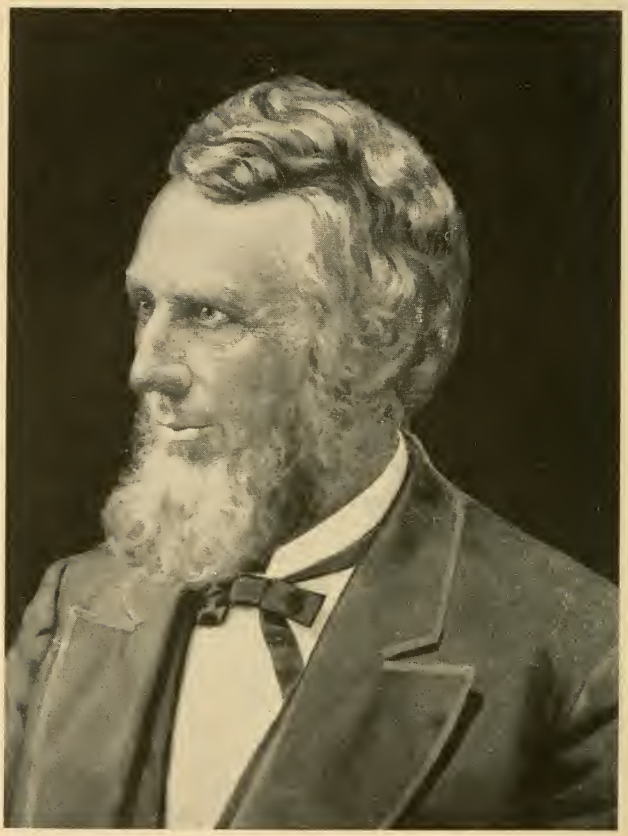
OHIO AGRICULTURE



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HISTORY OF OHIO AGRICULTURE

A Treatise on the Development of the
Various Lines and Phases of
Farm Life in Ohio

BY

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ILLUSTRATED

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TO

Thomas Forsyth Hunt

Inspiring Teacher

and

Constant Friend

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PREFACE

In the preparation of the pages which follow, the writer has endeavored to trace the development of one side of the industrial life in Ohio. It is to the farmer, more than to any other, that this state owes her greatness.

In recognition of this fact, the writer has endeavored to present a readable account of the progress and evolution of the agriculture in its various phases in the state. A chapter has been devoted to canals and railroads, because with the advent of the former the real agriculture began. It is to bring together some of the historic agricultural facts now scattered through a thousand places that this little book appears.

C. W. B.

INTRODUCTION

In 1650 Ohio was an unbroken forest. Its waters on the north and south had occasionally been furrowed by the adventurous craft of civilized men; but its borders possessed neither a hamlet nor a house. Only its interior showed signs of life of man, and that in the savage state. Tradition only tells us of the beauty of the wild scenery. That must have been a pleasant view to the Jesuit missionary Jean de Brefeuf, in 1640, as he coasted along Lake Erie's bank in the waters calm and sublime, typical of the solemn hum that marks the Atlantic roll. Or as La Salle, in 1660, moved slowly down the stream on the south, majestically along, noiseless as the foot of time, and as resistless. No wonder he used haste to take possession, after beholding the tall trees, covered with vines of the grape and of wild roses, from near the ground to topmost branches. He saw, too, the beautiful shrubbery and wild flowers, tall grasses, and the great profusion of flowering plants in full bloom, of every shade of color. We do not wonder as thus he floated down the stream he saw that truly the country and the silvery river was fair and beautiful; with this thought in mind, he exclaimed: "La belle

rivere!" The Indians, too, felt the same pleasure in the beauty of the scene, and long before the Wyandots had named the river by the expression, O, he, zuh; which meaning applied by the French, means great, grand, and fair to look at, hence the name of Ohio for the river and the state.

The history of the agriculture of Ohio is free from the startling sensations which arise from a Perry on Lake Erie, or the policies of a Vallandigham, or the tragedies and comedies of social life. Ohio's agriculture is deep and calm; its history quiet, but marked with the ever-increasing steps of progress.

As the sailor takes his bearings to keep his course, and from every view he sees nothing but water, so it is with the agriculture of Ohio,—a broad ocean of uncollected facts, one bearing here, another there, often uncertain and unreliable, extending through a period of a century in length. But we see a few landmarks here and there that are valuable aids in directing our course.

Ohio agriculture may be divided into the following periods:

Prehistoric or Indian agriculture, from prehistoric times to 1788.

Early agriculture, 1788–1832.

Modern agriculture, 1832–present.

Our present period is experimental; can we not within another half century give place to a fourth period, and term it scientific agriculture, with date from about 1890? *Introduction*

In this treatise we need not go into the history of the boundary of Ohio. It is true that a few straggling settlers lived in Ohio, but her industrial history begins properly with the Marietta settlement. Those settlers did not live by manufacturing, nor by mining, nor by hunting and fishing; but the growing of crops and the tilling of the soil at once took a prominent place in the work. Trees were soon cut and raised into houses. Protection started, the area thus cleared gave place for sowing, and cultivation and harvesting at once followed. Little is known of the agriculture of this period. In fact, there was little history, and nothing of importance in any way occurred to those first settlers prior to 1800. There was no means of transportation. Shipbuilding began about this time, and an outlet for the crop surplus was now slightly possible. But the agriculture of Ohio cannot be said to have commenced as an industry at a period before 1832. The Ohio canal was at this time completed; the facility for transportation by that means was the commencement of the era of improvement in this state. The accessibility to market induced

every landowner to pay greater attention to the cultivation of the soil.

Up to this time there had been no reason nor demand for improvement. Now an occupation for thousands had been made possible. The necessity gave rise to invention and improvement, and henceforth there was to begin a development and improvement in live stock and implements that was to make Ohio one of the foremost agricultural states of America. From that time forward prosperity followed, and the entire state rapidly grew in population and wealth. Log cabins disappeared, and commodious frame dwellings took their place. Towns sprang into existence, with shops, schools, and churches. Farm products found a ready cash sale, and at remunerative prices. Thus agriculture proper had its beginning. The opportunity was now afforded for the virgin earth to have developed its riches and beauty.

CHAPTER I

SOIL AND CLIMATE

On the surface, within the limits of Ohio, is almost everywhere a rich vegetable mould, made by the decay and putrefaction of vegetable substances. Along the Ohio river and all its larger tributaries in this state are wide intervals of rich alluvial soils, on which originally a thick growth of gigantic forest trees flourished. In the hilly regions there are two kinds of soil—the silicious and the argilaceous. The former is made by the disintegration of the sandstone, near the surface; the latter by the clay slate which exists there. And where it is quite hilly these two kinds often become blended together. Nature has provided us the clay for bricks and the sand in which to mould them.

The interior of the state and the country bordering on Lake Erie are generally level, and in some places marshy. From one quarter to one third of the state, comprehending the eastern and southeastern part, bordering on the Ohio river, is gen-

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erally hilly and broken. The lands on the Ohio, and several of its tributaries, have great fertility. On both sides of the Scioto and the two Miamis are the most extensive bodies of rich and level land in the state. On the headwaters of the Muskingum and the Scioto, and between the Scioto and the two Miamis, are extensive prairies, some of them at one time low and marshy, producing a great quantity of farm products of all kinds. Prior to its present claimation to agriculture, this area produced a great quantity of coarse grass, from two to five feet high; other parts of the prairie are elevated and dry, with a very fertile soil, though they have sometimes been called barrens. The height of the land which divides the waters which fall into the Ohio from those which fall into Lake Erie was the most marshy originally of any of the state; while the land on the margins of the rivers is generally dry.[1]

The southeastern section, over one third of the state, is dependent upon its original rocks for its soil fertility. These being mostly of sandstone origin, afford little

[1] Sherman & Smith's Gazetteer of the United States.

fertility either to the hills themselves or to the valleys over which the wash is carried. They are the only native soils we have, coming either directly from the rocks that underlie them or that rise above them in the boundaries of the valleys and uplands. The rocks thus being disintegrated vary in composition, and consequently the soils are "characterized by considerable inequality and by abrupt changes." All have a fair degree of fertility, and those derived from the underbed of limestone are not surpassed by any in the state. Of this driftless soil region there is another class less productive. Forests and fruit production have flourished to a considerable degree in this region. The chestnut and the chestnut oak are partial to this class of soils, and vineyards and orchards have done remarkably well upon them. This class of soils are derived from Devonian shales. Another class of native soils are what are known as the Waverly group and lower coal measures. They are popularly known as the cheap land belt. Forests do well upon this area also. Some of our highest quality of timber has been pro-

duced from this type. Dr. Orton says that these soils if farmed in an exhaustive manner will not last long, but if cattle and sheep are raised, a system of grass and grain rotation followed and the addition of a ton or two of artificial fertilizer made, a farmer can do well upon them.[1]

Writing of our drift soils, Dr. Orton says, "The drift soils are by far the most important, alike from their greater area, and their intrinsic excellence. Formed by the commingling of the glacial waste of all the formations to the north of them, over which the ice has passed, they always possess considerable variety of composition, but still in many cases they are strongly colored by the formation underneath them. Whenever a structure of uniform composition has a broad outcrop across the line of glacial advance, the drift beds that cover its southern portions will be found to have been derived in large part from the formation itself, and will thus resemble native or sedentary soils. Western Ohio is underlaid with silurian limestones, and the drift is consequently limestone drift.

[1] Howe's History of Ohio, Vol. I, page 87.

The soil over much more than one half of the state is of foreign origin,[1] that is, has not been derived from the decomposition of the underlying rocks, but has been transported, by drift agencies, frequently from a great distance. Over the northern part of the state the most conspicuous element in the drift deposit is clay. We have in that section the tenacious clayey soil which has given character to the original forest and to the system of agriculture which we have to-day; the cultivation of grasses, the raising of stock, wheat, and the manufacture of butter and cheese being the most successful. On the Western Reserve, Newberry says, "The underlying rocks are frequently highly arenaceous, — conglomerate and sandstone,—yet this is the dairy of the West, for over nearly all parts of the surface a sheet of drift clay has been spread, of such continuity and thickness as completely to modify the character both of vegetation and agriculture. Along the southern range the drift deposits are more or less composed of gravel and sand."[2]

[1] Howe's History of Ohio, Vol. I, page 87. Geology of Ohio, Vol. I, page 23.

[2] Geology of Ohio, Vol. I.

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Some considerable part of the state is embedded with coal. Here the soil is affected by the underground bed. The rocks are sandstone shales, fire clays, and coal and limestones, which give local diversity to the soil. Where the ridges are covered with sandstone, the soils are light and porous and have little agricultural value. The chestnut and the wild grape grow abundantly on this class. Frequently, however, the ridges are sheeted with limestone, as in some sections fine crops of corn and wheat are produced on the summits of the hills.

In the valleys of the Muskingum, Scioto, and the Miami the soil is deep black alluvial,which yields, year after year, abundant harvests of our most important agricultural crops. In the Miami valley we have our highest type of fertile lands, occasioned by the drift of limestones and the underlying calcareous gravels.

In the western and northwestern parts of the state there is a type of prairie land, covering a considerable extent of territory, originally marshy, but of recent years ditches and tiles have converted this waste land into productive farms.

Climate.

Ohio has a variable climate. From its geographical situation it is necessarily one of moderate extremes. The state is swept over by the southwest trades and the northwest polar winds in their alternatives. The southwest winds bring in the rains, and during the summer months often of a strongly cyclonic character. The summers of southern Ohio and the winters of the northern part are often intemperate, but the spring and autumn, in both cases, compensate for the excess. The equable temperature which Lake Erie diffuses upon the adjoining country has been valuable in an immense degree to the various agricultural and horticultural industries; orchards and vineyards thrive especially well in that locality.

Ohio lies in the region where the best conditions of climate exist for the adaptation of vegetable and animal life. Situated in the temperate zone, the state falls entirely under the influence of a variable climate. And those variations of heat and cold, of moisture and dryness, within extremes not too great, have been important factors in

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the development of vegetable and animal life. There is an inspiration in changing seasons, the lovely springtime, with the summer that follows, bringing the warmth and moisture and sunshine which make the fruits of the soil abundant in this land, fitting rewards for our labor; and winter with its cold, exhilarating influence, with its period of rest and renewal of vigor. In this respect, then, Ohio has a climate unsurpassed, with winters that are not severe, and summers that are not depressingly hot. The climatic conditions are favorable for the production of a wide range of vegetation. Cereals of practically every nature, fruits of all descriptions, vegetables of nearly every variety, find cultivation on Ohio farms and gardens. There are many picturesque and charming hills that are noted for their fruit; the mild and equable temperature of Lake Erie's region is unsurpassed for its vineyards, while the hundred valleys, level and fertile, not only furnish the produce for Ohio's people, but have to spare to feed the hungry mouths of other climes. Climatic conditions, with the fertile soil, were what caused the extraordi-

nary development of animal and vegetable forms during the time of Indian ownership.

TEMPERATURE.

From the observations of the state weather bureau we have exact data for the last fifteen years on the weather conditions of the state. We also have records extending over a period of forty years that give a close idea of the normal conditions. The observations of G. A. Hyde[1] of Cleveland are especially interesting. Since 1855 he has kept careful records of the temperature, rainfall and snowfall, the winds and sky. From his observations we find that during the period there is no uniform deviation from the normal, and no gradual change of seasons as so many people are inclined to think. The average temperature for the forty years is 49.3°; the highest temperature observed in the vicinity of Cleveland was 99° on August 12, 1881, while the lowest temperature was 20° below zero, January 29, 1873. We find by dividing this period of forty years into decades, that the average temperature of

[1] Forty Years' Record of the Weather, by G. A. Hyde.

the first was 49.58°; the second, 48.32°; the third, 49.46°; and the fourth, 49.34°. From the State Weather Bureau, we find during a period of fifteen years the mean temperature is 50.5°; the highest, 108°, July 18, 1887, at Pomeroy; the lowest, 34° below zero January 25, 1884, at Sidney. Range of temperature 142°; mean daily range, 21.3°; greatest daily range, 60° on October 19, 1894, New Waterford; lowest range, 0° January 13, 1892, New Holland; and February 7, 1895, at Kilbourne.

The warmest month is July and the coldest January.

Precipitation.

From the observations of Mr. Hyde on the amount of rainfall, melted snow included, during the forty years of his observations, we get the following interesting facts: The greatest fall in one day or twenty-four hours was 4.67 inches, September 12 and 13, 1878. The greatest fall in one month was 10.33 inches in June, 1855. The least fall in one month was 0.25 inches in February, 1877. The

greatest fall in one year was 49.66 inches in 1878. The least fall in one year was 25.28 inches in 1856. The average rainfall and melted snow for forty years is 38.08 inches.

From the State Weather Bureau we get the following averages for the state: The number of days that rain fell during the last fifteen years was 125; mean yearly rainfall, 37.87; mean daily rainfall, 0.10; greatest rainfall at Demos in 1890, 65.39 inches; least rainfall, 20.38 inches, Pomeroy, 1894; with a mean monthly rainfall of 3.14 inches. The rainfall for the growing seasons is not always sufficient to furnish water enough for the maturity of the crop, which makes it essential to conserve the moisture that is taken in the soil during the other months.

Snowfall.

Mr. Hyde notes the most remarkable snow-storm, in his record of forty years, to have occurred January 31, 1878, between the hours of 4 A. M. and 9 P. M., in which time there fell twenty-two inches of snow. During the time of the observation the first

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snow fell September 30, 1888, and the latest November 29, 1865. Of the last snowfall of the season, the latest occurred May 9, 1885, and the earliest March 24, 1878. The greatest snowfall for any season occurred during the winter of 1880-'81 when 101.8 inches fell. The least snowfall of any season occurred during the winter of 1865-'66, when but 22.6 inches fell. The average snowfall during the forty years was 54.4 inches. For the average condition of the weather proper of the state during the past fifteen years, we find that the number of clear days, fair days, cloudy days, and rainy days, per month, was ten each. During the forty years' period the prevailing direction of the wind was from the southwest. As to the state of the general climatic conditions, little needs to be said. There seems to be no change in temperature, amount of snow, and change of seasons. The destruction of forests, however, has had some effect on the prevalence of floods and their distribution.

Ice, Frost, and Storms.

The formation of ice from three to six inches occurs in all sections every year, and sleighing and skating are possible in nearly every section of the state. The northern part of the state never fails in its ice crop.

Frosts are usual, especially in the section south of the lake to the line where the climate is affected in a favorable way. Hundreds of acres of fruit trees and often the cereals are entirely destroyed by frosts.

Summer storms, too, are frequent, and the occasional winter storm is not uncommon. Periods of excessive rainfall are not unknown, when great floods have inflicted great losses on both farms and prosperous towns.

CHAPTER II

INDIAN AGRICULTURE

The Ohio Indian was not an agriculturist; he regarded the cultivation of the soil as degrading. Yet he found it necessary to cultivate the soil to obtain a living, and he put the task upon the old women and the children. It is customary to speak of the Indian as subsisting by the chase, but this is true only to a limited extent. More than half of them cultivated the soil, and in the Ohio and Mississippi valleys quite well and extensively. Up to 1776 the entire land of Ohio was in possession of the Indian tribes. No white men were permanently within this Indian land, and those who were roaming about within the borders were known only as enemies, and their presence meant war. The most powerful tribe and honest were the Wyandots, who occupied the fertile and level region of the Sandusky river, where they held the undisputed right to the northern part of the state. In the rich valleys of the Tuscarawas and Muskingum were the camping grounds of

the Delawares, whose power gave them possession of nearly half of the state. The Scioto and Miami country furnished the beautiful valley homes of the Shawnees; the fame and power of whose brave warriors were extended even to the civilized courts, so that the French found efficient allies during the Seven Years' War. Piqua and Chillicothe are named from two of the four sub-divisions of this powerful tribe. The Chippewas and the Ottawas occupied portions in the northern part of the state.

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These tribes were the occupants of Ohio while the white men were building up a civil society in the East, and the former had little disturbance from the latter. Here they roamed and hunted, and tilled their little fields and made love and war at pleasure, little conscious of the approaching troubles and doom! Though the Indian was lazy and careless he exercised more forethought about his corn crop than anything else. In some parts of the state along the river banks and valleys where trees were not abundant, were found the cornfields of the Indians; back in the hills and forest areas the Indian found it necessary

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to clear out a part of the trees for his fields. This was done by belting the trees near the roots, through the sap wood. This would soon destroy the trees so that enough sunlight would enter to produce the corn crop. During winter the branches would drop to the ground, and in the springtime the women and children would gather them together and burn them as the first preparation for the crop. Thus rid of its rubbish, the ground was then gone over with rude hoes made of stone, or a crooked stick, or even the bone of an animal, and put in condition for planting. We find reference in Colonel Smith's diary that on planting, a crab or fish from the stream was caught and put in the hill over which was placed the kernels of corn. In many places the doing or not doing of this meant a yield or failure of the crop. It was necessary then for the embryonic farmers to keep watch of their crops throughout the entire growing season. Birds were legion then, and without careful and continued vigilance on the part of the faithful and persistent squaws, total destruction from their ravages would no doubt have resulted.

The Indian practised deep cultivation. The idea of shallow and level cultivation was as foreign to him as to thousands of the farmers of Ohio to-day. *Indian Agriculture*

He carried the matter a little further, however, hilling the corn as high as two feet[1]. The corn was plucked before fully ripe and a careful selection of the seed corn was made from the stalks that contained the largest and most perfect ears. How fortunately and yet unconsciously they were following out the idea of selection! After the corn was husked it was packed in birchbark boxes and buried in holes in the earth for future use. Many writers have told us that these underground barns were carefully concealed by the women, lest the lazy and thoughtless husbands and sons should discover and eat up the contents. These dirty, lazy, contemptible husbands and sons were the only hogs the Indians had, history tells us, and they would often root open the doors and in their gluttony eat the whole of the hard-earned larder in a day.

Indian corn was the chief product raised by the Indian, and many references are

[1] Taylor's History of Ohio, page 99.

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made by the early travelers and of the war parties through Ohio to the fields of corn. Along the banks of the Ohio and in the valleys of the Scioto, the Sandusky and Maumee rivers, the Muskingum and Miamis were many acres of this product raised. The usual method of preparation was to pound the corn into coarse meal or swell hominy and then boil in water, making a thickened soup, without salt or anything else[1].

Another method was to mix with the hominy, peas, beans, and fish and flesh of all sorts, either newly taken or dried, venison, bear's flesh, moose, otter, or raccoon, cut into small pieces, with nuts, acorns, pumpkins, and squashes[2].

During the roasting-ear season the hunters became exceedingly lazy, and spent their whole time in singing and dancing. They were unconsciously fulfilling the Scripture, beyond those who profess to believe them, in taking no thought of the morrow. Colonel Smith, in the account of his captivity, says that roasting ears

[1] Taylor's History of Ohio, page 99.

