object of these poultry organizations has been to better the quality of the poultry. To a considerable degree the cross-bred and low-producing hen has given way to well-bred, high-producing, full-blooded stock.

There are communities that have made a specialty of egg production. As an instance, the country about Barnum, Carlton County, has become famous as an egg-producing section. Within a radius of a few miles there can be found over 30,000 hens kept especially for egg production. Ten years ago $3,000 worth of eggs were produced annually in the Barnum district. In the year 1918 more than $53,000 worth were produced.

Turkeys, ducks, and geese are raised extensively in about every section of the State. For many


At the present time there are eight hundred creameries in Minnesota. More than six hundred being coöperative

A barley field in the northern part of the State

years it has seemed almost impossible to raise the usual number of turkeys in the eastern and midwest section of the United States. Still, the turkey industry in Minnesota during the last few years shows a very satisfactory increase. The most extensive turkey flocks are found in Northern and Western Minnesota.

In the southern and central parts of the State especially, water fowls are found in large numbers The ducks and geese each year figure extensively in the farm poultry operations.

In 1918, in the face of high-priced feeds, when practically every state in the Union fell considerably below its normal production, Minnesota was one of the three or four states that not only maintained its normal production of poultry and eggs, but showed an increase of more than 10 per cent.

## SCHOOLS

More than one-half of Minnesota's large rural population is made up of farmers, and more than one-half of its school children are enrolled in its rural schools. With singular foresight its leaders have guided and built up all its educational institutions. The State points with special pride and gratitude to their stewardship of the public school funds. A permanent school fund, accumulated from the sale of land, timber, and iron ore, of more than $28,000,000 has been built up and loaned. The interest on this fund, in addition to liberal legislative grants, has been a potent factor in building up the State's schools. There are now 7,176 rural school districts with a wide difference in area, property valuation, and population.

By means of state aid, the standardization of the rural schools began a number of years ago. This aid has been increased from time to time. A first grade rural school receives $100. In 1918 there were 6,577 state-aided rural schools requiring a legislative grant of $1,022,065.

This special aid has resulted in better trained teachers. The teachers' training departments in the State's high schools prepare annually about 1,500 teachers. These have at least three years of high school education and one year of professional training.

Better buildings and equipment. Every school has a good heating and ventilating system. In many cases new buildings have had to be erected in order that the district might receive state aid. Class A schools must be in session at least eight months.

It is not strange that the State, always concerned about the education of country boys and girls, should take the lead in building a new kind of country school. This school, larger in the area served, in enrollment, in valuation, and in possibilities, is

Modern consolidated country schools with their free busses take the children to and from school free of charge

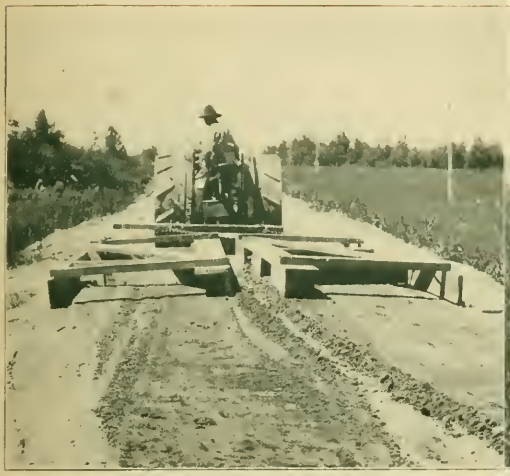
known as the consolidated school. Already 280 consolidated schools have been established and 12,000 children are daily transported to school. To aid in the building up of these large rural schools, liberal aid has been provided by the State. The buildings must be modern in every respect and provide special rooms for agriculture, manual training, and domestic science. To aid in the erection of such a building $2,000 state aid is offered. To help maintain industrial courses consolidated schools of Class A receive annually $500, and schools of Class B, $250. In order to make possible a large consolidated school many children must be transported by means of busses, and for this the State offers a maximum aid of $2,000.