[2] Bolles's Industrial History of the U. S. page 3.

and the food they got from the Indian corn lasted them until October in this state; after that time they turned to fowling. Geese, ducks, sevans, and cranes came from the north and alighted on the inland bodies of water, without number and innumerable, and the streams furnished abundant fish and fowl, both in spring and fall. *Indian Agriculture*

But while corn was the chief product raised by the Indians, it was not the only one by any means. They cultivated and collected several fruits and vegetables. Among their corn were planted peas and beans, the corn stalks answering the purpose of brush to support the vines. Pumpkins and squashes were also grown, and reached a fair degree of development on Ohio soil. Both of these were planted in the corn, as is the practice of many farmers of to-day. Bolles makes mention of a kind of muskmelon, though very inferior in quality. Though wild grapes, wild cherries, and plums grew almost in abundance, in the wild state, where the Indian towns were permanent, trees and vines were set apart and the fruit often dried

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for winter use. Other wild fruits flourished here, and were great sources of food.

In Smith's account of his captivity with the Ohio Indians in 1755–'59, he makes mention of some observations of their agricultural life. While not at all agricultural, they made use of all edible foods they could find. The potato was largely cultivated by the Indians in this state.[1] It, with Indian corn, was easily cultivated, and furnished a comparatively large amount of food. Colonel Smith, in 1755, speaks of potatoes growing spontaneously, and describes them as a kind of rough brown potato, very palatable and nourishing. This was probably the Jerusalem artichoke, which answers Colonel Smith's description, for it is improbable that either Irish or sweet potatoes were ever cultivated by the Indians in this state. The Indians would peel the so-called potatoes, and dip them in raccoon's fat before eating. They would have a taste, when prepared this way, really like our own sweet potatoes. The dried green corn mixed with beans was used by almost every tribe in the state.

1 Shaler's The U. S. of America, page 245.

During the captivity of Colonel Smith he was nearly all the time in southern Ohio. Speaking of the soil in that section, he says:[1] "The land is generally good; chiefly first or second rate, and comparatively little or no third rate. The only refuse is some swamps, that appear to be too wet for use, yet I apprehend that a number of them if drained would make excellent meadows. The timber is black oak, walnut, hickory, cherry, black ash, white ash, water ash, buckeye, black and honey locust, sugar tree, and elm; there is also some land where the timber is chiefly white oak or beech—this may be called third rate. In the bottoms, and also many places in the upland, there is a large quantity of wild apple, plum, and red and black haw trees. It appeared to be well watered and plenty of meadow ground, intermixed with upland, but no large prairies or glades, that I saw or heard of. In this route, deer, bear, turkeys, raccoon appeared in plenty, but no buffalo, and very little sign of elks."

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We see by Smith's observations that

[1] Colonel Smith's Captivity, page 26-28.

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cherry, crab apple, and plums were possible foods for the Indians.

Although the Indian was unacquainted with the sugar cane, he did not lack sugar, and often had it in large quantities. Quoting again from Colonel Smith, he says:[1] "In the month of February the Indians begin to make sugar. As some of the elm bark will strip at this season, the squaws often finding a tree that will do, cut it down, and with a crooked stick, broad and sharp at the end, take the bark off the tree, and of this bark make vessels in a curious manner that hold about two gallons each; they make about one hundred of this kind of vessels. In the sugar tree they cut a notch sloping down, and at the end of the notch strike in a tomahawk; in the place where they struck the tomahawk they drive in a long chip, in order to carry the water out from the tree, and under this they set the vessel to receive it. As sugar trees were large and plenty here, they seldom or never notched a tree that was not two or three feet over. They also made bark vessels for carrying the water

[1] Colonel Smith's Captivity, page 37.

that would hold about four gallons each. They had brass kettles that held about fifteen gallons each and other smaller kettles in which they boiled the water. But as they could not at all times boil away the water as fast as it was collected, they made vessels of bark, that would hold about one hundred gallons each, for retaining the water; and though the sugar trees did not run every day, they had always a sufficient quantity of water to keep them boiling during the whole sugar season. The way that we commonly used our sugar while encamped was by putting it in bear's fat until the fat was almost as sweet as the sugar itself, and in this we dipped our roasted venison."

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The above gives a good idea of the way in which the Ohio Indian obtained his sugar. This same process was afterward learned from the natives by the whites and resorted to by them. This method of obtaining sugar was practised by the majority of the Ohio tribes as well as throughout the whole region of the Great Lakes and the St. Lawrence.

Tobacco was everywhere grown through-

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out the state and was as necessary to the Indian life as paint and the tomahawk. The Indian possessed no domestic animals except the dog, nor poultry of any kind. And he did not need the latter. The trees and groves were better for the culture of fowls than were the rude wigwams for shelter and protection. It is true that some tribes were in the habit of capturing various species of birds and animals and of taming them as pets, but as a rule not for economic purposes.

Thus the Indian lived on Ohio soil. He has left a record that cannot be forgotten. A creature of circumstance he has done the best he could. Though his agriculture was crude and undeveloped in form, yet it points that his civilization was not as low in the scale as many would have it. Shaler[1, 2] advances the reason of slow development of Indian civilization to be due to the fact that the Indian had no domesticated animals as beasts of burden. It is true he had the dog, which was common to all the Indian tribes throughout America.

[1] Shaler's United States of America. Page 249.
[2] Shaler. Domesticated Animals. Page 218.

Its use was for the watch or an ally in hunting. It was a failure as a beast of burden to the red men. Domestication of animals in the thought of Shaler is the last stepping stone to perpetuity. The American Indian never reached it. Ready to place the foot on its solid surface the white man came and the lone Indian had to grasp his weapons of defense, face about and prepare for the foe. "How thoroughly prepared," says the same author, "the Indians were for this step is evidenced by the alacrity with which they welcomed the introduction of the horse, pig, sheep, and domestic fowls. That unaided they would ultimately have domesticated the American bison, cannot be doubted; for the bison though wild and intractable could with proper care and breeding in a comparatively short time be made serviceable as a draft animal and also for its milk. It was of immense importance to the Indian in its wild state, but under domestication it would have proved a powerful factor toward civilization."

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Ohio was an especially favorite land for the Indian. Fertile soil for the corn plant

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and abundant game on inland lake and river, a land coveted and admired by red men and white men as a garden of second creation. No wonder the white man struggled for it, and the Indian died rather than yield!

CHAPTER III

PEOPLE OF OHIO

The first permanent settlement within the present limits of the state of Ohio was made in 1788. Many years prior to this attempts had been made to get people to emigrate into the valley of the Ohio. But Indian conflicts were many and frightful. The first mention we have of an attempt by white men in the way of exploration was that of Christopher Gist who in 1751 came over the mountains from the East, and crossed the Ohio river at about Pittsburg; striking for the interior of Ohio and following a trail he passed the Muskingum river at Dresden where an Indian town was then located; crossing the Licking and Hocking rivers he traveled down the Scioto to the Ohio and from there down to North Carolina. The Indians received him peacefully and his acts caused the Indians to feel a kind and friendly disposition toward the white man. No settlement followed, however, as permanent till 1788, when the Ohio company made its purchase

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at Marietta. The years of hostilities had passed and emigration to the new country began. The active spirit of the new movement was free to the impetus and the living column steadily took its Western course, till the vast region should be possessed and populated. After the beginning was made the inflowing tide of newcomers was rapid. Every part of New England furnished its quota, and New York, Pennsylvania, and Virginia contributed to swell the tide of emigration as it rolled across the borders to the promised land of the West. "Never," says an early writer, "since the golden age of poets did the siren song of peace and of farming reach so many ears and gladden so many hearts as when the hostilities in the Ohio land had ceased, and the prospect of taking up homes there was possible." The Ohio, as it is called, seemed to be literally a land flowing with milk and honey. The farmer wrote home of a soil richer to appearance than can possibly be made by art; of plains and meadows without the labor of hands, sufficient to support millions of cattle summer and winter; of wheat lands that would vie with the island

of Sicily; and of bogs from which might be gathered cranberries enough to make tarts for all New England; while the lawyer said that while on his circuit his horse's legs were dyed to the knees with the juice of the wild strawberry. Such was the report of the fertile lands and pleasant climate of the Ohio land. Emigrants fast came in. South, East, North, and West received their share. The country whereever they went to plant their homes was covered with dense forests, and the echo of the axes was the first sound of civilized industry in all the regions. The bluffs and bottoms and hills were covered with hickory, walnut, ash, poplar, and other trees indicative of good soil. And as the valley stretched out from creek to river the gigantic sycamore loomed up in view, thick set, and lofty from lake to river boundary. Pioneer life is prominent in the history of every state and country, and the mission of the pioneer is great and noble. If for one reason Ohio is a great state, it is because of the greatness of her early people. Their monument is the state itself, glowing and peering in all its sublimity,

glorious because of the unselfish lives of the heroes of early Ohio life. We quote[1] the following as typical of the Ohio pioneer's home:

"The first business of each settler was to make a little clearing and erect a log cabin, which was built of unhewed logs, poles, and clapboards, puncheons, and in those days wooden pins instead of nails. In its erection, no tools were necessary except an axe, an auger, and perhaps a cross-cut. Straight trees of the proper size were cut down and either drawn by a team or carried with the assistance of neighbors, to the building spot. The logs, being cuts of proper lengths, were notched and laid up somewhat as children build cob-houses. If a large or double cabin was desired the logs were laid up to form two square pens, with an open space between connected by a roof above and a floor below, so as to form a parallelogram nearly three times as long as wide. In the open space the family sometimes took their meals in pleasant weather, and it served the triple purpose of kitchen, lumber room,

[1] History of Athens County by Walker, pages 114-116.

and dining-room. The roof was covered with thin splits of oak, something like staves, about four feet long, from four to six inches wide, and about one third of an inch thick. Instead of being nailed, these staves or clapboards were generally confined in their places by heavy timbers, laid at right angles across them, giving the roof a unique and rough appearance. A doorway and windows were made by chopping out the logs of proper length and height before laying them up, so as to make suitable apertures. The doors were made of thin clapboards, split, like the roofing, from fresh cut timber, and were generally hung in the ingenious fashion on large wooden hinges, and fastened with a substantial wooden latch. Frequently the latch was raised from the outside by a small leather string attached to it, and passing through a hole from within. When the string was drawn in the latch could not be raised from the outside nor the door opened; hence the western expression to signify hospitality, that 'the latch string is always out.' Into the window apertures, small pieces of wood were fitted for sash

and upon them paper was pasted and rendered translucent by oiling. Wooden shutters made of staves, like the doors, were attached to the windows and closed at night. The floors, when any were used, were made of short, thick plank, split from poplar, walnut, or oak. In some cases the more wealthy settlers had logs hewed on the inside and the puncheon floor hewed and planed. For a fireplace and chimney a space about six feet was cut out of the end of the cabin, the lower part of the chimney built of rough stones, and the rest laid up with small logs and flat pieces like laths, cemented with clay mortar, well intermixed with short cut straw or hay. The chimney had a huge aperture, and tapered up like a pyramid. The hearth was made of clay mortar or sometimes a large slab of sandstone. Finally the spaces between the logs were filled with timber, split like firewood, from some soft tree, and made impervious to wind and rain by daubing the cracks with mud. A few chairs and stools, and a bedstead of poles, interlaced with bark, and furnished with plenty of bear skins, a table split from

a large log, and some cooking and eating utensils, constituted, perhaps, the bulk of the furniture within. Though rude in structure and limited in accommodations, they answered the charming places of home."

Not only have their walls sheltered rural plenty, manly independence, guileless honesty, contentment, and happiness, but they have been the birthplace of men and women who have left their impress on the age in which they lived. No more charming picture of honest industry and unalloyed happiness can be imagined than was afforded by the interior of these rude cabins. When the winter wind blew, and the shutters were barred, and the walls of hewed logs showed the white lines of plaster which marked the interstices; when the fire blazed high from the wide, open chimney, illuminating the stores of dried meats or vegetables which hang from the rafters, and the rustic table, around which are gathered the happy and healthy family, smokes with woodland plenty—at such a time no one could doubt that even these primitive log cabins were compatible with real and profound enjoyment.

People of Ohio

When the state was settled such glowing accounts of its soil and climate and possibilities were scattered about, that people flocked to her borders, and the territory of Ohio became in a short time one of the most populous, wealthiest, and most respected of America's territories. Her prosperity and wealth is due in a degree to the advantages given in rich profusion by nature; but a great part is due to the character of the first settlers; the right impulse which they gave the institutions of the commonwealth, the well directed energy with which that impulse was followed by their successors, and to the hardy and industrious character of the population that streamed in from the other states. Surely the people of Ohio had forefathers worthy to be founders of this new empire. The pioneers who first penetrated and opened up the wilderness within the limits of this state were a hardy, adventurous race of men and women, inured to toil, possessed of courage, steady energy, and strong practical common sense.

The suffering of pioneer life and human

foe, the privations and the hazardous dangers could not have been endured by any other class. Their declaration in the bill of rights that "neither slavery nor involuntary servitude" should exist upon the soil of Ohio had much to do in making the millions of free, industrious, intelligent citizens of their well directed and constant labor to add to the wealth of the state and the prosperity and happiness of the people. This freedom of every creature had much to do with strengthening the bold, free thought and action of the people.

People of Ohio

The early pioneers were not favorable to the formation of large settlements. These would be hurtful to the success of their favorite pursuit. The backwoodsman, as a rule, had improvements confined in extent to a rude log cabin; a small piece of ground cleared and fenced for raising Indian corn; a horse, a cow, a few hogs, and some poultry comprised the live stock. The further operations were performed with the rifle. If the number of settlers increased these backwoodsmen moved further into the interior until about 1820, when the state became fairly occupied, the continued

change of homes was abandoned, and a higher state of agriculture began. Now an orchard was planted, and livestock became more numerous than that of the backwoods predecessor, but the great trouble was the inferior quality of all the livestock, until the infusion of new and pure blood by the importation of later years. The agriculture of this time was crude and undeveloped, and the Ohio occupant was just preparing the conditions for the larger scale of work when the era was to begin. From 1810 to 1820 few new developments were made and data of the agricultural condition rare and unsatisfactory. At this time deer, bears, wild turkeys, and in a word, almost every variety of game was abundant, and the farmer's family enjoyed game in its season to a greater extent than they do at present the flesh of domestic animals. For with the rifle's aid the tillage, care, and curing of many an acre of corn and grass was saved. The rifle was the most indispensable necessity about the house, not so much as protection from the Indians, but as a means of furnishing food, and the gunsmith was

more important than the blacksmith. In many localities the female portion of the farmer's family was as good a shot as the males.[1] From 1810 to 1820 farming consisted in clearing the land, sowing a few acres of wheat, a few of corn, buckwheat, flax, oats, and potatoes. During[2] this period wheat declined to the minimum price of 25 cents per bushel; corn, 12 to 15 cents; oats, 10 cents; potatoes, 10 to 12 cents per bushel; the price of a cow was six to eight dollars; of a horse, twenty-four to forty; and other products in like ratio.

Speaking of the work done, Flint says,[3] "Farming establishments in Ohio are small. Most cultivators do everything by themselves, even to the fabrication of their agricultural implements. Few hire others permanently, it being difficult and expensive to keep laborers for any great length of time. They are not servants, all are hired hands. The utensils used in agriculture are not numerous. The plow is short, clumsy, and not calculated to make either deep or neat furrows. The harrow is triangular and

[1] Ohio Agricultural Report, 1859, page 475.
[2] Ohio Agricultural Report, page 468.
[3] Flint's Letters from America. 1818.

is light. Articles are carried on horseback; heavy ones by a coarse sledge, a cart, or wagon. The smaller implements are the axe, the pickaxe, and the cradle, scythe—by far the most commendable backwoods apparatus."

The grain cradle is described at great length by this traveler, in that it is a valuable implement. In his travels through Pennsylvania he did not see it, and so was inclined to the opinion that it is an Ohio implement. In 1820 there were not half a dozen points in Ohio where wheat could be sold for cash; and corn and rye could not be sold as a commodity at all. So it was converted into whiskey, and during the period of 1820 to 1826 a large amount of corn and rye was made into this beverage. The trouble was, no outlet for the agricultural products. People knew they could dispose of the surplus if they had markets, and as the completion of the Erie canal approached, strangers having heard of the haven land here, poured into the state. Many coming from old states where agriculture had been better developed, brought with them experience and knowledge, in-

dustry, frugality, and perseverence. From 1826 to 1836 large numbers immigrated to this state. Almost every one purchased a farm, of from sixty to one hundred and sixty acres. In the hands of this later class of immigrants the resources of the state very rapidly developed. *People of Ohio*

From the very first opening of the state to settlers there was continual inflowing of immigrants. Josiah Espy[1] in his observations through the state in 1805, says, "The people of Ohio have come from nearly every state in the union, but chiefly from Pennsylvania, Virginia, New Jersey, Maryland, Kentucky, and Tennessee, and during the present year I have good reason to conclude that from twenty to thirty thousand souls have entered the state for the purpose of making it their future residence. At the present time the inhabitants of the state of Ohio, being so lately collected from all states, have as yet, obtained no national character.

"In traveling through this immense and beautiful country, one idea, mingled with melancholy emotions, almost continually

[1] Ohio Valley Historical Collection, page 23.

People of Ohio

presented itself to my mind, which was this: [1]That for many years the people of that great tract of country would separate themselves from the Atlantic states and establish an independent empire. The peculiar situation of the country and the nature of the men will gradually lead to this crisis."

What a mistake the observer made. Along with the industry, knowledge, religion, which the early settlers brought with them was government and patriotism. Where have you found a more law-abiding people; what primitive citizenship, more conservative and conscientious; or a mission filled better than by the pioneer settler of Ohio. What state can show a record so clear, or a galaxy of names so lustrous in defense of that union which our observer had thought Ohio able to destroy.

The patriotism of her brave men, the loyalty of her women, worthy descendants of noble pioneers, is to-day proverbial.

1 Ryan—A History of Ohio, Ohio in War, page 162.

CHAPTER IV

CANALS, RAILROADS, AND TURNPIKES

Internal improvements did not begin in Ohio at a very early date. Before 1832 there was no means of transportation, excepting a national road and ships on the northern and southern borders, rafts on the rivers, and the rude ox- and horse-carts, over impassable, unmade roads. With this state of affairs it could not be expected there would be much or any advance in agriculture. Livestock could be driven to market though very unsatisfactorily; but wheat, corn, and other products could not receive any improvement and development when they could not be taken to market, no matter how much they were in demand there. With the opening of the Erie canal the first real and strong impulse was given to the agriculture of the state. Even before its completion the realization had come to all that progress was now certain. Ohio with her splendid climate and fertile soil could furnish abundance to the country if only

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means were provided for transporting it. That realization came in 1832, and then our agriculture proper began. The history of the transportation in the state is divided by the course of events into three periods. From the time of the first settlement until the completion of the Ohio canal in 1832, during which there were no artificial ways to facilitate the transportation of the farm products of the state, is the first.

The second period, from 1832 to 1852, was distinguished by the National road, extending from Cumberland city, Maryland, to Zanesville. The remarkable prosperity arising from the eight hundred miles of canals in the state, and ultimately the introduction of railroads and their ascendency as a means of transportation in 1852, when they had accomplished through lines from the leading cities of the state to the great commercial cities of the East.

From 1852 to the present time railroad transportation has been a large factor in the prosperity of Ohio, and may be properly considered the third period.

During the first period the principal means of communication between Ohio and

the Eastern states was by pack horses.[1] Roads were made and improved from year to year when Pennsylvania wagons drawn by from four to six horses were seen. The early common roads had been made where nature offered the least resistance. During the early days no attempts were made to improve them. Where they crossed streams of the smaller sizes, they were forded. Even as late as 1830 there were but few bridges over the larger streams of the state. These roads were moderately good during eight months of the year, but the winter season found them quite impassable.

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The turnpike road was the next step. The first one in this state extended from Warren, Trumball county, to Lake Erie. Another turnpike, one hundred and six miles in length, extended from Columbus to Sandusky city. One from Cincinnati to Zanesville through Chillicothe and Lancaster. Another from Perrysburg to Sandusky. An excellent turnpike road was made from Cincinnati to Springfield, through Lebanon, Waynesville, and Xenia. These and a few other minor ones made

[1] Howe's History of Ohio, Vol. I, page 106.

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up the turnpike roads of the state as late as 1840.

So difficult was travel in these days that our National government entered upon a scheme of national improvements. Of these the National road, or Cumberland road, was one. It commenced at Cumberland in Maryland, running thence westward to the Ohio river, through Pennsylvania, and thence through central Ohio. The first appropriation was in 1806, when Congress voted $30,000 to make a survey of route and report. It was subject to approval of the president. Having gained that, appropriations were made from time to time thereafter, until 1838, when a little over three millions of dollars had been expended in this work. About 1825 the people of eastern Ohio began the use of this great route, its first artificial means for the transportation of its commerce.

This great road opened the way through the mountain barriers of the Allegheny range, and made level a way for the commerce of the East, and for the pioneer and his family, who were seeking homes in the wilds of Ohio and the farther West. It was

the first great movement of the people in the direction of internal improvements. The progress in building the National road was slow. An appropriation was made March 2, 1825, for extending it westwardly from Zanesville. It had a great deal to do with the great prosperity of Ohio, and the opening of the new era in the history of the state by the marks distinctly made when canal construction was begun.

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The introduction of steamboats upon our rivers and lakes quickened the enterprise of the people, and various schemes for facilitating the transportation of freight were discussed everywhere throughout the state. The Muskingum was navigable[1] 150 miles and by a portage of five miles from a small lake at its head, a line of communication was formed into the Cuyahoga, thence into Lake Erie. The Hocking river was navigable for sixty miles, with the exception of a few falls and dams. The Scioto was navigable 150 miles with but a few obstructions, which were passable in high waters. The Great Miami was navigable for 125 miles, and a

[1] Ohio Railway Report, 1881, page 123.

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portage of five miles communicated with the Maumee and thence to the lake. With the lake on the north of the state, the river on the south, and these meagre tributaries, were formed the only ways of commerce enjoyed by the people of Ohio during the first period of transportation. At this time no artificial roads had been made; canals had not been thought of; the rivers, as above described, at the most were hazardous at all times, always tedious, and often impracticable. Nothing but necessity prompted the inhabitants to engage in commerce. The farmer had no motive to increase the products of his fields beyond the wants of his family. The "newcomers" or immigrants created the only demand which existed in the interior settlements for the surplus products of agriculture.[1] As early as 1815 public opinion was turned toward water courses for commerce. The want of a permanent navigable water communication between Lake Erie and the Ohio river had long been felt. Private individuals had endeavored to get a charter for the company to make

[1] Burnett, "Notes of the Northwest."

such a canal, but all had failed. The tide of public opinion began to move, however, in the direction favorable to public ownership of such a canal as early as 1820, and to Micajiel T. Williams[1] of Cincinnati, a member of the legislature, who was the soul of the movement, credit for the early commencement of the canal is due. A bill was introduced into the general assembly on the 6th day of December, 1821, and became a law the 31st of January thereafter. By the passage of the act, commissioners were appointed, whose duty it was to employ an engineer to examine the country and report on the practicability of making a canal from Lake Erie to the Ohio river. These commissioners employed Hon. James Geddes of Onondaga county, New York, as expert engineer, who arrived at Columbus in the month of June, 1822. These commissioners themselves assisted in the examination, and devoted nearly all their time to the service. It was finally decided early in 1825 to extend the route, commencing at Cleveland and ending at Portsmouth, on the Ohio river.

[1] Executive Documents. 1820-1825.

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They also determined on making a canal from Cincinnati to Dayton, on the Great Miami river. In the meantime a board of canal commissioners had been created by law, and a stock had been created, and these fund commissioners had borrowed money in Newport city sufficient to begin the excavation of the canals and carry on the work the first year. All this being done, David S. Bates as chief engineer and several assistants were appointed, and work on the Ohio canals was begun at once.

The total disbursements on canals[1] up to December 1, 1832, amounted to $5,163,025.24. The aggregate length of navigable canals constructed and owned by the state at that time, amounted to four hundred miles, comprising 184 lift locks, overcoming a total ascent and descent of 1,547 feet; nine guard locks; twenty-two aqueducts; 214 culverts, 182 of which were of stone masonry, sixty of wood; nine dams for crossing streams, and twelve feeder dams. The main trunks of the Ohio and Miami canals have each a minimum

[1] Reports of Canal Commissioners of Ohio.

breadth of forty feet at the water line, and twenty-six feet at the bottom, with four feet depth of water. A larger proportion of both, particularly the Ohio canal, is of much larger dimensions, having a breadth at water line varying from sixty to one hundred feet, and a depth of from five to twelve feet. In many places it even exceeds, for considerable distances, these dimensions in both depth and breadth. It was a standing rule in the construction of the canals, to increase their dimensions beyond the minimum, in all places where it could be done without materially enhancing the cost.

The walls of the locks are of solid stone masonry, resting on floors, composed of timbers laid crosswise of the pit, covered with planks three inches in thickness, both in chambers and under the walls, and between the walls with an additional floor of two-inch plank well joined and secured with spikes to the timbers on which they rest. The face of the walls are of cut stone, laid in regular range work, and in line mortar, the whole wall grouted with the same material. The breadth of the

locks is fifteen feet between the walls and the length of the chambers, being the face between the upper and lower gates, ninety feet, admitting boats seventy-eight feet in length, and fourteen feet ten inches in breadth, to pass freely through.

Aqueducts were constructed with wooden trunks supported by pins of stone masonry which in the Ohio canal is the same character as that used in the locks.

The Ohio and Erie canal, extending from the Ohio river at Portsmouth to Cleveland in Lake Erie, was finished in 1832. It is three hundred and nine miles long. This main canal has many other canals connected with it. The side cut leading from Lockbourne to Columbus is eleven miles long. Ascending the main canal at Carrollton, a side cut canal to Lancaster, the falls of Hocking and Altoona, is seventy-five miles long. In Licking county a canal is made from the Miami trunk to Granville. Still ascending to Dresden we find the main canal is connected with the Muskingum river by a dam and lock.

The next canal connecting to the main one is the Waldhoning canal at Roscoe.

Ascending to Bolivar in Tuscarawas county at the mouth of Sandy creek is a canal one hundred miles in length. This canal connects with the town of Beaver on the Ohio river, thirty miles below Pittsburg. Starting from near Beaver is another canal to intersect the main canal near Akron. The Miami and Erie system canal extends from Cincinnati to Toledo, passing Middletown, Dayton, Piqua, etc.

The following are the principal canals of the state, which were built at a cost including the different reservoirs as feeders, $15,967,650:

Ohio canal	334 miles.
The Miami and Erie system .	282 "
Hocking canal	56 "
Waldhoning canal . . .	25 "
Muskingum canal . . .	91 "

For twenty-five years these canals and waterways were the stimulating factors of our agriculture, commerce, and population. Farming communities increased and flourished where they had not before. The cereal crops increased in production and area many fold. Through their influence small farms developed into large, pro-

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gressive ones, towns were built and villages became cities, and agriculture and trade became profitable enterprises. The newly found markets for farm products added fifty and one hundred per centum to their prices, thus enlarging the field of agriculture and bringing wealth to the state by its extension. Farming now began as a productive commercial industry that was to be developed and make Ohio one of America's leading agricultural states.

The first railroad[1] made in this state, was finished in 1836 by the people of Toledo, a town some two years old then. The road extended westwardly into Michigan and was about thirty miles in length. A second railroad[2] extended from Cincinnati to Springfield. This road followed the Ohio river up the Little Miami river, and then turned northwardly up its valley to Xenia, and passing the Yellow Springs reaches Springfield. Its total length was about ninety miles. The state owned one half of this road, individuals and the city of Cincinnati the other half.

[1] Atwater's History of Ohio, page 279.
[2] Atwater's History of Ohio, page 279.

As soon as railroads were begun charters were given for numerous other railroads, but many of these were never made, because of the want of enterprise and public spirit.

From 1852 when there were 890 miles of railroad in operation, until 1869, when there were 3,324 miles, there was great activity in the building of railroads in Ohio. The increase of miles of railroad in the state is as follows:

1838	30	miles.
1853	1,385	"
1858	2,788	"
1880	5,654	"
1896	12,596	"

In 1869 an important change[1] was accomplished in railway management by the consolidation of railroads into through lines, connecting Chicago with the Atlantic cities. The act providing for consolidations was passed by the Ohio legislature in 1851 and was perhaps the earliest act of the kind in any of the states. Many minor consolidations of railroads took place prior to the

[1] Ohio Railroad Report, 1881, page 135.

formation of through lines. The first of the through lines was formed by the execution of a lease between the Pittsburg, Cincinnati & St. Louis Railway company and the Columbus, Chicago & Indiana Central Railway company, dated January 22, 1869, to take effect February 1, 1869. The Pennsylvania Railway company was the third party to the contract. This was the first line formed between Chicago and the sea-coast.[1] In December, 1869, the Pittsburg, Ft. Wayne & Chicago Railroad company was added to this; and the same year the Lake Shore & Michigan Southern was added, making the third through line. In 1874 the Baltimore & Ohio was added, forming the fourth through line.

"These long lines unbroken in their management are practically arrangements for the more economical, commodious, safe, and perfect operation of several lines of railroads." These lessened the cost of freight and had a material effect upon the agricultural commerce of the state. Dr. Townshend says, "The railroads appear to

[1] Ohio Railroad Report, 1881, page 135.

have doubled the price of flour, trebled the price of pork, and quadrupled the price of corn."

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A century has given us a wonderful development of transportation facilities. Ohio is no longer a state of isolated points. But her farms are connected to-day with fairly good roads and pikes, her towns and cities banded with the canal, railway, and electric road. Commerce is easy, cheap, and rapid. As long as there was no way to market the produce from the fertile farms, agriculture in the state was slow with no chance of development. But as soon as the touch of the canal and railway systems was made, the impulse acted like the magician's wand, converting in a moment the industries of Ohio, from their undeveloped, unimproved conditions, into a profusion of wealth, greatness, and prosperous success.

CHAPTER V

PRINCIPAL FARM CROPS

The history of farm crops in Ohio, like that of the livestock of the state, has been one of gradual development. While some are of general importance, others have a sectional history only.

The early settlers brought with them seeds of all kinds, for they intended to develop the agriculture of the state at once. With a soil of virgin fertility and a climate favorable in temperature and rainfall, do we wonder that in a half century Ohio rose to third in agricultural importance in the United States? The farmers of the state have directed their attention to the following principal crops: Wheat, corn, oats, barley, rye, tobacco, grasses, potatoes, flax, hemp, sorghum, and the sugar beet. Neither history nor tradition tells us who first introduced the various crops into the state. We do know, however, they were brought with the pioneers, not to be grown for commerce, but as means of subsistence. From a few acres at first they became

spread over vast areas, and instead of furnishing food alone for those who cultivated and grew them, they are now important factors in commerce and international in importance. *Principal Farm Crops*

From the first, though in but a small degree, mixed farming was practised. The farms were small and undeveloped. The scientific idea to the Ohio pioneers was a foreign matter. They found everything in Ohio, the representative state of the West, new; as much so, perhaps, as did the New England colonists. The uncertainties, too, were very great. Their crops and their flocks were subject to ravages by new enemies. Likewise were the crops liable to such mishaps, for each had its preference for weather; each had its own possibilities of danger, each its own enemies, and each its own diseases. Practically all the general farm crops found favorable climate and soil for their development in the state; yet each has experienced years of failure or years with bountiful harvests. The farmers of the state were energetic from the first to introduce improved varieties of all, and the history of farm

Principal Farm Crops

crops in Ohio has been one of continual development and care. If the soil of the state had received from the farmers of the state the same careful treatment and experiment as the different farm crops, the agriculture of the state would be quite different from what it is to-day. Crops of all kinds in the early history of the state could be produced with abundant yield at little effort. But that virgin fertility has been destroyed, and thousands of acres have become depleted, exhausted, and abused and to-day, as known by all, there are required all the knowledge of science, and the care and painstaking efforts of practice to produce even moderate results.

Wheat has always been extensively raised in this state, and as early as 1825 was the stable crop. One of the first[1] kinds of wheat cultivated in the state, and especially in central Ohio, was the Red Chaff Bearded, which was introduced by the early settlers. It grew with a "heavy crop of straw, short, plump berry, full bosom, full weight, and for a considerable time produced the most abundant crops."

[1] Ohio Agricultural Report, 1858, page 111.

Tradition says that it was not an uncommon thing for fifty bushels of this variety to be produced from one acre, on a small field. About 1838, being very susceptible to rust, it passed into disuse; so badly was it affected in its latter days, the last crops were often utterly worthless. *Principal Farm Crops*

A more hardy variety displaced it, known in these days as Velvet Chaff. This variety also grew a good straw, very long heads and a luxuriant beard, with a longer berry than the Red Chaff Bearded, and nearly as plump. It produced abundantly; often from seventy to eighty grains were taken from a single head. It made very white, nice flour. For a short time this variety was the standard one, and "wheat growers thought their fortunes made," but alas, the rust used up this variety also, it only producing two or three crops, after which there was so much effort made to produce it, and such utter failures that upon the whole its introduction was a serious loss. About the same time a White Flint wheat was introduced, which produced well for a crop or two, but was soon abandoned on account of rust.

Principal Farm Crops

A variety called the Michigan wheat was introduced on the failure of the old Red Chaff, which produced a few good crops before it was destroyed by the rust. A little later, about 1845 or 1846, the Mediterranean variety was obtained, which had a "good growth of rather weak straw, but generally a sure crop, seldom if ever injured by rust, when sown early on good land well prepared." For a long time this variety was sown, and has been worth millions of dollars to the farmers of Ohio. The next varieties introduced were the Genesee and Malta, both of which soon became badly affected with rust and passed out of use. Other varieties came in their turn, to succeed or fail, and to-day we have several scores of varieties of this cereal. The returns of the acreage and yield of the wheat crops from 1850, when returns were made by law, to the present time, forms a very interesting theme of study as presented in the following table:

Year.	Average in bushels.
1850	18.
1855	13.81
1860	13.80
1865	9.00
1870	11.00
1875	9.22
1880	17.20
1890	15.60

From 1850 there was a gradual decline in yield per acre until it had become but 7.2 bushels in 1859. The yield advanced slightly after that year, and remained for about nine years at 12.11. Since then, through the introduction of commercial fertilizers and better tillage, the average yield per acre has increased.

In the early history of the state corn was one of the most extensively grown crops; the virgin soil and climate were conducive to splendid yields. Michaux,[1] in describing his observations in Ohio, says, "The culture of maize is nearly the only one which the early inhabitants follow, and although it is far from being brought to

[1] Michaux Travels, page 133.

Principal Farm Crops

perfection, and the land is still so full of roots, it is nevertheless so fertile that the stems rise ten or twelve feet, and the annual produce is from twenty-five to thirty quintals per acre. During the first years which succeed the clearing, wheat grows too rank and sheds its seed without forming an ear, so that it cannot be sown until the end of four or five years, by which time the earth is freed from the greater part of the stumps and roots which remained in it at an earlier period. Nine tenths of the interior farmers use only maize bread; they make it into loaves of eight or ten pounds weight, which they bake in cottage ovens; or into small cakes, baked on a plank before the fire. The bread is generally eaten hot, and is not much relished by those who are unaccustomed to it."

About 1833 much interest was being centered in the sugar beet industry. France was making quite a success of the manufacture of sugar from the beet at that time, and it was thought the same could be done in Ohio. One of the most enthusiastic supporters of the idea was Mr. J. Sullivan

of Columbus, who deserves the highest praise for having demonstrated at that early date the great aptitude of Ohio for that species of agricultural investment of labor and capital. Liberal expensive experiments at that time were made with partial success in the extraction of the saccharine matter, but as the company could not succeed in securing crystallized sugar because the facilities for extracting the sugar were so meagre, the culture was abandoned before the accomplishment of the desired object. The cause of the abandonment at this date was only because the want of practical experience made the manufacture of sugar uncertain in the minds of the members of the co-partnership engaged in the experiment.

Principal Farm Crops

In the early settlement of Ohio flax was grown for the fibre, to be manufactured within the family for clothing and other domestic purposes. The seed produced an oil, the demand for which increased for a while with the growth of the state; and in later years the plant was grown chiefly for the seed. If a paper mill[1] was in the

[1] Ohio Agricultural Report, 1875, page 333.

vicinity the fibre was taken and manufactured into paper; but if the distance was too great, the fibre was permitted to rot in the manure pile. At one time there were quite a number of flax manufacturing establishments located in Ohio, which for a time did a fair business, but were finally destroyed by unfavorable legislation. Hemp, also, in the early history of the state was to some extent produced. But with the development of the cotton industry in the South, both flax and hemp gradually declined in value and production. Since then the cotton fibre has completely supplanted the place once occupied by flax for clothing and other purposes; and the oil produced from cotton seed is much esteemed in the arts—possibly it fully rivals the flax seed for all artistic purposes. Then, too, another rival to the flax seed oil is found in certain preparations of petroleum, which serve an admirable purpose for the rougher and more common kinds of painting. The cotton seed oil being cheaper than that of flax, there is no surprise in the decline of the flax industry in Ohio.

Rye and barley at one time were extensively grown, but they have fallen short in acreage and value within the last two decades. *Principal Farm Crops*

Ohio lies in the great agricultural belt of the United States, and consequently the majority of all important crops have received culture and attention some time during the history of the state. Numerous varieties of all kinds of farm crops have been tried for success or failure, and though a century of our history has passed we are just now systematically making the tests and trials of the best kinds and the best conditions for the production of the various farm crops on Ohio soils.

CHAPTER VI

HORTICULTURE AND FORESTRY

When the early immigrants came to Ohio they brought with them either young fruit trees or grafts of some favorite variety from the old homestead, as well as seeds of the vegetables and different kinds of fruits and grains. So the kinds and varieties of fruit depended upon the place from whence the immigrants came. On the Western Reserve were found chiefly the New England varieties, while in the counties south of this section the Pennsylvania and Maryland varieties predominated; but at Marietta the New England varieties were found as well as throughout southeastern Ohio.

Prominent among the different kinds of fruit were the apple, pear, and cherry. The first year these were planted in the garden patch, to be replanted in a year or two in the few acres later cleared. In the congenial soil and climate the trees grew thriftily and successfully for the settlers, and in a very few years yielded fruit. In

that virgin soil, filled with available plant food, we are not surprised at the ease that everything would come to maturity. There is occasionally found an old apple tree of the first settlers, but most of them have disappeared. One of the oldest orchards in the state was at Marietta, Ohio, which was located there in 1790. The place on which this orchard was started was known as the Dana farm. "Some four or five acres on the bank of the river were cleared the first season, and apple seedlings, as soon as large enough, transplanted to it. Some few of these still remain. There was some fair fruit in it, but none that was worth propagating." Pears, peaches, and cherries in their native element flourished without signs of disease and produced bountifully the most luscious fruit. In 1805 the peach tree[1] was most extensively cultivated, if we may use the term, in the state. It required no attention, but would grow with such vigor as to bear in the third year. Pears[2] flourished abundantly until 1825 when they were affected with the blight and by 1830

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[1] Micheaux Travels, page 134.

[2] Ohio Agricultural Report, 1867, page 462.

they were mostly dead. Ever since then pears have been very uncertain, though certain seasons have afforded some of the richest crops. About 1835 the peach began to be diseased and soon acquired the same character of uncertainty. Cherries, too, in some sections of the state have deteriorated to a marked degree. The factors, which have most prominently affected our fruit trees and caused this deterioration, have been the fungous diseases and numerous insects. It may be that more careful attention to our orchards in the way of spraying, etc., will restore vigor to the trees so that we may hope to see some day the fruit of our boyhood days. In 1796 Israel Putnam returned[1] to New England partly for the purpose of getting scions of the choicest apples. He obtained quite a quantity—a one-horse wagon load—and sent them to his home on the Muskingum, six miles above Marietta. He sent to Ohio forty varieties[2]; and distributed a portion of the scions to the settlers who had trees to ingraft. He then in connection with his

[1] Ohio Agricultural Report, 1867, page 462.

[2] Ohio Cultivator.

brother, Aaron W. Putnam, who lived in Belpre, opposite Blennerhasset's Island, commenced immediately the nursery business. The first trees planted by the Marietta settlers were in 1796, yielding some apples, and from these they obtained sufficient seed for a small beginning. These were the only two men who carried on the nursery business or cultivated trees for sale till about the year 1817.

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The Western Reserve had been settled by the New Englanders also, and good fruit received their earliest attention. Some of their early orchards were very good, others were indifferent; this was because they were established from seedlings, for it was too difficult to bring cumbrous freight. As their seedlings grew up and opportunity offered, a very large majority of the trees bearing independent fruit were grafted. Whenever any of these settlers returned to the East either on a visit or on business, they always returned with young trees or scions of the most popular varieties; these, as their trees grew, supplied many others with grafts, and much was obtained in this way before any nurseries were established.

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A large number of the fruit trees were also obtained from Virginia and Western Pennsylvania by settlers who went there for their necessary supplies. In the northern part of the state, among the individuals who were prominent in introducing fruits was Mr. Dille, who at an early date grafted his orchard with fine varieties, from whence many obtained grafts. Judge Fuller, coming from New York at an early date, brought many varieties from that region which were disseminated over a large territory. George Hoadly was also prominent in this matter and was, perhaps, the first to introduce the pear to any extent. "He was one of those intelligent amateurs in horticulture and pomology, whose pride was to excel, and whose fine taste was of the highest adornment." About the year 1810 Dr. Jared Kirtland came from Connecticut and settled in Mahoning county with his family, and to this family the state is indebted, and perhaps more than to any other, for the advance in horticulture.