Every community of Minnesota, with a population of 300, supports a state graded or a state high school. Instruction in graded schools is free to all pupils residing in the school district, and attendance at any high school is free to every boy and girl in the State. The courses of study aim to be in harmony with the child's home life and future activities. Industrial training is a part of the work in most of the high schools, and in a large number of graded schools. Courses in agriculture, manual training, and home eonomics, under the direction of well-trained teachers, are provided through the special encouragement of the State. Minnesota is acknowledged as the leader in its general scheme for industrial education through the public schools.

Minnesota supports six state normal schools: at Winona, Mankato, St. Cloud, Moorhead, Duluth, and Bemidji. The aggregate attendance in 1918 was 3,523. Tuition is free. Board and room are furnished at cost. Dormitories are provided at all of the schools. The course of study embraces two years of professional work. On its completion, the diploma issued becomes a state certificate. The normal school graduates find positions in the public schools, and there is a constant demand for a larger number of teachers from them.

Minnesota's varied population has always been loyal to its public schools and state educational institutions of a higher order. At the same time, there has always been room and opportunity for the private schools, academies, and colleges that have been established by the different religious denominations. These have grown to be important factors in education and special training, and include schools for girls, industrial schools, academies that train for public school service, and denominational school service, and many colleges that have a recognized rank among institutions of higher learning.

As a permanent means of support for public schools, Minnesota already has a fund of $28,000,000.



The road appropriation act requires road maintenance

The home comforts increase as the farm develops

This has been accumulated through the sale and lease of public lands granted by the National Government. The income from this fund is distributed annually to the public schools, on the basis of the number of pupils, between five and twenty-one years of age, enrolled and attending not less than forty days. The fund is invested in state and municipal bonds. Besides this, there is a state one-mill levy, which, together with the income from the permanent school fund, constitutes the current school fund. The amount from these two sources of income is about $2,000,000 a year. The aggregate amount of the current school fund distributed since 1864 is more than $51,000,000. The annual per capita from the current school fund is about $6. It will be seen that this is an important source of income in the maintenance of public schools.

## AGRICULTURAL EDUCATION

The Department of Agriculture of the University of Minnesota, including the experiment stations and sub-stations, the college and schools of agriculture, the agricultural extension division, including a county agent in each county, are all parts of one great movement for the improvement of the agriculture of the State. The agricultural work, as represented by these institutions, is but one part of the work of the University of Minnesota, which combines a college of medicine, a law school, a college of dentistry, a college of engineering, a college of science, literature, the arts, a college of agriculture, and many other branches, into one comprehensive institution.

The central experiment station is located at University Farm, St. Paul, and carries out any line of agricultural experiments that may be required in the agricultural development of the State. Many new varieties of grain, corn, and other products have been developed at University Farm as a result of the systematic and careful search for varieties exactly adapted to Minnesota's conditions, as for example, Minnesota No. 13 corn, and No. 23 corn, two of the most valuable varieties in the State; Minnesota 281 oats, and Minnesota 105 barley.

Branch stations at Crookston, Morris, Grand Rapids, Duluth, Waseca, and Excelsior make it possible to carry on the necessary experimental work under the conditions of soil, climate, and type of farming prevailing in various parts of the State.

Schools of agriculture are maintained in connection with the experiment stations at St. Paul, Morris, and Crookston. In these, hundreds of young men and women receive instruction every year in the subjects best suited to fit them to become the farmers and the home makers of the future.

Everybody goes to the County Fair

The course offered is practically the same at all three places, and consists of a three-year course of six months each year. Graduates of these schools may be met anywhere in the State. A recent census showing that 85 per cent of the young men who have graduated are farming or in farm homes. Any one with farm experience who has finished the eighth grade may enter. The expenses are very moderate and the schools are in session only from October to March. Hence these schools offer an exceptionl opportunity to the boy or girl, who is needed at home during the busy season.