In 1824, Professor J. P. Kirtland, in connection with his brother, established a nursery at Poland, then Trumbull county,

and brought on from New England above a hundred of their best varieties of apples, cherries, peaches, pears, etc., and in a year or two following, brought from New Jersey above a hundred of the best varieties of that state. Others were obtained from New York, making the Kirtland nursery from the first very extensive and valuable. Dr. Kirtland devoted a great deal of his time to the improvement of the cherry; by his system of hybridation and the judgment and skill with which he managed it, he produced over thirty varieties of cherries,[1] which stand prominent for their excellence. Credit is due his brother for producing the Kirtland pear. Another man who was very active in trying and experimenting in horticulture in the early history of the state was Mr. Andrew H. Ernst, near Cincinnati, who during his career introduced into his grounds nearly six hundred varieties of apples, and about seven hundred of pears. The object was to test by experience the most valuable sorts of the diversified soil and climate of the Western country.

Another character prominent in the hor-

[1] Ohio Agricultural Report, 1867, page 464.

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ticultural affairs of the state was Nicholas Longworth, of Cincinnati, who died in 1863. For fifty years he was closely identified with the growing of flowers, strawberries, and grapes. He was well known in both the United States and Europe, and as an amateur cultivator he expended thousands of dollars in horticulture and floriculture. He owned large tracts of land in the lower parts of Cincinnati, and as early as 1820 he established nurseries there and planted and disseminated "every variety of fine fruits that could be obtained in the United States, East or West, making occasional importations from Europe of such varieties as were thought to be adapted to our Western climate."

The first vineyards of the state were planted by Longworth in 1822, with the Cape or Schuylkill grape. Some years before a French settler, Menensier, attempted to grow grapes in the city of Cincinnati, but he had little success. His efforts, however, attracted Longworth's attention, and, together with the fact that the Germans very naturally desired to cultivate, to which they had been accustomed in Europe, led him

to undertake the improvement of the grape. Great numbers of foreign grapes had been imported and tested, but were universally unfortunate, and for a time it was thought vine culture would result in utter failure and disappointment. But just at this time, about 1820–'22, the keen and thoughtful observation of this determined vine-planter noticed an account of a native vine, a promising wine grape, in the possession of Major Adlum[1], of Georgetown, D. C. The Catawba was at once sent for and procured, and is now the great wine grape of the country, being now cultivated in every state of the Union. The remainder of his life was spent in developing this grape. Until the last year of his life he was untiring in his efforts to procure and test all varieties of native grapes in his gardens and vineyards. Mr. Longworth bears the same relation to vineyard culture as Fulton did to steam navigation. Others made earlier efforts, but he was the first to establish it on a permanent basis. It is, therefore, with justice that he has been distinguished as the father of successful wine farming in the

[1] History of Cincinnati.

West. His experiments at first with foreign grapes were numerous and costly, and after years of trial, they all had to be abandoned as unsuited to our climate, and the best native varieties substituted. He spared no efforts and expense to find out the best native varieties, for at the best even our hardiest native vines are subject, like all other fruits, to diseases, and cannot be relied on to produce uniformly good crops. Mr. Longworth had at one time over one hundred varieties growing in his vineyard for experimental purposes alone. But with all the grapes the Catawba was his greatest success, and as long as it continues to spread its leaves, to stretch its tendrils and bear its precious fruit, his name will be remembered, indelibly stamped upon every vine-clad hill.

The culture of the strawberry owes its remarkable success and extent in this state to the determined and persevering efforts of Mr. Longworth. A market gardener had long known the value of planting the pistillate and the staminate plants, as fertilizers of the fruit, but had kept it a secret because he feared if it became known his profit would

be lessened. One of the sons of this man one day visited Mr. Longworth's gardens, and in looking over the strawberry beds pointed out the sexual difference in the plants, from which Mr. Longworth took the hint. He immediately tried the experiment and found it successful. He at once published it to the world for the benefit of all cultivators.[1] "From that time on Cincinnati became famous for her strawberry market, and the prices of this fruit were so reduced as to bring it into abundant use with all classes." No sooner had Longworth unlocked the key to successful strawberry growing than the shafts of ridicule were directed to him. Editors, botanists, and horticulturists were against him, and the most serious attacks were made by them in opposition to his theory; but the stern facts of nature, which were open before his eyes, though overlooked by them, were brought forward as clinching arguments, and enabled him to sustain his position and carry his points with the jury of a discriminating public, until now all are upon his side of the question, and no one will admit he ever

[1] Ohio Agricultural Report, 1867, page 466.

entertained any other views. But many a hard battle was fought and many a contention he had with "wise savants, Eastern nurserymen, and learned English gardeners, before his new theory was admitted to be true; and almost as much ink was shed in this strawberry war as in some of the wars of the Western borders."

The most important varieties of strawberries that he produced were the Superior, Prolific, and Extra Red. Had he produced no others his labors in this department were well rewarded.

The Ohio ever-bearing raspberry, from the Shaker village of Watervliet, was brought first into notice in other parts of the state by Mr. Longworth, and by him widely disseminated throughout the country.

FORESTS.

The forests in Ohio in their original distribution extended almost compact and unbroken throughout the length and breadth of the state, with the exception of a few marshes in the western and northeastern parts, but at the present time the encroachment of field and pasture has destroyed the

greater part of the forest areas. Nature has been as lavish in her variety of forms of forest growth as of the smaller native fruits. Among the most prominent of the former have been the oak, elm, ash, beech, maple, hickory, chestnut, butternut, black walnut, wild cherry, sycamore, tulip-tree, basswood, locust, sweet gum, poplar, willow, mulberry, cucumber, boxelder, buckeye, cottonwood, dogwood, etc., and of the latter were the cranberry, which grew in the marshes, blackberry, paw paw, raspberry, plum, persimmon, wild grapes, wild strawberries, etc. The early settlers often depended upon the forest fruits, as chestnuts, acorns, beechnuts, etc., for the food for fattening their hogs.

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The forests of Ohio have been very rapidly removed, to a greater extent than should have been permitted, and to-day we find ourselves affected with forest hunger. The time is close at hand when legislation will be necessary for the protection and the promotion of forest growth in the state.

CHAPTER VII

THE HORSE STOCK OF OHIO

It is a matter of great difficulty to trace the horse stock in Ohio. Good horses were introduced into different portions of the state at a very early day, but most of the stock produced in Ohio previous to the introduction of railways, that gave any indications of superiority, was at once transferred from the East. The first horses in the state were brought by the Marietta settlers, but the introduction proper began about 1807, and came chiefly from Pennsylvania. This immigration of horses reached a very high tide between 1820 and 1830, and they were distributed principally through Columbiana, Stark, Wayne, Richland, Huron, Harrison, and Jefferson counties,[1] and from them spread throughout the state. The original horse was of large size, heavy and slow gait, perhaps of Flemish origin, and of the breed known then as Conestoga. The Dunkards and Memoirists lived in these counties,—two religious sects, whose

[1] Ohio Agricultural Report, 1857, page 350.

members were invariably agriculturists, and whose excellent stock and neat farms were know as in proverb,—being interested in improving stock, introduced the best of this early stock of horses. In 1828 some of the French settled in Stark county, bringing with them excellent crosses of the French horses. There were in the same county about the same time some native crosses, and these bred with the French draft horses produced a strain of excellent farm horses.

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New England people came in greatest numbers to Ohio from about 1815 to 1820, while the Pennsylvania and Virginia people came to central and southern Ohio at an earlier date, fixing in a degree the type of horses of the brawny Flemish blood of the Dutch farms of Pennsylvania, while the lighter and better breeds came with the Virginians. This early stock composed the native stock of Ohio. As Ohio was the earliest settled of the Northwest territory the original type of the horses of Ohio was diffused over the great West.

One writer says: "It was a notorious fact that most of the earlier settlers had no

just appreciation of the superiority of a well-bred horse over any animal called by that name, even though as ungainly as a kangaroo, and bred downwards until they had as little heart and loin as a newly dropped merino lamb."

Of the blood stock first brought to the Scioto valley region were several mares introduced from the south branch of the Potomac, Virginia, by John I. Van Meter, and later the stallion "Spread Eagle" from the same region. The stock of this stallion seems to have been most diffused and esteemed of any single horse's ever brought to southern Ohio. He was afterwards owned by Felix Renick of Chillicothe, and after further service in Ohio was taken back to Virginia, on account of the popularity of his stock in that region. Virginia also furnished a stock of horses which were esteemed especially for their value as saddle horses. There was also another horse in Franklin county of saddle type that was very popular for years, known as "Punter," of a bayish body, muscular and low, and similar to the Morgan breed in build and action. They were excellent in short

races, but were too light in bone. These strains of horses were the principal ones in fixing the type in the Scioto valley. In the eastern part of the state was introduced another class that had much to do with fixing the style of the early Ohio horses. In the vicinity of Steubenville and eastern Ohio a large French draft horse, called "Salisbury," was bred to the heavy Flemish and Conestoga mares of the teamsters and wagoners of this region, who carried on the conveying and transfer business into Ohio from the Eastern cities. This stallion was well known in this section, and his diffusion was spread far and wide. Other stallions in this same district, but of less importance than the above, were "Shylock," a stallion of fair size, but popular as a roadster; and "Pirate," an animal smaller and belonging to the running strain.

An early writer in the *Ohio Cultivator* says: "There were classes of horses which were diffused all over eastern Ohio and western Virginia whose popularity is still known. They are the 'Tuckahoe,' the 'Heatogo,' and the 'Timelion.' These are well kept, lively, serviceable horses.

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Most of the good mares in eastern Ohio are based upon 'Consul' blood; the 'Elipose' stock is considerably interwoven, and the kindred of 'Sir Archy' and 'Duroc.'"

The first blooded stock appeared about 1825, when a few good stallions were brought into the state; but we have no authentic date of any good brood mares having been introduced.

Northern Ohio was even worse off in the way of horses than the eastern and southern sections of the state. The immigrants were from the Northeastern states, and had brought quite a miscellaneous assortment of horses. Harris says,[1] "There was more ill-breeding done in this section than in any other part of the state. They seemed to be, in too many cases, scrub breeding from run-out English and Flemish mares, showing a great number of narrow-chested, leggy, pale dun, and sorrel animals, without constitution, or action. Many of the first settlers in all the sections of the state brought good teams with them, but for want of suitable stallions the race was not kept up."

[1] The Horse of America, Vol. II, page 76.

Such was the condition of the horse stock in Ohio as late as 1835. But a few stallions had been brought into the state and no mares, and the grade of this stock deteriorated into the lowest order of scrubs. Between 1835 and 1840 a livelier interest appeared in the horse-raising of the state. Improvement had been begun. Though brood mares were of an inferior quality, yet suitable stallions were what were needed. A few race courses were in use in 1826, but up to 1838 the number increased considerably. This feature had its influence in bettering the condition of the horses of that period. The trouble was, continual cross-breeding had so deteriorated the horse stock in a few years, that 1835 found a fairly large number of horses, but of a more inferior quality than twenty years before. Not until about 1847 did conditions become better. Importations all along had been slow. As early as 1836 a Morgan horse was introduced into Lake county by Dr. Miles. This stallion was but a fair representative of the breed; and through numerous crosses the farmers were disgusted with the inferior stock and favored larger animals than the

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Morgans. This was not the fault of the breed, however, but of this particular animal.

In 1840 there was a change. A few years before a tide of prosperity had struck all classes alike. Emigration was to the West, and in the excitement of the times farm stock took a rise with the rest. Importations now began, and were continued uninterruptedly, but it was several years before the grade of Ohio horses had improved.

The style of stock-raising in Ohio now fast assumed a new and fixed character in favor of utilitarian availability. And it was especially true in regard to horses. In the earlier days, as we have learned, the heavy stock from Pennsylvania was esteemed the perfection of horse flesh. Upon this were engrafted some of the tapering styles of the English blood, and the Eclipse stock became also quite common as well as the other strains heretofore mentioned. As a natural consequence we soon had a breed of tender, imperfect animals, that turned out a race in every part of the state of cripples, in which ringbone, spavin, heaves,

founder, and blindness became the common characteristics.

In 1832 "Bellfounder," from the famous English horse of the same name, was foaled in New York city, on Long Island, and raised by T. K. Kissam, and was sent to Ohio by T. F. Allen, who stood him at Cleveland for some time, after which he appeared in different parts of the state. From him were secured a very large number of very fine colts, whose popularity and value were immensely great in developing early horse-raising in Ohio. They were highly esteemed as light carriage horses. They possessed a large share of speed and endurance, of good fair size and proportions, and if well bred were easily kept in good condition. The prevailing color was dark bay, with black mane and tail. The effect of this horse was great, and was seen for many years after.

The year 1847 was an important epoch in the horse affairs of the state because of the introduction of the Morgan animal from Vermont. The original Morgan horse from Vermont was foaled in Springfield, Mass., in 1793. He was got by True Button,

whose father, Wildair, was of such distinguished excellence he was re-exported to England for the benefit of his stock. The Morgan horse stood in Vermont from 1792 until his death. From him and the choice mares of Vermont descended many excellent colts. The result has been the production of a family of roadsters of much similarity of appearance and uniformity of character, unsurpassed by any others for serviceable qualities. About 1847, when the farmers began to bestow increased attention on the improvement of their breeds, many became interested in the Morgan breed, which became quite famous and notorious throughout the state. The first[1] of this breed in the borders of the state was brought by the Messrs. Wm. J. & H. D. Ladd into Jefferson county. A short time after A. E. Austin, of Trumbull county, introduced another. In 1849 an association of farmers in Erie county introduced the Morgan "Messenger,"[2] the third Morgan horse in the state. Further introduction was now rapidly spread throughout

[1] Ohio Cultivator, Vol. V, page 133; The Horse of America, Vol. II, page

[2] Ohio Cultivator, Vol. VI, page 54.

the northern and central sections of the state. The chief fault to be found with the animal was the size; however, he was sufficiently large for roadsters and general usefulness in the state.

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The early Morgan horse[1] was esteemed for activity, gentleness, hardiness, and docility; well adapted for all work; good in every spot, except for races on the turf. They were lively and spirited in their action, carrying themselves gracefully in the harness. They had size in proportion to height; bone clean, sinewy legs, compactness, short, strong backs, powerful lungs, strength and endurance. They were known by their short, lean heads, wide across the face at the eyes; eyes lively and prominent; open and wide under the jaws; large windpipe, deep brisket; heavy round in the body, broad in the back, short limbs in proportion to size, broad quarters, a lively, quick action, indomitable spirit, move true and easy in a good round trot, and fast on the walk. Color, dark bay, chestnut, brown, or black, with dark, flowing, waving mane and tail; head up; moving with-

[1] The Albany Cultivator, 1848.

out a whip; about fifteen hands high; action powerful and spirited. They were highly celebrated for general usefulness, made the best of roadsters, and lived to a great age. In fact they were termed the perfect "Yankee harness horse."

The first importation[1] of Norman horses to Ohio was in 1851, when Dr. Brown, of Circleville, who was on a visit to the World's Fair, brought home with him a two-year old stallion named "Normandy," better known as "Old Bill," or the Valley Horse.[2] Dr. Brown was impressed with the great power and moderate speed which this class of horses possessed, having an average weight of fifteen hundred pounds, and standing fourteen to sixteen hands high. The stock of this stallion was very uniform in character, of good size, hardy, and free from hereditary defects. Another important importation that had a direct and emphatic influence upon breeders, was that when the gray colt "Louis Napoleon" was imported, in 1851, by Messrs. Fullington and Martin, of Milford. The

[1] Ohio Cultivator, Vol. VIII, page 98.
[2] The Percheron Horse, page 20.

tedious voyage had the effect of making the colt look rough and sullen, and the popular verdict was against him. The first year Fullington bred seven of his mares to him, and as the foals developed "the fame of the horse began to come up and he rose in favor and value year by year." His weight was near sixteen hundred, and he stood fifteen and one half hands high. In 1856 he was taken by A. P. Cushman to Illinois, whose coming to that state was the beginning of an important industry. The editor of the "Percheron Stud Book" says of him: "It has been estimated that over four hundred of his get were successful stallions. He was undoubtedly the best known and most popular French horse ever brought to America." He died at Normal, Ill., in 1871. The loss of this horse to the state was soon felt, for this class of horses seemed to satisfy the farmers better than any other, and the great popularity of the stock induced[1] Messrs. Groton and Martin to attempt the importation of another stallion. They succeeded in getting the bay stallion, "Rollin,"

[1] Ohio Cultivator, Vol. VIII, page 98.

of fine style, from the family of the French cavalry horses. In February, 1854, he arrived at Woodstock. He was a mahogany bay, sixteen and one half hands high, a beauty for strength and style in his line of blood.

These three horses were the means of producing an improved breed of horses, especially useful for the plow and other farm purposes. The next important importation of horse stock from Europe was that of the Darby Plains Importing Company,[1] of Union county, where they brought in 1857 "Defiance," an English draught stallion; "Eber," a Cleveland bay stallion; "Lady Sykes," a thoroughbred mare; "Niger," Clydesdale stallion; "Young Sir Tatton," thoroughbred stallion; "Hiram," a Cleveland bay stallion; two Norman stallions and a Norman mare with foal by a superior Norman stallion. This importation brought to the state the first Cleveland bay, Clydesdale, and English draft horses. They were not long in gaining friends, and soon were in great demand for breeding purposes. At the close of the

[1] Ohio Agricultural Report, 1857, page 358.

year 1857, Morgans, French draft, Percheron, and Bellfounder breeds had fully established themselves, and were practically the only strains in service. *The Horse Stock of Ohio*

The Darby Plains Importing Company's importation had material effect after this time on the development of the horse stock of the state. Further importations of Clydesdales, Percherons, Cleveland bays, and French draft horses followed in constant succession to that of the Darby Plains Importing Company in 1857, so that in a few years the service of pure-bred sires was possible in nearly every township of the state. The popularity that the state and county fairs received after 1860, directed attention to the importing and breeding of running and trotting breeds. While at an early date there had been introduced into the state animals of this type and much interest centered in the race-courses as early as 1825, yet the moral side of raising animals of this class was questioned, and even modified by the legislature of the state, so that interest in raising the "blood stock" subsided and the stock itself depreciated. Within the last three or four de-

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cades, however, popular favor has turned in favor of "sporting breeds," and interest has again become prominent in the production of these classes of horses.

In the decline of live stock during the past decade, horses have depreciated to the minimum in value. Many of the best brood mares have been sold for export, and only a few colts are raised each year, so that to-day on thousands of farms in Ohio there is an inferior grade of horses. We have not kept on advancing. Our horse stock is not what it should be. We err when we stop the breeding of horses. The future is going to demand them good and well bred; bred along some special line to produce a special purpose horse that shall be typical of his class. The future outlook for such animals is bright. Let Ohio farmers interpret the situation and profit thereby.

CHAPTER VIII

CATTLE DEVELOPMENT IN OHIO

England can rightly claim the honor of improving and developing the cattle of the world. The work of Bakewell and Collings and Knight and Bates will never be forgotten. Accounts of their successes with cattle improvement were not long in reaching America, and as early as 1783 we find importations being made from England into Virginia and Kentucky of the "Shorthorn" or milk-breed cattle by a Mr. Patton, and who followed with a second importation in 1817. Some of this milk breed were introduced into Kentucky about 1803. A direct importation from England to Kentucky was made in 1817, with the comment that "the cattle were the best of the kind to be had in England."

Ever since Ohio was organized as a state the Miami and Scioto valleys have been regarded as the stock region of the state. As far back as 1808 cattle were supplied for the Eastern markets from this section, and there is no doubt that some of the de-

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scendants of the Virginia importation of 1783 found their way into the Scioto valley, while it is also probable that some of the best cattle in southern Ohio owed paternity to Kentucky and were descendants of the bulls[1] Phito and Shaker, which were imported into Kentucky in 1803.

The first importation made into Ohio from England direct, was made in 1834 under the auspices of the Ohio Breeding and Importing Company. On November 2, 1833, Governor Trimble, George Renick, General Duncan McArthur, and others, for the purpose of promoting the interests of agriculture and of introducing an improved breed of cattle, formed a company and contributed the amount necessary to import from England some of the best improved cattle of that country. The sum of $9,200 was very soon subscribed in ninety-two shares of $100 each, and after making the necessary preliminary inquiries and arrangements, the company appointed Mr. Felix Renick of Ross county, Ohio, their agent for the purchase and importation.

[1] Farmer's Guide, page 92. *Farmer's Chronicle*, vol. I, page 89. Ohio Agricultural Report, 1867, page 301.

Nineteen bulls and cows of the pure-bred Shorthorn and Durham stock were purchased from some of the most celebrated and successful breeders of England. These were brought to Ohio, and kept together, under the care of an agent, and they increased in number by additional importations from England, when the whole was sold in October, 1836. After paying all expenses a dividend of $280 per share was divided on the ninety-two shares of the stock company, amounting to $25,760.