The College of Agriculture, at University Farm, offers a four-year course leading to a degree of Bachelor of Science. High school graduates and others able to meet the entrance requirements usually take this course, which not only fits young men and women for farming and home making, but leads to teaching and experiment station or extension work.

The agricultural extension division is the branch of the agricultural college which reaches the people of the State who can not go to the college or the schools. A staff of trained men and women is constantly employed for the assistance of people anywhere in Minnesota who desire help in solving their agricultural problems. Not only that, but this body of men and women is constantly bringing to the attention of the people the best and most practical methods which the experiment stations and progressive individuals have developed. Farmers' institutes, short courses, and other meetings are held throughout the State, and so general and so well understood have these activities become that it is seldom that a locality is reached where the purpose and genuine assistance of this work is not appreciated.

## COUNTY AGENTS

A county agricultural agent is maintained in every county, usually with headquarters at the county seat. The services of the county agent are available without cost to any one, and the free use made of his familiarity and training in the agriculture and development of the county indicates how generally his services are appreciated. In a strong live stock county where the care and handling of live stock is of special importance, the county agent is usually a man with special ability in such work. In some counties, especially in Northern Minnesota, where potato raising has developed to a large extent, the county agents are emphasizing the importance of disease control, standardization of varieties, and other practices necessary for continued success in this branch of farming. The work of the experiment stations, the services of the extension division, and

Breeding pure blood dairy stock is a growing industry in Minnesota

the best and latest assistance from any source, is brought to the county by the county agents.

A new settler should get acquainted with the county agent in order to obtain practical assistance in securing a good location and a right start.

## TRANSPORTATION

Minnesota is well favored with reference to railroad transportation. The following federal controlled lines operate within the State: Chicago, Burlington & Quincy; Chicago Great Western; Chicago, Milwaukee & St. Paul; Chicago, Rock Island & Pacific; Chicago, St. Paul, Minneapolis & Omaha; Chicago & North Western; Duluth, Missabe & Northern; Duluth, South Shore & Atlantic; Great Northern; Green Bay & Western; Illinois Central; Minneapolis & St. Louis; Minneapolis, St. Paul & Sault Ste. Marie; Minnesota & International; Northern Pacific. From St. Paul and Minneapolis (the Twin Cities) and Duluth and Superior (the "Twin Ports") radiate railroad lines to all sections of the country, including four transcontinental lines to the Pacific coast. To the northward the railroad lines branch out into the Northwest; to the eastward they lead to Chicago, Milwaukee, and the eastern markets; to the southward to Des Moines, Kansas City, and St. Louis, and to the southwestward to Sioux City, Council Bluffs, and Omaha.

By reason of the adequate transportation facilities, St. Paul, Minneapolis, and Duluth have become the greatest primary wheat markets in America. The South St. Paul stock yards and packing plants offer an excellent market for cattle, sheep, and hogs. For Minnesota's butter the markets of the east and west are equally available. Lake transportation from Duluth gives Minnesota economical rates on export grain.

While the northern part of Minnesota is as yet only partly developed from an agricultural standpoint, here, as elsewhere, the railroads have pushed ahead of agricultural development, and with the exception of comparatively few districts, there is no land more than twenty or twenty-five miles from rail or water transportation; and there are thousands of acres of good undeveloped land that are distant only from five to ten miles from a railroad track. The prospective settler will find it unnecessary to go any great distance from a railroad and in many instances good improved or partly improved farms, as well as wild land, may be secured less than five miles from a town or shipping station.

Good auto and wagon roads traverse every section of the State, making it easy to transport produce to market, and the system of state highways is being rapidly extended each year, and Minnesota during the last ten years has made great progress in this direction.