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This was really the beginning of the cattle business in Ohio. The greatest benefits resulted to the country by the introduction of this improved English Durham stock into the state of Ohio by that company. The immediate effect of this importation was to arouse an interest in improved cattle breeding. It made it possible to have an improved breed of cattle throughout the state as a result of crossing the English stock with the common stock existing at that time; and a very fine, large, and thrifty race of cattle in many parts was bred by this laudable enterprise. We must not forget, however, that the Marietta settlers

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brought with them from New England some excellent stock. This furnished the bulk of the cattle until 1807, when Mr. D. Wilder introduced into Warren county some of the Patton strain of Longhorn and Shorthorn cattle, which crossed with the natives gave a cross noted for their remarkable endurance.

Among the early pioneers in the Scioto valley were some Virginians who brought with them some cattle for feeding purposes.[1] These people introduced into Ohio the method of securing corn and stover together by cutting the stalks near the ground and shocking it in the field, as is the method in the present day. By this means the people were able to feed a large number of cattle. The only market was the East, and it was thought impossible to fatten cattle and drive all the way to the Eastern markets, on account of the distance and mountains. But in 1805 the trial was made, when George Renick of Chillicothe fed and drove a lot of cattle to Baltimore, the first that ever crossed the Alleghany mountains.

[1] Ohio Agricultural Report, 1869, page 434. *Ohio Cultivator*, vol. V, page 133.

The cattle arrived in good condition, and from that day the cattle industry increased, but did not, however, reach any great marked success until after improved blood had been given through the effects of the various importing companies; for to these companies the improvements to the cattle stock were in a great degree attributable, for not only had the cross of the cattle then imported with the former stock produced a breed far superior to the latter, in all essential qualities, such as size, form, neatness, early maturity, and aptitude to fatten, but made the raising and feeding more profitable and created a spirit of improvement among the people that soon made itself felt throughout the country.

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The first four improved breeds of cattle introduced into the state were the Shorthorns, the Herefords, Devons, and Ayrshires. It should be kept in mind that almost contemporaneously with the admission into the Union, Ohio was known as a cattle raising state, but it should be remembered that during the first quarter of a century of the state's existence, very little else than "natives" were reared or grazed.

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While it is true that a few of the "Patton stock" were introduced into the Scioto valley at an early day, yet they never spread over a very large territory, and little affected the general conditions of the stock.

At the time of the Ohio company's importation, the cattle trade of the state was included in four distinct sections of native breeds, where no effort had been made at improvement, and assimilated or possessed characteristic qualities peculiar to itself and entirely dissimilar from the other sections. From a history of the early cattle trade in Ohio[1] by William Renick, an extensive cattle raiser and feeder, we find some data as to the native stock. Renick purchased his cattle in a territory extending from the fortieth degree north latitude in Ohio southwardly to Green river in Kentucky, and was acquainted with all the cattle districts. From his report we find a description of the cattle of the Hocking or Hill district, which extended from the eastern margin of the Scioto valley indefinitely eastward. These cattle were healthy, hardy, and compact,

[1] The *Farmer's Chronicle*, 1868, page 230.

but too small and without room for improvement for profit to be dealt in by the regular feeder.

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The Adams and Highland county cattle with the adjacent territories of surrounding counties, were known by the general name of Brush creek cattle, and were a little larger than the Hocking, also healthy, hardy, and early fattened, and their general good qualities almost made up for their inferior size.

In Fayette and Madison counties, and in a part of Clarke and Champaign counties, was found the stock that was known by the general name of Barren cattle. These were much larger than the Brush creek, but their general qualities were not nearly so good. They were loose made, harder to fatten, and very much subject to disease. Their better size over the other breeds was their only recommendation. The last cattle district is the Scioto valley counties, where there was such a mixture and commingling of all sorts, from the common scrubs to the full-blood Patton, as to render them utterly indescribable. Such was the stock in existence in Ohio in 1834, when the Short-

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horns from England were introduced. The stock brought into the state by this importation was of the very best that England had. The Ohio company had greatly the advantage over all subsequent companies in more than one respect, the principal of which was, at that time, the beginning of the American demand for Shorthorns. The agents had the choice of very nearly all the cattle to be found, and the best English breeders seemed desirous to encourage the thing—as they naturally would for their own prospective interest—and one of them at least declared[1] he would not sell to an Englishman the cattle he sold to the agents. We learn from this importation that the showiest bulls brought the best price when sold, but some lacked pedigrees and in the end were not nearly so good as some less valued with good pedigrees, and which transmitted their good qualities to their get.

Devon cattle had many enthusiastic friends in other states before their introduction into Ohio. But a short time after the improved Shorthorns had been brought into the state, an occasional Devon found

[1] *Farmer's Chronicle*, 1868, page 214.

its way in. The first pure-bred Devon cattle that we have any record of being brought into the state was in 1842, when John (Ossawatomie) Brown imported from England some pure-bred Devonshire cattle.[1]

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A few years late C. A. Ely, Esq., of Elyria, purchased seven Devon cows, eight calves and a bull of C. H. Crippen of Michigan. All of these were pure-bred, and the bull, "Duke of Devon," an imported animal from England. Other prominent breeders of this breed were E. Matchem of Pittsfield and H. C. Safford of Oberlin. Devons were imported and bred in Ohio in much greater numbers some years ago than they have been of late years.

The first direct importation[2] of Herefords to the state was about 1852–'53, by Messrs. Thomas Aston and John Humphreys, two English farmers in Elyria, where they imported for breeding purposes two Hereford bulls and two heifers, of very fine stock. In 1853 Mr. D. B. Kinney, of Oberlin, purchased a fine Hereford bull,[3] four years old, that was imported from the best stock

[1] Allen's American Cattle, page 73.
[2] Allen's American Cattle, page 73.
[3] *Ohio Cultivator*, vol. IX, page 215.

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in England. Several herds were soon established in Lorain county, and were bred well and successfully there, but for some reason at first they did not become extensively popular in Ohio, especially, south of the Western Reserve, where the Shorthorns held the field against all rivals.

Ayrshire cattle came into the state about 1848, and soon established themselves in the state by their superiority as milkers. The Scioto valley had early imported the Shorthorns for beef, but the dairy stock long remained undeveloped, until the introduction of this breed into the Western Reserve by E. A. Brown of North Bloomfield, Trumbull county, who purchased a premium bull and cow of the Ayrshire breed at the Buffalo fair in 1848, and Messrs. William H. Ladd and J. R. Cunningham of Richmond, Jefferson county, the following year brought into the state from the herd of E. P. Prentiss, Albany, N. Y., a bull, cow, and heifer of the breed. These animals were of the best Ayrshires of the country. The bull "Dandy" held the first premium of the New York state fair, and though not a large animal was one of the

best and most excellent of the Ayrshire breed. He was bred by Mr. Young at Killmann Nains, Scotland, imported by Samuel Wood of Lenox, Massachusetts, and brought to this state by the Messrs. Ladd and Cunningham. The Ayrshire cattle were slow to establish their good reputation in Ohio.

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Since 1870 several noted breeds of cattle have become firmly established in the state. Dairymen had not been entirely satisfied with their cows as butter and milk producers. The fame of the Jersey and Guernsey breeds reached the progressive farmers and in but a short time after the first importations in America by Messrs. Tainbow, Norton, and Buck, the Jersey and Guernsey breeds found their way into the state in rapid numbers since 1875. The first pure bred Jerseys in the state were imported in 1865 by A. D. Bullock of Cincinnati. The same year several cows were imported direct from the island of Jersey by John F. Stettinius, also of Cincinnati. About the same time Joseph Langsworth and William P. Anderson of Cincinnati both imported and brought animals from

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other importations into that section. From this as parent stock the Jersey breed was gradually extended in other parts of the state. Numerous herds of fine imported stock have been established almost constantly since then, and to-day the Jersey or Guernsey cattle are found in large numbers in every county of the state.

Between 1875 and 1880 the craze for dehorning and the organization and importation of the polled breeds began. The first importation of the Aberdeen-Angus was by Mr. D. N. Hine of Erie county, who went to Scotland and personally selected a number of the finest stock. He was followed by Renton Garringer who in 1882 established a herd in Fayette county. Soon after came the direct importation of nearly one hundred head by C. R. Dye of Miami county. In rapid succession to these came the herds of Mr. G. W. Perry in Champaign county, and Bradfute & Son in Greene county. To-day there are over fifty persons in this state recording pure blood Angus to the American Aberdeen-Angus Association. Perhaps the most prominent herds of this breed in this state

to-day are the Meadow Brook and Nickel Plate herds owned respectively by Bradfute & Son of Cedarville, and J. P. Hine of Shamrock. From these several herds have emanated a large number of smaller herds now located in more than half the counties of the state. About the year 1881 William W. Crane of Miami county conceived the idea of producing a hornless breed of Shorthorn cattle. His plan was to begin with the common native muley cow and cross with a pure blood Shorthorn bull, reserving the muley calves, and again using a Shorthorn bull of pure blood, continuing the process for several generations when it was believed that "there would be a fixed type of muley cattle to all intents and purposes, practically pure blood Shorthorn." The plan succeeded. Miami county, the birthplace of the Poland China breed of swine, again came before the breeding world, and showed in a short time a popular breed of cattle.

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Another general purpose polled breed of cattle that has received its principal attention and development by the hands of Ohio men, is the Red Polls, a breed of ancient

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lineage recently imported from England. The foundation herds of this breed are those of J. McLain Smith of Dayton, and Capt. V. T. Hills of Delaware. These two breeders have imported a very large number of very choice animals from England, and their "continual success in the American show yards gives strong testimony of the high rank which these men have attained for their favorites." The newest of the polled breeds of the state are the Polled Jerseys, which also had its origin and development in the Miami valley. Credit for founding this new herd belongs to Mr. J. R. Orr of Greene county, who "founded the herd upon the old Polled Jersey cow 'Daisy,'" a sport believed to be a pure blood Jersey. All the offspring of this animal have been muleys, so the type is well fixed, and a bull of this breed can now be counted on for a large per cent. of muley calves from horned Jersey cows. This last named is one of the youngest breeds of the state, and will undoubtedly fill a long felt want.[1]

[1] History of Polled Breeds abstracted from Seventh Annual Report Farmers' Institutes of Ohio, page 225.

The first Holstein in Ohio is credited to O. F. Jones of Wooster, Ohio, who in 1866 purchased "Zuyder Zee" 4th, a bull bred by Winthrop Chenery. The next was a bull purchased by O. B. Gould of Franklin Furnace, Scioto county, in 1874. In the same year John Connor of New York imported a three-year old cow named "Lucy" for Robert Gowdy of Xenia. The boom for Holstein importation began in 1872 and ended in 1882. Thousands of these cattle were brought to America and many were brought to Ohio. These animals at that time were purchased for from $20 to $100, and the cost of importing together with the quarantine averaged $85, for those brought into Ohio. They readily sold for good prices. Heifers, according to quality, for $150 to $600, and cows for $150 to $1,200. In 1882 even there were one thousand Holstein cattle in Ohio. Since that time this popular breed has so advanced in this state that to-day there are over five thousand registered cattle owned by more than two hundred breeders, besides a large number of unregistered pure bred stock. A good part of the dairy herds of the state contain

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one or more pure Holsteins or a grade, and probably one fifth of the dairy cows to-day in Ohio are of this breed.

The history of the cattle industry in the state has been one of continual improvement and development. The condition of Ohio being cosmopolitan, all breeds have found foothold and favor; and some of the best and most typical animals have been bred by the skilled and painstaking breeders of Ohio.

CHAPTER IX

BREEDS OF SHEEP IN OHIO

In Ohio the raising of wool and mutton has always been a very important branch of productive labor. With both sheep and swine the so-called native breeds, or those introduced by the first settlers of Ohio, were better calculated for the conditions attending the early periods of our history, where the lands were wild and infested with beasts of prey, than for existing circumstances. In those days fleetness and strength were desirable qualities in both. But the directly opposite quality, sluggishness, small bone, fine head, are now desirable points in their present easy circumstances.

The improved sheep required acclimating and use to soil and food. At first in some sections sheep were quite popular, both for wool and mutton profit, but the serious losses occasioned by dogs and wild beasts, and the difficulty of effectually protecting the flocks against these intolerable nuisances, deterred new capital from entering the field. It was for this reason that

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improvement in sheep was slow to take place in some parts of the state.

To Seth Adams belongs the honor of importing[1] the first sheep for breeding purposes into this state, when he brought a pair of Spanish Merinos from France to his flock at Zanesville in 1801. In 1807 he moved to Dresden, taking with him twenty-five or thirty of his flock, the descendants of this pair. He continued to breed them for several years, but the newness of the country discouraged him and he sold his entire flock and moved back to Zanesville. The first pair Mr. Adams sold in Ohio was to Judge Todd of Kentucky, for $1,500. This importation of Mr. Adams's was of great benefit to Ohio and Kentucky. After moving back to Zanesville, Adams again took up the improvement of sheep, this time getting some of the Humphreys Spanish Merinos,[2] one of the best ever imported into the United States. He had a sort of partnership agency from General Humphreys for keeping and selling them ; but they soon became scattered for lack of care and appreciation.

[1] The American Merino, page 11. Fine Wool Sheep Husbandry, page 31. Ohio Agricultural Report, page 460.

[2] History of American Merino Sheep, page 34.

The Humphreys importation is the most important as well as the first traceable of the early sheep importations into the United States. Colonel Humphreys had been minister to Spain under President Adams, but was recalled by President Jefferson. On his return in 1802 to his home in Derby, Connecticut, he brought with him twenty-one rams and seventy ewes of the finest sheep he could obtain in all Spain. It is acknowledged on all hands that this importation was carefully selected from the choicest flocks of Spain. Occupying the position of minister as he did he was in favor with the government, and was granted privileges in the selection of sheep which others had not enjoyed, and he no doubt made the best of his opportunity, and selected nothing but the best and purest blood.

The history of the improved sheep of America is full of interest, and the state of Ohio has had no little part in the production of the fine strains of the sheep we have. The Spanish Merino received our first attention, but soon in our state as in other sections of the country there were imported the French Merinos or the Rambouillet,

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and the German or Saxon Merinos; and from these early Spanish Merino importations was developed the American Merino. All these various breeds were derived from the original Merino of Spain. Sheep, originally brought into Spain and subjected to the influences there, in process of time had certain distinct traits fixed, by which they were characterized. The French Merino resulted from the change of condition, and altered system of management when the Merino was taken from Spain into France. While in the same way, the Merino, being taken from Spain into Saxony, a new isolation of them took place there; and new conditions after a time received modifications, to which the name Saxon properly belongs; and in the same way still, the Merinos being brought from Spain into the United States have undergone many changes and assumed modifications until it became a special being in itself as distinct as the Spanish, or the Saxon, or the Rambouillet. It is not necessary to go into the details of the history of the Spanish Merino sheep since its importation into the United States. There

seems to be no uncertainty or doubt about Col. David Humphreys's importation being the most prominent in having wielded the greatest influence in the Merino flocks of this country. Aside from the Adams importation of 1801 and later the sheep that he brought into this state from Colonel Humphreys's flock, that of Mr. Thomas Rotch was the most important. In 1809, Rotch with a number of friends emigrated from Connecticut to Stark county, Ohio, and brought with him a small flock of the imported Spanish Merinos [1] which he had purchased from Colonel Humphreys. Mr. Rotch bred his flock carefully for a number of years. Three of the number which he brought with him from Connecticut he sold to W. R. Dickinson of Steubenville, Ohio, in 1809. Dickinson was a member of the firm of Wells & Dickinson, who were extensive woolen manufacturers at Steubenville. They owned some fine flocks and spared no money in improving them. The foundation [2] of the Dickinson flock was purchased from James Caldwell of Pennsylva-

[1] Ohio Agricultural Report, 1899, page 456.

[2] Delaine Merino Register, Vol. I, page 24. American Farmer, Vol. VIII, page 81.

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nia, who was an extensive breeder of Merinos. Caldwell's flock was likewise improved from the Humphreys importations, but not altogether; for Caldwell himself says he spent more than $40,000 upon Merino sheep, from the importations that followed Humphreys. A large flock was accumulated by him, which in 1815 was sold to Mr. Dickinson, and this flock was further improved at Steubenville. The fame of this improved Dickinson flock began to spread until it became one of the most celebrated in the United States, and large numbers were procured for breeding purposes. It was soon found that the sheep differed from the Spanish and the French and Saxon that had been imported, and in course of time assumed distinct modifications over the other breeds. This is one of several varieties of the Delaine type of Merinos.

Its improvement and development have principally taken place in this state and Washington county, Pennsylvania. The American Merino has a few items as landmarks in its progress.

"While the writings or printed histories

of the Adams, Humphreys, Heaton, and Jarvis importations are practically lost, owing to numerous transfers, the flock of C. S. Ramsey, Castleton, Vermont, has an unbroken traditional record from the Humphreys importation to the present time. In 1809 Isaac Putnam of Marietta, Ohio, bought of Seth Adams, Zanesville, some full blood Merinos, and founded a flock which was continued by his son, J. L. P. Putnam, substantially to the present time, but without registration. June 13, 1811, Dr. Increase Matthews of Putnam, Ohio, bought an imported ram and two ewes, just imported into Virginia, and had them brought in a wagon to his farm in Ohio, where he kept up a pure flock until 1850. In 1811 Colonel Humphreys sold a ram for 1,600 acres of land in Ohio, to Paul Fearing and B. J. Gilman of Marietta, Ohio, and this ram was brought and laid the foundation stock for a flock which was kept up for many years. In 1826 Col. John Stone and George Dana of Bellepre, Ohio, bought a number of pure Merinos from the celebrated Dickinson flock of Steubenville, Ohio; this flock just men-

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tioned was founded in 1815 and continued until 1829, when it was a great flock of three thousand head shearing about five pounds of washed wool per fleece. It was then sold and scattered [1]. The Black Top or Delaine Merino is an excellent variety of the American Merino.

All these breeders were instrumental in building up and improving the pioneer sheep of the state. And to their care and energy much of the credit of the American Merino is due.

The introduction of the full blooded Saxony Merinos into Ohio is not definitely known, but it was soon after their first importation into the United States in 1825-1826. In 1860 the Saxons had practically run their course and were generally superseded by the Spanish Merino. There was some crossing with the French Merino and also with the Silesian, introduced by William H. Ladd into Jefferson county in 1854. From 1854 to 1860 the number of fine-wool sheep greatly diminished, and long-wooled sheep began to attract more attention. The common, or so-called native,

[1] The American Merino, page 20.

sheep went into Ohio with the early settlers but were eventually crossed out by the Merino. As early as 1830 the improved English breeds were taken into the state.[1] In 1834 Isaac Maynard brought into Coshocton county the first Southdowns, New Leicester, Lincolnshire and Cotswold sheep that were ever brought into the state.

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The importation consisted of ten Southdowns and three of each of the other kinds. An early Southdown flock was that of J. F. King of Warren, Ohio, who commenced breeding Southdown sheep in 1844 with stock from the flocks of Jonas Webb, England, imported by J. H. Hesless of Trumbull county, Ohio. In 1848 he bought a ram of imported stock known as "Morris ram." Descendants of this flock are found in some of the best Ohio flocks of the present day.[2]

The great change in the sheep industry of the state is attributed to the low prices of wool since 1872. Merino flocks at this date were not as large, and the mutton sheep were more looked to, and in general

[1] Report of Sheep Industry of the United States, page 521.

[2] Sheep Husbandry, 1892, page 921.

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proved to be the most profitable. Fine Leicester, Lincolns, Cotswolds, Oxfords, Hampshires, Southdowns, Shropshires, and Horned Dorsets have found their way into all parts of the state and are increasing, while the Merinos are decreasing. In 1865, 90 per cent. of the sheep of the state were Merinos and their grades, but to-day scarcely one fourth are of this class. Fine-wool flocks have suffered since 1883. The decline of wool and the uncertainties of legislation continued with the increasing demands for mutton convinced many farmers of Ohio that wool-growing could be made to pay only when combined with raising mutton. Breeds were therefore selected which would raise good carcass as well as shear a good fleece. The Cotswold came in for a good share of this change, and many farmers found it advantageous to cross the Cotswold with the Merino.[1]

For a long time the Southdowns were the favorite mutton sheep, particularly in the neighborhood of the cities where the best mutton was in demand. Among the early mention of the Southdowns in Ohio, "The

[1] Sheep Industry of the U. S., 1892, page 552.

Western Farmer and Gardener" issued in Cincinnati in March, 1841, contains an engraving "of a pure-bred imported Southdown ewe, and of a ewe whose dam was a pure imported Southdown and her sire an imported Bakewell," the latter being represented with a lamb at her feet. These sheep were owned by George Smith, near Carthage, Ohio, who it is said, "is one of the few individuals in the West who have turned their attention to the breeding of the finer improved varieties of sheep." Of the sheep it is said, "the Southdowns may be taken as the model of the *hill-sheep*, they have a patience of occasional short keep, and an endurance of hard stocking equal to any other sheep; and early maturity, and the flesh finely grained and of a peculiarly good flavor. The wool of this breed is short, close curled and fine, and free from projecting fibres." In a later issue,[1] October, 1841, we find Mr. White advertising for sale, "18 buck lambs of pure Southdown and Bakewell breeds and few of a cross between those and the Cotswolds;" also, "several thoroughbred

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[1] *Western Farmer and Gardener*, October, 1841.

Southdown and Bakewell bucks will be permitted to stand in the season."

Mr. J. F. King, Warren, Ohio, commenced breeding these sheep in 1844, with a ram and four ewes that Mr. Hesless, above mentioned, had imported from the flock of Jonas Webb, England. In 1848 he bought a ram from H. G. Morris that was bred by Mr. Morris from imported stock; in 1852 he bought from Seth Bushnell, Trumbull county, Ohio, a ram that had been imported from England by Mr. Christy of northern Ohio; in 1856 he bought of R. A. Alexander, Spring Station, Kentucky, the choice of ten rams imported from Scotland; in 1860 he bought from Joseph Cope, West Chester, Penn., a ram that was bred by J. C. Taylor, Holmdel, New Jersey, that was by an imported ram out of an imported ewe; in 1870 and 1874 he bought rams of Thomas Bennington, Sr., LaPorte, Ohio, and in 1874 he bought a ram from Mr. Fell of Pennsylvania.

T. C. Jones, Delaware, Ohio, commenced breeding Southdowns in 1864. The first ram used was purchased from George H. Brown, Washington Hollow, New York.

This ram took first prize as a yearling at the New York State Fair in 1864, and was from Samuel Thorne's, Dutchess county, New York, breeding. His first two ewes were also from Mr. Thorne's flock. Rams afterwards introduced into the flock were from the flock of A. J. Alexander, Spring Station, Kentucky.

G. J. Hagerty & Sons, Hanover, Ohio, were early in the seventies, perhaps before, breeders of Southdowns, purchasing from J. F. King, Warren, Ohio; S. Meredith & Son, Indiana; T. J. Magibbon, Kentucky, and others.

J. Duer, Galena, Ohio, was in 1875 breeding Southdowns with stock from the flock of T. C. Jones, Delaware, Ohio.

T. L. Anderson, Anderson, Ohio, was in 1876 a breeder of these sheep with ewes from the flock of A. J. Alexander, Kentucky, and ram tracing to the flock of Samuel Thorne, New York.

The Oxfords, Hampshires, and Shropshires all took a fresh start about 1885, and their respective breeders soon became very enthusiastic in the production of these mutton breeds.

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A breed that has since 1891 come into rather prominent note is the Horned Dorset,[1] whose distinguishing peculiarity is its ability to lamb at an early season. Lamb production has lately become an important feature, and the past few years have demonstrated the wonderful success of the breeding. Horned Dorsets have been known in the United States only since the fall of 1885, when Messrs. E. & A. Stanford of England exhibited a small flock at the Chicago Fat Stock Show. The first owned in the United States were purchased by William Daley of Lockport, New York, from V. E. Fuller of Canada, in March, 1887. The first direct importation from England was the twelve head of Adin Thayer of New York, in June, 1887. The first importation into Ohio was in 1891, by T. S. Cooper. Mr. Joseph E. Wing of Mechanicsburg, Ohio, is one of the prominent raisers of this breed. His flocks consist of some of the original Cooper importation, and later purchases from Pennsylvania and New Jersey.

In the early history of the sheep industry

[1] Continental Dorset Club, Vol. I.

of the state but little importance was attached to the production of good mutton, and it was further neglected when the introduction of Merinos directed the whole attention to wool. Wethers and rejected sheep furnished the mutton; but this was but a secondary object. It was only in some particular districts where there was an increased demand for fat wethers, or on farms containing rich pastures and an abundance of food, the fattening of wethers became a matter of much importance. This state of affairs prevailed not only because the production of wool was more profitable, but also the savor and value of good mutton was not appreciated. Years later the prices of wool had fallen, and production of mutton began to receive attention. The English races of sheep were looked to; for the English people appreciated mutton and developed the mutton breeds. So about 1845 to 1850 two English breeds, the Leicester and Southdown, became of practical interest, and many animals of these classes were introduced. At later periods the Lincoln, Cotswold, and Oxford Downs were imported and became well appreciated.[1] The

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[1] Ohio Agricultural Reports. Sheep Industry of U. S., 1892.

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most noted of the early Shropshires in the state were imported from England by Geo. Maller in 1862, when a ewe and the famous ram "Lion," both bred by Lord Berwick, Shrewsbury, England, were brought into the state by Judge Chaffee. At the present day there are prominent flocks of all these breeds in Ohio.

At first, as we have inferred, wool received the principal attention of sheep growers. But wool growing was not always a grand success. It was a difficult matter for the flock master to keep an eye on his flock and the other on the Washington politician. While improving the former the latter got the best of the situation, and the farmer to-day realizes that to receive profit from his flock, the mutton side must be largely taken into consideration. And so the paying sheep of Ohio are of the latter class. The course of the strictly wool sheep has been run. It was a glorious race and famous. If the breeders of mutton sheep reach as great success, the highest laurels can be given them, and the loudest shouts in their praise.

CHAPTER X

INTRODUCTION AND DEVELOPMENT OF SOME BREEDS OF SWINE.

Ohio has always been a swine-producing state, and within her borders two of the most popular and celebrated breeds owe their development.

While the early settlers and immigrants brought with them the best household and farming implements their limited means would allow to obtain in the older states, they also brought the best strains of cattle, horses, sheep, and in many cases hogs. But the last class did not receive the early attention for improvement that the others did. The China, Berkshire, and the Russian were the first [1] used to cross upon the common hog of the state. As soon as the people of the state realized the value of the hog and the ease of producing him by corn and the timber-furnished food, improvement began and was continued in a marked degree. The production of hogs increased then so rapidly that Cincinnati

[1] Ohio Agricultural Reports.

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early became the packing center of the West. In the Miami valley the China, Berkshire, Woburn, Russian, and the Irish Grazer blood mingled with that of the common hog and the Poland China breed was evolved and improved to meet the wants of packer and feeder. In northern Ohio, in the dairy districts, where the conditions of feed, soil, and handling were very different, the white hog of Pennsylvania was improved and we find a breed known as Todd's Improved Chester White. The early importation of hogs was meagre and unimportant. We find expressions of some improved and pure-bred hogs introduced into the state from 1815 to 1820. But little advance was made before 1850. A few had been exhibited at the fairs the few years previously, but in no classified lists. Since that time, improvement has been rapid, and even greater than any advance that has been made with horses, cattle, or sheep, and with a far smaller outlay for imported animals for breeding stock. The earlier importations were from the Eastern states, while a few were imported from England. But very few of these importa-

tions took place prior to 1850. At this period there was scarcely a herd in the state. A few pedigreed sires of Leicester, Essex, Berkshire, and Yorkshire were introduced and an occasional brood sow was the limit of the first introductions.

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The common hog of the state was principally bred, and at an early day cattle and hog raising became the important branches of farming in some parts of the state, especially in the Miami valleys[1]. For a long time then the common hog was grown and bred. But demand of hogs with certain requirements for the packing houses in Cincinnati, led all hog growers to adapt themselves to certain conditions, which gave rise to improvement, by more careful feeding, and judicious breeding, with other and pure-bred animals, which in time found development of the Poland China hog. This breed of hogs has since become very popular in the Western states. The history of their origin, development, and correct name has been subject of much comment and theory.

This breed has been characterized by

[1] One Hundred Years Progress.

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numerous names, because of its development, but no one man, in any particular place, and any particular time, produced the breed. Its formation is the result of many conditions and circumstances. "The Poland China hog originated in the Miami valley, and it is nowhere apparent that it originated from the purpose or work of any one individual. The conditions of soil, climate, produce, and markets of that region, all favored the business of swine growing, and as a result pork producing became the most profitable feature of farming."[1] The Poland-China breed has not been the product of a few years, neither was the breeding and selecting of some one special breed of hogs. It has resulted from the crossing and selection of several strains. Breeds in evidence in the production of this famous herd were the common hog, the Berkshire, the Bedfords, Byfields, Irish Grazers, the Russian, and the Chinas.[2] These different classes and breeds have all entered in the blood.

The common hog in the state represents

[1] Swine Breeding, page 21.

[2] Record of Poland-Chinas, Vol. I.

the animal the early settlers brought with them. And upon this animal was begun the framework that supports the intrinsic type of the most celebrated breed that has been evolved and developed on the American farm. The common hog was the basis of this illustrious breed. He no doubt was first brought to the state by the settlers at Marietta and Washington, but by whom history does not record. No doubt his blood was mixed with so many different crosses that it was easily influenced and impressed by contact with blood of any other animal of better breeding. The Byfield and Russian hogs[1] were early introduced in the Miami valley and were highly esteemed for crossing purposes. The former was a great white hog with lopped ears of considerable length, small head, dished face, thin hair, large fine bone, and thick in the shoulders. "Different grade crosses of these two breeds and again with the Chinas, have produced the Warren county hog." Both of these breeds were known in Ohio before 1840.

The Berkshire element was prominent in

[1] Record Poland China, Vol. I.

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the history of the breed, for as early as 1835 a boar and a sow were introduced into Butler county, from Albany, New York. It seems probable that the Berkshire and Sussex had many years before produced the Bedford or Woburn strain which was a permanent breed of hogs in southwestern Ohio in 1845-1850. About the same time the Irish Grazer appeared. This animal was "white, with a few spots of black, upright ears, light jowl, fine coating, and would fatten at any age. This was the stock of hogs that gave the Poland Chinas their fine coating and symmetrical form."[1] In 1839 these Irish pigs were brought to Cincinnati; later importations soon followed and they became an approved breed.

"Latterly the introduction of some of our best breeds (from England) with which to cross the old Irish swine had been attended with decided success, although there is room for further improvement. Berkshire, Suffolk, Yorkshire, and some Chinese boars and sows have been introduced"[2] (1838).

[1] Western Stock Journal, 1870.

[2] Genesee Farmer, Vol. III, page 98.

The breed which did the most for the improvement of the hogs of the Miami valley, as they did for the improvement of swine in England, is the China. The first introduction of this breed into Ohio was in 1816 by the Shakers of Union village. They were called the "Big China Hogs." They were bought in Philadelphia by John Wallace, trustee of the Shaker society, near Lebanon. There was a boar and three sows. One sow had some sandy spots about her, in which appeared some small black spots. The boar and the other sows were white. By their use on the mongrels, by the Russian, Byfield, and common hogs, came the Miami valley hog. That this Shaker importation of Chinas was pure China stock there is reason to doubt.

Nevertheless, they impressed in a wonderful degree their offspring with the quicker feeding quality, that seemed to be the leading idea in the improvement of that period.[1] Before the year 1842 many allusions were made concerning the China hog by writers in the *Ohio Cultivator*, and the

[1] Standard Poland China Record, Vol. I, page 26.

Western Farmer, as to their value for crossing purposes, for their impress was made on all animals which were crossed with them. "The use of the China has been beneficial in correcting coarseness of frame, in quieting the restless disposition and increasing the tendency to fatten at any age, and refine the texture and quality of flesh."[1]

The Poland or Red hog was another powerful element in attaching its characteristics to all its posterity, especially the color and vigorous growth. There is some question and doubt as to whether the Poland was a distinct breed at all. This class might have been the sandy Berkshire from England, or even an improved mongrel in this state, but it is reasonably certain that it was a class near akin, in form and disposition, to the Berkshire. And to this class belongs one of the strongest elements of improvement, which impression upon the hogs of the valley and the West has been lasting and powerful.

As to the precise crosses, and by whom and under what circumstances the Poland

[1] Standard Poland China Record, Vol. I, page 26.

China breed was formed, history does not tell and tradition has scarcely more to tell, except that the common hog as a basis, crossed with the better breeds and offspring intercrossed through many years with an unconscious guidance all the time by the law of selection, the Poland China breed has been evolved and developed, until the law of isolation had produced a type, separate and distinct. "Their size, color, hardiness, docility, and good feeding qualities make them favorites when purely bred, and where more fineness, quicker maturity, and a little less size is demanded, we are satisfied the sows bred to boars of the Berkshire breed produce the best feeding and farm hogs in the world."[1]

Todd's Improved Chester White breed of hogs has its origin in northern Ohio, in the dairy region of the state. The origin of this breed began about 1834 when Kneeland Todd brought into Ohio from Connecticut a boar of the "Norfolk Thin Rind" breed and a white pig known in East Haven as the "Grass-Breed." The latter were considered by the farmers of that

[1] Colburn's Swine Breeding, page 33.

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vicinity as very valuable hogs, "noted for their early maturity, good feeding quality, and excellent meat. They were of medium size and pure white."[1] "The 'Thin Rind' was black, belted and white. The progeny of these pigs were very fine and soon had notoriety."[1]

In 1833 Isaac Haskins brought from New Bedford, Mass., a very choice pair of pigs for breeding purposes. He settled in Wakeman, Ohio, the home of the Todds, where acquaintance with these breeders was made and which resulted in crossing the Todd hogs with the Haskins, making for the former one of the finest herds of swine at that time in the state.

In 1848 one of the Todds in attending a county fair discovered some very fine pigs bred by Joel Mead of Norwalk, Ohio. These were of the "Large Grass-Breed," pure white in color, with short, heavy legs, knees springing, head short and dished, hair straight and fine, ears large and closely lopped, tail large, body long, back straight and broad, good ham, and full flank. The

[1] Record of Todd's Improved Chester White Swine, Vol. I, page 11.

best boar pig of this exhibition was purchased and bred to the Todd stock, producing a cross which not only carried off the prizes at the Cleveland State fair over all competitors, but was a marvel to all who saw it. In 1862 a hog called "Normandy Boar" was purchased. This breed was of French origin but nothing more seems to be known of it, excepting its characteristics, uniform in appearance, pure white and curly, short, thick neck, and medium bone. This animal made a valuable cross with the Todd hogs, and the combination of these different bloods formed a class of hogs known then as the "Todd hog." The Todd Improved Chester White breed is the result of the combination of blood of the "Pure Chesters" mingled with the "Todd Hog."[1] In 1867, Hon. S. H. Todd purchased of George B. Hickman a pair of "Pure Chesters," and soon after three more, followed by three other shipments, which mingled with the breed previously developed found the Ohio Chester White breed.

[1] Record of Todd's Improved Chester White Swine, Vol. I, page 12.

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Berkshire hogs were found in mongrel condition to some considerable extent about 1840. It had oft been repeated that at this time no pure-bred animals of this race were to be found in the state, though a few pure-bred animals had been brought to the state long before. Soon after, however, the Berkshire fever struck the state. Importation and improvement at once began and in a few years this breed was well established in the state. Among the early breeders in the state whose untiring industry devoted to the Berkshire breed as seen to-day should be mentioned, E. R. Glenn of Springfield; Garrett Williamson, Springfield; Aaron Tichenor, Lebanon; Munson Reach, Lebanon. This breed spread very rapidly; the farmers bred them with great zeal, with a view of the greatest possible improvement.

Improved Suffolk hogs made their appearance in the state about 1853, when Peter Melendy,[1] near Cincinnati, Ohio, brought from Boston the Suffolk hog "Independence," which had been pronounced the best hog in New England, by winning

[1] *Ohio Cultivator*, Vol. IX, page 373.

the various prize cups and fair premiums. Mr. Melendy brought from the same place fifteen Suffolk swine at the same time. In the same year Messrs. N. F. Chaffee and F. J. Jones [1] brought into Ashtabula county a lot of this rare breed. They were beautiful specimens of the pork race. In 1854 N. B. Hogg, Esq., Newark, Ohio, purchased some Essex and Suffolk swine from the imported stock of Col. L. G. Norris, Fordham.[2] These three breeds furnished in the main the Suffolk stock which was later diffused to some extent throughout the state. The Chester Whites, Yorkshires, and more recently the Duroc-Jersey breeds of swine have been well received in this state. The Chester White in the dairy regions and the Yorkshires and Duroc-Jerseys in the corn-producing districts, have received considerable attention. No especial efforts have been given to the development and improvement of either in this state. They owe their introduction to their peculiar fitness for certain conditions and environments. The history of swine rais-

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[1] *Ohio Cultivator*, Vol. IX, page 358.
[2] *Country Gentleman*, 1864.

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ing and breeding in Ohio is one of continual improvement and advancement. The factors of selection and judicial breeding have been the most potent in the production of our improved breeds of hogs to-day. What breed or breeds of cattle, or sheep or horses have been produced from such mongrel stock? We are proud of all these that have been developed but we are just as proud of our swine, which choice animals and breeds have been produced through the aid of but little imported stock.

CHAPTER XI

INTRODUCTION AND IMPROVEMENT OF FARM IMPLEMENTS AND MACHINERY

With the approaching completion of the Ohio canal, a great activity was taking place in converting the forests into waving fields of grain. Agriculture was unsettled until 1832, when canal navigation was begun, and so great an impulse was given, the effect was felt for a long time. Improved farm implements now resulted as a necessity. Before the number was few because not needed. Now life was put into the work. A market was obtained and the call left unfilled. A period of improved machinery set in. The old wooden mouldboard plow was being superseded by the cast-iron mouldboard in 1825, and similar progress was taking place in all other branches of agriculture. The demand of the market was for wheat, and soon the lands were being stripped of their forest growth. In the development of farm implements, none had done more than the

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wedge-shaped, plain, narrow, convexed edge, with its light handle of tough hickory, cut to fit and retain the grasp of the hand. What a weapon that has been! What fitter emblem for the state than the pioneer axe? Next in order came the stump puller, which was an efficient aid in reclaiming the land for the plow and the production of crops. The plow came in its order. Of all farming implements the plow holds the first place of importance. Jethro Wood had brought out his cast-iron plow, but it was not introduced in the state until 1825, and received no general use until some years after. Up to the year 1840, there was little improvement in the plow. Editor Q. D. Harris says the following of the Ohio plow:[1] "In 1817, when we took our first lessons in plowing, by riding on the beam, farmers had only one kind of plow, the wooden plow,—massive beam, mould-board, landside, standard—all except the wrought-iron share and long bolt; and many is the week our boy's legs have trudged between the handles of such an institution after a yoke of oxen with a horse

[1] *Ohio Cultivator*, Vol. VIII, page 340.

in the lead. When we arrived at the years of discretion—that is, twenty-one and a wife—the cast-iron plows were coming into fashion, but though a great improvement on the timber plow, it was such a thing as no modern farmer (1857) would take as a gift. The opening of the rich, black lands of the West created a demand for a plow[1] that would scour, which the best cast-iron plows would not do upon the prairies or upon the Scioto bottoms. Then the steel plow was brought out, and the farmer could hardly credit the tale that a plow was found that would clean in any soil. Up to the year 1848 steel plows in Ohio were as scarce as honest lawyers in chancery. At the beginning of that year, a blacksmith who had learned to make steel plows, came to Gambier, Knox county, Ohio, with his young family, for the purpose of educating himself for a minister of the gospel, at Kenyon college. Having no capital but a good trade and a stout heart, he set up a rude forge and commenced to 'work his passage.' On the first of February, 1848, he inserted a modest advertisement in the *Ohio*

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[1] *Ohio Cultivator*, 1848.

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Cultivator to furnish steel plows and warrant the share and mouldboard of every one to polish throughout in any soil however damp. This was thought a very bold proposition, and brought orders from some of our heavy valley farms. The plows justified the warranty, and the student-blacksmith had his hands full of work. Having acquitted himself creditably in both capacities, the student laid aside his leather apron and hammer and betook himself more exclusively to the surplice and prayer book, while others have kept up the apostolic succession of the plow. We will not say in which capacity the blacksmith has done the more good to the country. Certain it is that as a plow maker he deserves the meed of a most honorable mention, and now as we sometimes take the hand of the Rev. E. A. Strong and look into his keen eye and determined face, we feel like pronouncing upon him the benediction of agriculture; and when we go to Gambier Hill we look upon the sight of that rude forge with as much interest as we used to muse among the ruins of Ticonderoga and Crown Point."

These plows, made by student Strong, seem to be the first successful iron ones that were used in the state. The steel plow came into use about 1848, and passed through the stage of experimentation most successfully. Plow makers now exercised their best skill in fashioning a plow that should turn the soil in the best manner with the least possible draft.