Threshing peas in Northwestern Minnesota

## MARKETS

With respect to markets, Minnesota offers splendid advantages. St. Paul, Minneapolis and Duluth, the greatest grain markets in the world, are distributing centers of the whole Northwest. Practically seven-eighths of the wheat shipped to Minneapolis is ground into flour there. The Minneapolis flour mills have a daily capacity of 85,000 barrels, and 26,000,000 bushels of grain have been received in Minneapolis in a single month.

Minneapolis and Duluth stand first in the United States as a flaxseed market, and as a result have many linseed oil mills.

The immense tonnage passing through the Twin Ports is only exceeded by that of New York City. This direct water connection at the head of Lake Superior with the eastern and foreign markets means that the Minnesota farmer will always have access to the world's markets.

South St. Paul is recognized as one of the leading stock markets of the Middle West. The packing houses now have a large killing capacity of cattle, hogs, and sheep. Immense additional facilities are under construction. In 1918, 4,000,000 head of live stock were received at this terminal.

As a manufacturing state, Minnesota ranks twelfth in the United States. The great waterways are being harnessed and water power, "white coal," is causing manufacturing industries to spring up over the entire State.

Minnesota produces two-thirds of all the iron ore mined in the United States and one-fourth of all the iron ore mined in the world. The great steel plant at Duluth represents an investment of $25,000,000 and employs thousands of workmen.

All these industries mean much to the farmer in Minnesota. They bring the best markets to his very door. Three-quarters of a million people in the cities of Minneapolis, St. Paul, and Duluth are dependent on the farmer for food; and scattered throughout the State are ten live manufacturing cities of over 10,000 population each. The new settler locating in Minnesota will find not only a fertile farm, but profitable markets already provided.

## COÖPERATION IN MINNESOTA

The spirit of true coöperation is a prominent characteristic of farm life in Minnesota. More than 600 coöperative creameries are at work in Minnesota, every one of them a tribute to the efforts of the dairymen of its community to get together in the manufacture of a product that will be better, more economically produced, and more profitably sold than if handled in any other way. The coöp-

Minnesota has ten thousand lakes and millions of fish

erative elevators have accomplished much the same kind of thing in the storage and sale of grain.

A splendid example of the simplicity and effectiveness of coöperative effort may be seen also in the live stock shipping associations. When the members of an association have enough stock to make a carload, one of their number acting as manager ships the whole lot, marking each animal for identification. Hundreds of such live stock shipping associations are in operation in the State. From 60 per cent to 70 per cent of all live stock shipped is handled through these coöperative shipping associations.

The coöperative marketing of potatoes is another important phase of this movement. Associations owning warehouses and handling many cars every year are in successful operation. Fruit-shipping associations and other forms have also succeeded well.

## FISH AND GAME AND RECREATION

Minnesota stands well among the states of the Union in its wealth of natural resources; especially in wild life, game birds, quadrupeds, and fish. Notwithstanding the rapid development of its lumbering, mining, and agricultural industries, and its rapid growth in population, game is still abundant in many regions and fish are plentiful in the State's thousands of beautiful lakes and winding streams.

The State was one of the first to outlaw the spring shooting of birds, the sale of game, and other destructive practices. As a result within the borders of the State are to be found the cheery bob-white quail, the wary prairie chicken, the handsome partridge, and other grouse; waterfowl and shore birds sweeping over the prairies, marshes, and lakes; in season, furbearers of many species—the dainty deer, the sturdy bear, and the lordly moose.

The forest area of the State is of vast extent and much of it is of such a nature that it will remain indefinitely a haven for game. There are no arid, treeless wastes; the unsettled portions are all thickly covered with luxuriant vegetation. Besides extensive sanctuaries have been set aside for game, where the inhabitants of the forest will be forever free from molestation by hunters.

One-sixteenth of the area of Minnesota is water — mostly lakes varying in size from a few acres to 440 square miles in extent. The wide distribution of water makes possible for vast numbers the enjoyment of excellent boating, bathing, and fishing.