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We find the improvement about as follows: The timber plow was in use about 1825 when the cast-iron plow appeared and was used simultaneously with the old timber plow, when in 1840 the timber plow fell into disuse and the cast-iron was used. But it was not satisfactory because it would not clean. Eighteen forty-eight brought out the steel plow. This one turned the soil in a good manner, with a diminished draft over the others. Plow makers now exercised their best skill in fashioning the steel plow. Eighteen fifty found the plow, first begun by student Strong, popular and efficient; they quickly superseded the old cast-iron plow throughout southern and central Ohio, when a few years later they were introduced all over the state. In 1851

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the Michigan plow[1] of Newell French was introduced into the state and was pronounced good by most of the intelligent farmers. It was a cast-iron double plow. The "double" feature was especially esteemed, and in 1855 there appeared a number of steel double plows, along with the steel single ones. Steel plows now came into general use. Two of the most prominent makers were Gill & Co. of Columbus, and J. Roberts & Co. of Cincinnati. One enthusiast in writing of the steel double plow says, "A steel double plow makes a seed bed as handsome and clean as if it were done with a spade—not a weed or tuft of grass left uncovered, and the whole surface even and as fine as meal. Here is another advantage, upon a sod field, thus prepared with but one plowing you can go on with the wheat drill, or cultivator plow, and put in the seed at once, with all the elements of fertility in the right place."

At this time much attention was given to improved plows. "The old must go" was said and acted upon by farmers rich or

[1] *Western Farmer and Ohio Cultivator.*

poor all over the country. The timber and the old wrought-iron mouldboard plows were laid away. In the United States at about the time cast and steel plows came into use three hundred different plows were patented and of these forty or more were granted to Ohio people. In a short time the side draft, hillside, center draft, subsoil, and drainage plows came into extensive use.[1] The plow in most common use in Ohio during the "fifties" had a share to take in about ten to twelve inches, and some of the valley plows as much as eighteen inches; the mouldboard of corresponding style, to turn over the great width. The short bold curve, which was usually given to this mouldboard, was not adapted to lay the even unbroken lap, but left the land in a more broken and pulverized state. This plow was not so well suited for clay soils, but after a time manufacturers got to making them of all sizes and dimensions, to suit all soils and every taste. The coulter was not uncommon, being used a great deal in newly broken land to prevent the plow from being choked with rubbish;

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[1] Howe's History of Ohio.

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sometimes it was a sharp steel disk, sometimes a perpendicular projection from the share, and sometimes the place of coulter was filled by a smaller plow, but much larger than our plow coulter of to-day. Hillside plows were used to some considerable extent in the hilly parts of the state. It was quite popular to use across hillsides, always throwing a furrow down hill instead of running it up and down the slope, which besides the inconvenience on steep land, occasions in rainy seasons great washing of the soil. It is also used on level land whenever it is desirable to avoid ridges. The plow was made by having the upper and lower sides of the share and of mouldboard precisely similar, so that each in turn may form the sole, and fixing it on a pivot, which admits its being thrown around beneath the beam, from right to left or from left to right, and forming either a right handed or a left handed plow.

Left handed plows were most common in the state; the reason given was that the plowman was better enabled to guide the furrow horse with his left hand and the plow with his right. The team invariably

consisted of two or three horses abreast, which are kept at a proper distance by a "jocky stick" extending from the collar of one to the bit of the other.

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The pioneer harrow, made from the crotch of a tree, was succeeded by the triangular and "v" shaped ones, and they in turn gave over to some new inventions. The "v" shaped harrow most used was the Geddes folding, divided longitudinally, and the two parts hinged together, so as to admit either being raised by the driver. This was very convenient in fields encumbered with stumps and boulders as was the case in those days. The square harrow, both single and double in form, was in its primitive form efficient for pulverization on smooth land free from obstructions. Wooden teeth, and afterwards iron teeth, were used—large, square, or round, and few in number. Tough and sound timber four inches square was used for the frame.

Later inventions on this harrow gave us an implement with a large number of teeth, fastened in an iron frame. This makes an admirable harrow and ordinarily leaves the ground smooth and level. The spring tooth

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and disc harrows came in later, and have proved their high value for the work intended.

The old method of cultivating corn by hand and by the horse hoe, to rid the fields of weeds, caused particular attention to be given to dropping the seed at regular intervals, so as to admit the horse hoe, traversing the field in many directions. In 1824 a corn cultivator appeared, and was a valuable implement for the cultivation of the large areas that were being planted to corn in the state. Improved methods of field culture of cereals came principally through the invention and introduction of a variety of cultivators and other implements, by which animal power replaced the hand culture of the crop. At an early date the single shovel cultivator for one horse was produced, and later another shovel was added, forming a two-shovel plow. The latter was generally used until about 1860–'65, and to some little extent as late as 1880. The first straddle row two-horse cultivator was made by George Esterly in 1856.[1] This idea was immediately adopted and

[1] One Hundred Years of Progress.

cultivators of this type were soon used over the entire state.

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In 1831 the first threshing machine was introduced in the state, in the northern portion. Up to that time all the wheat was either threshed with a flail or tramped out by the use of oxen and horses. In the first quarter of this century in Ohio, eight to sixteen bushels of wheat were considered a light average for a man to thresh with a flail, although when the wheat was well filled, as it often was in some parts of the state, the result was higher. When horses were used a larger amount could be threshed. Three horses, a man, and a boy, in one day, could thresh from thirty to forty bushels. In those days this work was done in the winter time; the grain was winnowed and the straw used from day to day as threshed for feeding and bedding purposes. The first threshing machine in the state was a great curiosity, but at the same time emphatically opposed by all farm laborers. "They claimed it as a right to thresh with a flail, and regarded the introduction of machinery to effect the same object in a few days which would require

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their individual exertions during the whole winter, not only as an innovation of a time-honored custom, but as absolutely depriving them of the means of obtaining an honest livelihood. At a later date, when a reaper had been introduced into a field of ripe wheat as a matter of experiment only, every one of the harvest hands deliberately marched out of the field and told the proprietor that he might secure his crop as best he could, that the threshing machine had deprived them of their regular winter work twenty years ago, and now the reaper would deprive them of the pittance they otherwise would earn during harvest."[1]

The first threshing machines were awkward in appearance and clumsy in construction, and almost as much power was lost in friction as was expended in threshing; at that time it was regarded to have accomplished a very extraordinary feat when it threshed fifty bushels per day. Since the year 1831 each successive year has brought with it improvement after improvement, when in 1850–'53 they were perfected so as not only to economize power

[1] M. B. Bateman, Ohio Agricultural Report, 1869.

and lessen friction, but would "thresh, separate, winnow, and deliver the grain in a measure prepared in every respect ready for the market, mill, or for feed." Great improvement has been made since then. The large number of laborers that were required for threshing and raking, separating the straw and placing it on a stack, is now displaced and the whole done by machinery, working by the same power that drives the thresher. A machine has been developed from one which formerly threshed fifty bushels a day into one which in its utmost capacity may thresh several thousand.

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The year 1831 brought one of those great and valuable inventions which commence a new era in the progress of improvement, and whose beneficial results have been manifested not only in this state and country, but in the world at large. It was at this time that Cyrus H. McCormick invented and successfully operated the McCormick reaper, an invention that is as important to agriculture as the cotton gin is to manufacture. Perhaps no single invention made has done so much for the pro-

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gress of agriculture as did this invention. It doubled the production of wheat per capita of the population, and it released more than one half of the agricultural population for manufacturing industries. The first machine was characterized by those practical devices that have been incorporated in every successful reaper made since. The original reaper was made and tested in 1831, and embraced the following features: The serrated, reciprocating blade, operating in fingers or supports to the grain being cut. The platform for receiving the cut grain deposited upon it by the reel. The grain was then raked to the side in bunches ready to bind. There was also a divider to separate the grain to be left standing from the grain to be cut. The horses traveled ahead of the machine, and along the standing grain. The motion to move the operating parts was derived from the outer of two wheels, upon which the machine was mounted. In 1833 another reaper, the Hussey mower, invented by Obed Hussey of Carthage, Hamilton county, Ohio, appeared. Both of these machines were patented in 1834, the conditions in the

THE FIRST AMERICAN REAPER.

Invented and built by Cyrus H. McCormick, Steele's Tavern, Rockbridge Co., Va., 1831.

patents being simply these: McCormick's machine was mounted on two wheels, a main wheel which supported the greater part of the weight of the machine, gave motion to the crank, reciprocating the knife, and revolved the wheel, and a grain wheel at the outer end of the platform. Hussey's machine according to the patent had three wheels at the stubble side, all of which rested upon the ground. In case a wide platform was to be used the machine should have four wheels, the extra one at outer end of platform.

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With all the untiring efforts of these early inventors, their reaping-machines did not reach a very high degree of success, because they were not practical. However, many were very enthusiastic and sanguine in their hopes. One editor in describing one of these early machines, says: "The Hussey reaper cuts a swath five feet, but it is intended, when perfect, to cut from fifteen to eighteen feet. There is no agitation of grain. It falls to the ground where it stood in an opposite direction. Requires two horses to propel it, a boy to drive, and a man to lay the grain

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in bundles for binding. The man and boy both ride. The horses may walk or trot. Will perform better work in fast than slow motion."[1] But it required many years to reach the time for a reasonably perfect reaper. And the day is still in the distance for drawing the mowing-machine with the horses in a trot. These reaping-machines at first were not practical; but with constant efforts they became better and wider known when, in 1855, they were used generally and successfully throughout the state. The two machines[2] that were most popular and generally in use at the time of the universal introduction in the state, 1854–'55, were the Ketchem's and Maury's patent combined and adjustible reapers and mowers. But with the success of these, improvements did not stop. There was still too much labor required to bind the bundles. Eighteen hundred and fifty-eight marks the century with an invention that has revolutionized harvest methods. Charles W. and Wallace W. Marsh of Illinois conceived the idea of so constructing a machine

[1] *Farmer's Record*, 1833.

[2] Ohio Agricultural Report, 1856, page 173.

that it would deliver a swath of grain to a receptacle in the machine where two men standing could bind it as fast as cut. At first failure resulted because of improper financial help and faulty mechanical work on the primitive machines. But with continual perseverence 1862 found a fairly perfect machine that was practical in every respect, and to which every successful grain and corn harvester owes its ideas and success. In 1864 twenty-four practical machines were built in a little sash factory. In 1865 twenty-six were built. In 1866 the number grew to a hundred, and ten years later the Marsh harvester was being improved and built by nearly all our reaper manufacturers. Still the harvester was not complete. There was needed an automatic binder attachment. Eighteen hundred and seventy-five brought it, but it was the objectionable wire-binder. So every effort was made to find a suitable substitute for wire. Thousands of dollars were spent in efforts to get a straw band-binder, and then attention was turned toward possibilities of a twine-binder. To Mr. William Deering belongs the credit of

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the conception, as well as the putting into practical use, of single thread binder-twine. In 1880 the self-twine-binder became a pronounced success. In 1884–'85 the first all-steel machines were manufactured; while in 1892 the principles of ball- and roller-bearings were applied to our harvesting machinery, completing the development of the reapers conceived by Cyrus H. McCormick in 1831. Fifty years of effort,—what a victory for agriculture! While Ohio was not the birthplace of the improvements and inventions, she was the great experiment field where the survival of the fittest took place.

Before the reaping machines came into use throughout the country, the grain-scythe and cradle were the implements with which most of the grain was leveled. The length of the scythe was four feet; the cradle was formed of five finely-tapered ash fingers, and curved correspondingly to the blade; the snath, as light as is consistent with strength, was bent into an elegant curve. With this implement a good cradler could cut four acres per day. Mr. Flint, in his visit to America in 1818, was much pleased

with the cradle. He says:[1] "The use of this grain-cradle undoubtedly requires a peculiar knack; it is accomplished with a great swing of the body, and the grain is tipped out at the end of each cut; but if our people could learn the art of using it, it would prove a most valuable substitute for the sickle, or the common scythe. In fact, one cannot watch the operations in an American harvest field, without being impressed with a conviction that, if English farmers and our colonists are to compete with the American in growing corn and wheat, they must adopt some of those implements which American ingenuity, stimulated by necessity, has already invented and proved. It is not the grain cradles alone that are superior, the corresponding implements of this country, but the common tools, such as hayforks and rakes, and dungforks display a lightness, combined with strength and beauty of proportion and high finish, which is not seen even in our most improved ones, and is far superior, indeed, to those commonly used here. Their best five-pronged forks are cut out

[1] Royal Agricultural Society of England, Vol. xx.

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of a single piece of steel, and when swung around and dashed against the floor, a common test, ring like a tuning-fork; lightness and handiness are particularly attended to in these. It is to be feared that unless our manufacturers vie with these models, they will lose the colonial and foreign markets."

There had long been felt the need of seeding machines for both wheat and corn. The old method of putting in the grain by hand was exceedingly laborious and expensive. Inventors had been working for years to get a grain-drill that would not clog and choke from either the foulness of the ground or of the grain, and at the same time carry out the seed evenly and equally, depositing it at the bottom of the drills made by the hollow coulters. From time to time machines of this kind had been brought out, but it was not until 1848 and 1850 that a machine of any great degree of success was obtained. The Gatling wheat-drill, perhaps, came nearest the ideal at the time, and was quite extensively used. The seed by this machine was distributed by auger-like screws, which revolve as the machine is

drawn, and in proportion to its speed, by means of as many bevel wheels on the axle as there are coulters or teeth to the machine; these mesh into a like number of small, pinion-bevel wheels attached to the iron rods or shanks of the augers. These were extended into the bottom of the seed-box, to which are connected the hollow coulters, which carry the seed. The principle upon which the seed distributed the grain rendered its adaptation very complete for sowing oats, barley, wheat or rye. The quantity of seed can be varied from half a bushel to three bushels per acre, and in all cases the work was done with astonishing accuracy.

Following in close order the success of the grain-drill came the introduction of machinery for planting corn. Dropping corn by hand, and the use of a "hand jabber," were the methods that nine tenths or more of the farmers followed in corn planting up to 1854. Planters before that time were crude, undeveloped, and inferior, and did not answer the desired purpose; and though corn-planters for one and two horses were invented and introduced and

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to some little extent used in 1854, they were not fully spread over the state until twenty years after. The Barnhill Planter was one of the early patents, and very much commended in the sections where it was used. It was drawn by one horse, "planting with ease from five to seven acres per day, doing the furrowing out and covering at one operation, and better than could have been done by hand." It deposited one or two grains of corn at every nine or ten inches in the furrow. This machine was invented by J. Barnhill, Circleville, Ohio. The "hand jabber" was in use to a very great extent until the modern improved planters were introduced. This latter tool for all conditions has been about the only really successful implement for planting corn that we have had in this state until the modern two-horse planters have been developed.

As early as 1824 the horse-rake in its simplest and original form was invented. It was made of a piece of strong scantling three inches square, in which were set "horizontally about fifteen teeth, twenty-two inches long by an inch or an inch and

three fourths at the place of insertion, tapering on the under side, with a slight upward turn at the points, to prevent running into the ground. The two other teeth were cut off to about one third their first length, and draught ropes attached. Handles served to guide the teeth, to lift the rake from the ground in avoiding obstacles and to empty the accumulated hay." The revolving horse-rake was next generally adopted, possessing the great advantage of unloading without lifting the rake or stopping the horse. A further improvement was made by attaching the revolving rake to a sulky on which the operator sat, enabling him to do a larger amount of work with less fatigue. The most satisfactory improvement was the spring-tooth contrivance. In its original form, the teeth were made of stiff elastic wire, on the points of which the rake ran, instead of the flat sides, as in the case of the wooden rakes. They bent in passing an obstruction and sprang back to their places. This rake was unloaded by simply lifting the handles. The last improvement has been made by attaching the spring-tooth rakes

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to wheels, making a sulky in form, on which rides the driver, and by patented modifications he with ease lifts and lowers the rake as they become full or empty.

Hay tedding machines have been known for many years, but the heavy and cumbersome condition in which they were made prevented them from coming into common use. Within the last decade, however, it has been satisfactorily made and successfully used. It is furnished with forks held nearly upright, but worked by a compound crank, which scatters and turns the hay with great rapidity in the rear of the machine.

The original horse hayfork appeared about 1848, and was quite a relief to the severe labor occasioned by pitching hay from the wagon. It consisted of from three to four steel prongs fastened to a handle somewhat as our common hand forks of to-day. The prongs were plunged into the hay and elevated to the mow on the plan of leverage. The single fork was soon succeeded by the double-clasping fork which held the bundle of hay like the claws of a bird. The harpoon fork, on account

of the rapidity of its use, has been most commonly and satisfactorily used. Within recent years the hay loader has been operated in the field, carrying the hay up and dropping it on the load. It has obviated hand pitching.

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During the past few years unexampled progress has been made in the improvement and manufacture of farm machinery; all of which has been given immediate trial on Ohio farms to receive the judgment of Ohio farmers. Plows have been made of harder materials, and perfect in form and use. Harrows and cultivators, general and special, of numerous kinds and descriptions, now perform all the labor at one time done by hand. Seed drills for grain and vegetables, are truer in their distribution of seed, than the human hand itself. Mowers, reapers, and binders for grass, grain, and stalks, and machines for threshing, are now universally adopted by every husbandman of the state.

Hand labor has been replaced by machine power, physical energy by thought. From the wooden plow and harrow, the sickle, hoe, and flail, have been developed these

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implements whose quality and use is near the perfect. The poorer farmer sowed his grain by hand, covered it with the uncouth wooden harrow or a bundle of brush; with the assistance of wife and children, the harvest was done, the grain reaped, bound and secured, for the winter's threshing and cleaning. But progress was alive if slow. For it brought him the grain cradle, then the improved plow, then the winnowing mill, the threshing machine, the corn sheller, the improved wagon, the canal, the carriage, the reaper, the mower, the self-binder, and a thousand and one other implements and machines that have lessened his labors and cares and multiplied his material enjoyments for physical easement and mental culture.

CHAPTER XII

DAIRYING IN OHIO

Dairying in Ohio began with the first settlers. The cow was usually a part of the family, and grazing near the home could be heard the sound of her tinkling bell. And how gladly she was received with her treasure of milk, fresh for breakfast, fresh for the evening meal! The churn and the cheese-press were used at once by the earliest pioneers, for the products they furnished were not luxury but contributed to daily food. We have no evidence or records of any dairy products for commercial form in the early periods of the state. Butter and cheese had been made from the first but only for the family use. The chief reason perhaps was want of transportation. A large part of the pioneers had been skilled in cheese making in their eastern homes, but the wilderness afforded no place for the manufacture of butter and cheese as commercial articles. The cow was kept to labor and to furnish milk to the family. As the trees

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were cleared away and the settlers' conditions bettered a second and a third cow were added to the herd and butter and cheese making resulted in their order. Home cheese and butter making began in Ohio at an early date. It was a common thing during the spring and summer months to see at almost every pioneer's home the cheese hoop in operation. This consisted of a rail[1] or pole, with one end under the lower log of the cabin and lying across a rudely constructed cheese hoop, with a weight attached to the outer end, sufficient to press the cheese.

Many tales have been told about these proverbial cheese hoops where the leeks covered the earth and tainted the milk in every manufactured form. To an epicure or the modern cheese or butter maker such would be a serious drawback, and a wonder beyond expectant possibilities. As areas were cleared and enclosed, dairying increased and cheese making was developed. The chief difficulty was access to market. Cheese to some little extent had been made in Ohio for export before 1820, but the

[1] History of Geauga County, page 29.

difficulty of transportation kept the amount down to a minimum. The section of the state known as the Western Reserve has always been known as the principal dairy region and there, perhaps, the first cheese for commerce was made. The first man who carried cheese to the Southern markets was Mr. Harvey Baldwin, who during the summer of 1820 took the first cargo down the Ohio river. This first cargo[1] consisted of two thousand pounds, which had been hauled by wagon from Aurora to Beaver Point, Pa., and from there transferred to a pine skiff, on which he embarked as captain, supercargo and owner, and commenced his voyage down the Ohio, selling his cheese as he journeyed along at Wheeling, Marietta, Gallipolis, Portsmouth, Marysville, Augusta, Cincinnati, Madison, and Louisville, Kentucky, where he made sale of it, and terminated his voyage at a good profit above cost and transportation.

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This undertaking had been so successful that making and marketing cheese on a large scale was now begun. In 1825 Harvey Baldwin, Samuel Taylor, and

[1] History of Geauga County.

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Apollos White purchased several dairies in Bainbridge and Auburn and sent cheese down the Ohio. Cheese was sold in this manner for several years to the Southern markets of Cincinnati, Nashville, Huntsville, and others at from 25 cents to 30 cents per pound. At the same time a little cheese had been shipped north to New York and Pennsylvania. These pioneers started the cheese trade in Ohio that has grown to be a leading interest and specialty in northeastern Ohio, and which influence was felt in neighboring states.