The commercial fisheries of the State employ more than 1,000 men who receive an annual wage of

Good highways may be found throughout the State, and are being rapidly extended

Numerous silos are an evidence of increasing prosperity on Minnesota farms

$500,000, represent capital of $700,000, pay a revenue to the State of more than $75,000, and produce $1,500,000 worth of fish annually for the markets. Commercial fishing is carried on at such places and in such a way as not to interfere at all with angling.

A well established and successfully operated system of hatcheries enables the game and fish department to stock more than a thousand lakes and streams every year with the choicest varieties of game fish. The output of the hatcheries last year, of fish actually hatched and planted in the waters of the State, was over 332,000,000. What has been extensively developed in fish propagation has been begun in game propagation. A game farm is in successful operation and 3,000 game birds a year are being liberated. An equal number of eggs is furnished to farmers.

## ADVICE TO THE NEW SETTLER

The man who moves to Southern Minnesota, Central Minnesota, or the Red River Valley will find new conditions, but he will find a type of farming not unlike that to which he has been accustomed. The man who goes to the great cut-over region of Northern Minnesota, though, will meet along with new opportunities, some new experiences. He should, therefore, searchingly study both the adaptability of himself and family to the new location, and also their ability to follow the successful practices of the northern farmer.

The man looking forward to settling in Northern Minnesota should consider carefully his available funds and present condition before moving. If he is saving money, he should stay by his present position till he may have from $800 to $1,500 left after the first payment on his land is made.

If, however, he is barely making a living now and is unable to accumulate any savings, he may do better to move at once, though he will be laboring under a handicap if he starts without capital.

For the sake of wife and family, a settler in Northern Minnesota should locate on a road and not too far from neighbors.

Land should be seen before it is bought. The entire tract should be examined deliberately, and, if possible, settlers should be talked with before a purchase is made. Soil conditions should be thoroughly understood, and muskeg or undecayed peat lands should be avoided.

Too much land should not be bought. Eighty acres in the cut-over district make a good farm for a man and the average family, with some boys to

Sheep thrive in every section of the State

help. If there is no help available except the settler's own labor, and funds are limited, forty acres will be found enough. Of course, if funds are available to do so without crippling the working capital, a farm of 160 acres or more should be secured. The original purchase price is only a small part of the cost of the improved farm.

Removal to the new location in the spring so as to get ready for the coming winter is preferable. Only a very small amount of stock should be brought—two, three, or four good milking cows, one team of horses, a brood sow, a few chickens, but usually no young stock.

When one is located, he should visit his new neighbors, ask questions, and observe methods.

A settler should also become acquainted with the county agricultural agent, who is usually a most dependable source of real information.

Potatoes and vegetables of all kinds for the home cellar, and plenty of feed, especially roughage, for the stock for the winter, should be the crops the first year on a new cut-over farm.

Some new settlers prefer to spend the summer or fall before moving to the new farm in opening land for the next season's crop. If this has been done, a well drained and well worked location should be selected for a garden, and sufficient potatoes, carrots, beets, cabbages, squash, cauliflower, onions, radishes, lettuce, and other vegetables for the summer's use and the winter's supply should be put in.

A half-acre or more of rutabagas should be put in for winter feed. Best results are secured if they are planted in rows from 24 to 30 inches apart and thinned to 10 or 12 inches apart in the rows.

A pasture should be opened by clearing away the brush, and logs. This should be disked or in some way worked up among the stumps, and a little clover, timothy, and blue grass should be sown.

If enough land is open, and a market is near, a small field of potatoes should be put in. The cash income from the potatoes in the fall will be much appreciated, and if well tended a small field should bring good returns.

It is not always best to wait till the stumps are removed before getting a crop on the ground. Often the brush can be cut, the logs picked up and burned, and a good crop secured among the stumps. This is especially true of hay and pasture crops.

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## AGRICULTURAL SECTION

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FOR THE USE OF ALL RAILROADS
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