Until after 1834 the Western Reserve cheese had entire control of the Southern markets.[1] About that time the Yankee population, who settled in the Darby plains, commenced its manufacture and their cheese came into competition at several of the Southern cities, and on account of nearness to market and less expensive transportation they undersold the Western Reserve cheese. The quality of this cheese "was equal, if not superior, to the early Western Reserve cheese," but such small quantities that the price was not

[1] History of Geauga County, page 29.

materially affected. To-day home-made cheese is seldom made, the factory having so generally superseded farm cheese making, that the latter receives no attention in the consideration of the dairy interests of the state.

The old method of cheese making on the farms of individual farmers continued as the rule, until about 1848–'49, when the factory system was put in operation. "In the Western Reserve of Ohio where the making of cheese has been largely carried on for several years, a change of system has lately taken place to some extent. Certain men who are well acquainted with the manufacture of cheese, purchase the curd, unsalted, of their neighbors, and make it into that kind of cheese for which they find the readiest sale and best price. A single manufacturer sometimes uses the curd produced from the milk of several hundred cows. It is gathered every morning by men who call at the different farms for that purpose. These large establishments are called factories.[1][2] This method

[1] Albany Cultivator, 1849.

[2] Ohio Agricultural Report, 1850, page 91.

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had some effect in establishing permanent systems but they were only local in influence. Up to 1850 the manufacture of cheese and butter was pursued by almost identically the same processes that had prevailed from time immemorial, but about that time inquiry and investigation seemed suddenly to pervade the dairy interest of the communities, and from that time improvement has steadily been carried on.

About this time, 1848–'50, the first improved dairy fixtures were introduced and the first dairymen's association was formed, which was styled the Geauga County Dairymen's Association. By means of this organization investigation was set on foot, inquiry awakened, and it was no doubt the prime mover of very many of the improved fixtures which were introduced at about that time and a few years thereafter. Between this time and 1860 many improved cheese vats, heaters, curd knives, and other dairy utensils and fixtures were invented and brought out, all of them showing progress and improvement, but it was during the years 1861, 1862, and 1863 that the most radical change was effected

by the spread of the cheese factory system first inaugurated by Jesse Williams ten years before. Anson Bartlett[1] in 1862 showed the possibilities of a coöperative system of cheese manufacture, which soon made a notable change in the dairy system of the state. The method was for dairymen to send their milk to factories to be worked up on a coöperative system, at a given price per pound for making, curing, boxing, selling or forwarding to market and making the necessary dividends. The first factory of this kind in the state was built at Munson by Anson Bartlett in 1862. Bartlett had previously gone to Oneida county, New York, to study the process, and learn the management and progress, which had brought the Oneida dairies into such good repute in the best markets.

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Dairying in Ohio to-day consists of a variety of forms and processes. Some of the operators make only cheese, this being done either through the whole year or only a part of it. Others make more or less butter, but cheese is the main product. This depends upon the season and the mar-

[1] History of Geauga County, page 9.

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ket. During the summer months when butter is low in price cheese is made, while in winter when butter commands a good price the manufacture of cheese is dropped and butter making taken up. Other factories make butter mainly, perhaps a little cheese. When the factory is devoted principally to cheese making it is termed a cheese factory; if for butter making a butter factory, and if both they may be be known as creameries. The latter term is coming into use for butter factories as well, and to-day is the common name applied to any factory where the article cream is separated from milk or handled separately. At first in Ohio little attention was paid to the value of a cow. Cows were preferred which were best adapted to labor, then those which were specially fitted for feed, and more recently those best suited for the dairy. So to-day we have developed in this state a class of cattle bred in the interest of dairy industry alone. The factory system perhaps has contributed more toward the advancement of the dairy interests of the state than any other factor. When the Southern trade was cut off by

the war in 1861, the farm dairy began to decline and the factory system to grow in favor. At that time the English trade came into prominence but the English shippers would buy none but factory-made cheese. This resulted in a decline of the home-made product but acted as a permanent stimulus to the factory-made. A large and increasing trade soon grew up, so that in ten years it had increased over fifteenfold. The factory system enabled the Ohio farmers to compete for the English trade which resulted in considerably higher prices which were permanent in effect. In view of the large increase in prices for Ohio cheese obtained through the influence of factories, the fact that farmers' families by this means saved a vast amount of hard work, and in fact those farmers who patronized factories received as much net cash as they would to make their own cheese at home, influenced the introduction of the factory system over the state and the falling into disuse of the old system of making cheese at home. Butter has always been chiefly a home-made product. We have seen during the past decade the establish-

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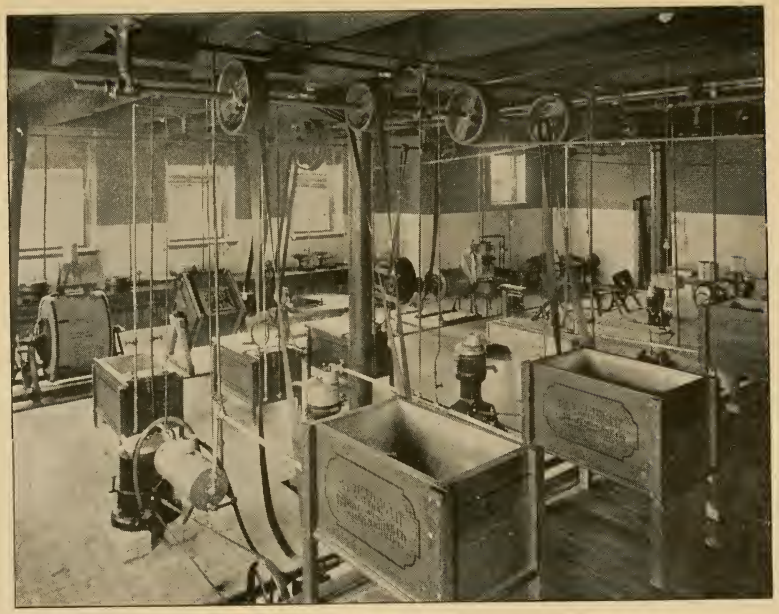
ment of a few butter factories, but the farm dairy supplies the principal amount of butter for consumption and commerce to-day.

The cheese industry received the first and earliest attention; and even when the factory system was put into operation the product manufactured in largest quantity was cheese. Milk and cream were not sent to be made into butter. That idea has but recently been put into operation. During the early sixties, when the factory system was coming prominently into use, butter making in the factories was a secondary consideration. On an average not over one pound of butter was manufactured to forty to fifty of cheese. The cream was skimmed from the cheese vats and the partially whole milk, but more properly buttermilk was made into cheese. The butter thus made was considered as so much gained, while the cheese was the chief output of the factory. From this time on, cheese in this state became factory made to such an extent that in 1886 the amount of factory-made cheese in the state was 16,500,000 pounds; while the farm-made



A Model Creamery.

cheese had decreased to but 3,000,000, and the ten years following had fallen to the minimum amount.

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Ohio has always been a dairy state, but it has only been since the factory system was established that any marvelous and permanent development has been made. The old home methods from their environments necessarily produced an article of butter and cheese, variable in quantity and quality. Besides, the number of skilful cheese makers was so small, and their field of labor so limited, that many of the farmers were prevented from engaging in the business, from their inability either to secure help or obtain the information that would be required for the proper and profitable management of dairies. Then the other house and farm duties were constantly interfering with the painstaking and watchful attention to the vat and curing room that is absolutely necessary for the making of high grade cheese. But the coöperative system stands as the one remedy to all the evils of the home system of cheese making. Since 1862 the factory system derived from necessity has been in operation. That it has

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been the successful method, is attested by the enormous manufacture of butter and cheese of superior grade and quality. In the future, we may look for something even better, for the dairy school recently established at the Ohio State University will give the state trained and skilful talent to further elevate and develop the dairy interest of the state. The energy being now devoted to this line of industry will in the next decade be harvested with abundant yields—worthy fruitage of the untiring and laborious industry of the fathers of pioneer days.

CHAPTER XIII

AGRICULTURAL EDUCATION

PAPERS, SOCIETIES, COLLEGES, EXPERIMENT STATIONS, AND INSTITUTES

With the gradual progress of agriculture in the state came the agricultural papers and periodicals. They have been among the most prominent agencies which have contributed to the industrial development of the state. Though their work has been difficult it has been grandly done. Poor patronage by the farmers, and for whose welfare they have been struggling, has handicapped them throughout their existence; and even to-day the farmers of the state do not realize their obligations for the support of the agricultural press. The first paper of its kind in the state was the *Western Tiller*, which appeared in Cincinnati in 1826. It was miscellaneously published but contained many able articles on agricultural subjects. This paper was followed by the *Farmers' Record* in 1831, which was published in Cincinnati, and continued for several years. The *Ohio Farmer*, published at Batavia, Clermont county, in 1833,

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by Hon. Samuel Medary, had a prominent place among the early newspapers of the state. The *Ohio Cultivator* was started in 1845 by M. B. Bateman, and for many years it was not only successful but one of the strongest advocates of improved conditions for agriculture. Other early agricultural papers published in this state were the *Western Farmer and Gardener*, *Western Horticultural Review*, and the *Ohio Farmer*, under a new management, published at Cleveland. This last agricultural paper connects the pioneer days with the present, and during all its existence it has stood a friend of the farmer, and foremost in the advancement of the agriculture of the state. Other agricultural papers published in the state are the *Farm and Fireside*, *Farmer's Home*, *Farm News*, *American Grange Bulletin*, *The Agricultural Student Magazine*, *Land and Living*, and *Breeder and Farmer*.

FAIRS

While all of these have been strong factors in the improvement of the soil and the crops and the livestock, they have been as

valuable in bringing culture to the farm home. On February 22, 1819, the first agricultural society in Ohio was organized, and called the Agricultural and Manufacturing Society of Washington County, Ohio, and Wood County, Virginia. A county fair was held in Marietta in 1826. In those days the court-house served for floral hall, and the street and vacant lots adjacent were used to display the stock. The Cincinnati society for the promotion of agriculture, manufactures, and domestic science, was organized in Cincinnati early in 1819, with General William Henry Harrison as president. A little later the society was reorganized under the name of the Hamilton County Agricultural Society, with General Harrison as president. At the first fair held by this society, early in the twenties, no cash premiums exceeding five dollars were offered, while diplomas and certificates were the general inducement for the exhibition of stock. The Hamilton County Agricultural Society was the first distinct society of its kind in the state. Since its reorganization in 1820 it has held fairs more or less regularly ever since. During

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the legislative session of 1832–'33 an act was passed for the encouragement of agriculture, through the organization of county agricultural societies. Many societies were organized in conformity with this act, but we cannot find any record of the exact number; however, nearly all the societies that had been organized held fairs for some years, but the want of public spirit and public sentiment failed to sustain them, and they were gradually discontinued, until the new act respecting their organization was passed in 1846. This was an important measure for the encouragement of agriculture, which provided for a state board of agriculture, and made it the duty of the board "to report annually to the legislature a detailed account of their proceedings, with a statement of the condition and needs of the agriculture of the state. It was also made the duty of the board to hold an agricultural convention annually in Columbus, at which all the counties of the state were to be represented. This act, and the one of the next year, provided for a permanent agricultural fund and gave a great stimulus to the formation of agricultural societies.

Since that time scarcely a county in the state has been without such an organization."[1] *Agricultural Education*

In 1846 the board met and organized by electing Allen Trimble, president; N. L. Sullivant, treasurer; and Samuel Medary, secretary. By the organization of this board the spirit of improvement revived in a number of the counties where societies had previously been formed, and much benefit resulted at once to the farming interests. The Ohio state board of agriculture held the first state fair in Cincinnati on the 11th, 12th, and 13th days of September, 1850. At this fair premiums were awarded to Shorthorns, Herefords, Devons, and Ayrshires; to crosses between improved and native cattle; working oxen and steers; fat and grass fed cattle, and milch cows; also to sheep classed under wool and fat sheep. No breed classifications were made or premiums awarded to swine. The same is true with horses. Besides the above there were awards on poultry, plows, various farm implements, and manufactured wares. The second state fair was held

[1] Howe's History of Ohio, Vol. I, page 107.

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near Franklinton, one mile west of Columbus, on the 24th, 25th, and 26th of September, 1851. At this fair were displayed numerous varieties of stock, grain, implements, machines, raw materials, manufactures, sculpture, paintings, and other fine arts, as well as specimens in almost every branch of human industry at that time, illustrative alike of the skill, taste, and ingenuity of the people of Ohio. Until 1874 the Ohio state fair was a movable fair, having been five years at Dayton, two years at Cincinnati, Toledo, Springfield, and Mansfield, one year each at Franklinton, Newark, Zanesville, and Sandusky. How much good it, in common with the county fairs, has done in contributing to the vigorous growth of the state and our material prosperity, can never be estimated. But the influence of the agricultural fair idea has been quietly and silently made, and today we are bequeathed the rich legacy in the form of awakened thought of a better husbandry. The impulse given us by the fairs has resulted in better and more thorough cultivation of the soil, superior grades of all agricultural and horticultural

products, the introduction of improved implements and machinery, and the application of scientific principles in all the operations of the farm and garden.

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AGRICULTURAL EDUCATION

Scarcely any subject in Ohio has excited more interest than that of agricultural education to the leading agriculturists. When the Board of Agriculture was established, every one was aware that much might be accomplished by improved implements and machines, and better herds of livestock and superior farm products, yet they believed that in order to obtain the best possible results from the soil, by means of these, an appropriate education was indispensable. As early as 1848 many leading farmers conceived that one of the most important subjects before them and which should receive their most earnest attention and individual coöperation was the establishment of an agricultural college. The two strongest reasons,[1] perhaps, in their minds were that the acquirement of such an education would "enable the student to till the

[1] Ohio Agricultural Report, 1870, page 233.

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soil in such an intelligent manner as to receive the greatest possible results with the least expenditure of physical labor." This idea was undoubtedly the leading as well as the ostensible motive for the establishment of the college; but there was an equally powerful one "derived from the social status of the farmer as compared with the professional or commercial man." And while the prime objects were to obtain direct benefits from the soil, the elevation of agriculture to an equal rank with the learned professions, in the estimation of society was always kept prominent in view. What conceptions these pioneers in agricultural education had we do not know, but the spirit of such an institution was fully alive at the time of organization of the first state board of agriculture. President Trimble in his address at the first annual meeting, in December, 1846, without doubt had an agricultural college in his mind when he said "General intelligence is after all not only the best security to our institutions, but the great lever which must move our people in their advancement in agricultural improvement. Ohio has all the elements of a

great and successful agricultural community. Her resources have been pronounced to be, by intelligent men at home and abroad, practically unlimited. As the virgin soil yields its power before the exhausting process and too often careless tillage, these resources must be to some extent diminished, unless an intelligent and improved mode of cultivation gradually supplies the place of that which suited well and still answers when the soil possesses its original fertility. To increase and develop the physical resources of the country is wisdom; and not only the representatives of the people in their legislative assemblies, but all good people should unite in their effort to accomplish a purpose upon which depends in so high a degree the character and credit of the state, and the prosperity and happiness of the people."[1] In his annual address two years later he said, "I cannot close this report without calling the attention of the General Assembly and our farming population to the importance and necessity, if we would succeed in our undertaking to elevate agriculture among

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[1] Ohio Agricultural Report, 1846, page 571.

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us to its true dignity and importance, of providing some efficient means for preparing our young men, at least, for adopting a more improved and perfect system of culture." Mr. Trimble's idea was to introduce into the academies and colleges, departments devoted exclusively to such branches of study as were most intimately connected with the cultivation of the soil, and at the same time to the practical application of the principles taught, by the cultivation of a sufficient amount of ground to impress those principles upon the minds of the pupils. He closed his address with the following words: "If it be objected to the plan suggested that if adopted it would injure the character and prospects of the literary institutions, then without waiting for the lead of New York, whose governor has wisely recommended to the legislature of that state the establishment of an agricultural college, and also one for the improvement of the mechanic arts, let us at once, either with the aid of the state or by individual efforts, establish and endow an agricultural college in Ohio, at which our young men may acquire not only a literary

and scientific, but a thoroughly practical, education." This suggestion was partially realized in 1844, when the first American agricultural college was established at Oberlin, by the arrangement of lectures in winter courses upon branches of science most intimately related to agriculture, as geology, chemistry, botany, comparative anatomy, physiology, and mechanics. The instructors were Dr. N. S. Townshend, James H. Fairchild, James Dascomb, and John S. Newberry, who lectured for three winters in succession, twice in Oberlin and once in Cleveland. An attempt was made to interest the legislature in the matter, but this failed and the department was closed. A second attempt to establish the teaching of agriculture in the state was effected in 1856, when an agricultural department was established at Farmer's College, College Hill, Ohio. Previous to this time, a "fund was raised by the sale of shares, a suitable farm was purchased, commodious buildings were erected and a large attendance of students secured."[1] While it is true that something

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[1] Howe's History of Ohio, Vol. I, page 108. *Ohio Cultivator*, 1856.

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was done by this college for a few years in teaching some of the sciences relating to agriculture, it was only very slight, and no technical agriculture was ever taught.

In 1862 Congress passed an act providing a "grant of 50,000 acres of land, or land scrip, to each state and territory for each of its senators and representatives in Congress and entitled it under the census of 1860, for the endowment and support of at least one college, where the leading object should be, without excluding other scientific and classical studies and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislature of the state might respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." The state of Ohio became entitled under this act to 629,920 acres. The Ohio State Board of Agriculture and many of the leading citizens of the state promptly sought to secure for the state of Ohio the benefits of the donation. In July, 1864, through the efforts of Columbus

Delano the act providing for the acceptance of the land scrip passed. It was not until 1870, however, that a law was passed to establish such a college and 1873 before it was ready for students. *Agricultural Education*

In 1890 Senator Morrill introduced and secured the passage of the act whereby an annual appropriation out of the proceeds of the public lands was made to each state for the further endowment of the agricultural colleges, made possible by the act of 1862. In 1870 the legislature passed a law for the establishment of an agricultural college, a board of trustees was appointed, a farm purchased, buildings erected and a faculty chosen. The new college was located at Columbus, Ohio, and was named the Ohio Agricultural and Mechanical College. In May, 1878, the General Assembly changed the name to Ohio State University, "probably thinking that the new name better expressed the character of the institution having so many departments." Since 1892 the tide has strongly turned in favor of agricultural education and a wonderful development has resulted. The College of Agriculture and Domestic Sci-

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ence of the Ohio State University has increased in enrollment from thirty-one to one hundred and sixty-one students in the last six years of its existence. Townshend Hall, a memorial to the public services and work of Dr. N. S. Townshend in advancing the cause of agricultural education, was dedicated January 12, 1898, for the use of agricultural education in the state. It was completed at a cost of $115,000 and is the finest building devoted to agricultural instruction in the world.

Agricultural education is a new idea but in full harmony with the fundamental principles of civilization and the elevation of the laboring class. The nations of antiquity built their civilization upon the degradation of labor, but we are building ours upon its exaltation. The farmers of Ohio can congratulate themselves upon the abundant and generous opportunity for the education of their children. In the training in agriculture at the Ohio State University the student "studies the soil, is taught to analyze the soil; studies its physical properties, finds the number and size of the grains in the soil. He finds from this study that

Townshend Agricultural Hall.

the exterior surfaces of the minute particles in a cubic foot of soil may equal three acres, and that soils differ largely in this particular, and the power of crop production depends in a measure upon this fact. He finds for himself that an important difference between the soil and the rock is the fact that the rock is solid and that one half the space in the soil may be unoccupied by soil particles. The student is taught the use of fertilizers and how to calculate their value. Is taught the manner and methods of drainage and irrigation, and of tillage, and of the effect and use of various farm implements upon such processes. The history, use, and culture, climate and soil, adaptation, harvesting and marketing various varieties of farm crops, are carefully studied. Kinds, care, and management of livestock are taught. The student is taught the characteristics that each class of animals should possess for special purposes; and by means of score cards the students are taught to judge the various classes of livestock. The student is taught the principles of breeding and mating animals, and is taught to understand and properly inter-

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pret pedigrees. He is taught the principles of feeding and how to calculate feeding rations which will bring the best results with the foods at hand and for the purpose used. Butter and cheese making and testing, and pasteurizing of milk are most thoroughly taught with ample facilities and expert instructors. Six thousand feet of floor space are devoted to the machinery and apparatus for this purpose in Townshend Hall. No handsomer suite of rooms can be found anywhere in America for this purpose than are found in this building. Fruit growing and vegetable raising and greenhouse work are thoroughly taught. In addition to the large gardens, lettuce, radishes, and tomatoes, and other vegetables are raised by sub-irrigation, under glass. Grafting, budding, cross-fertilizing, trimming, and other technical work of the horticulturist, the student is taught to do. Both forestry and floriculture are given special study. Diseases of animals, diseases of plants, insect enemies and insect friends receive proper attention; and methods of treating diseases and combating insect enemies by spraying and otherwise,

are amply taught. The skill which students acquire in the forge shop and in the carpenter shop, working but six hours per week for ten weeks, is truly remarkable."

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The above gives a meagre idea of the work now being done by this institution in the way of educating the boys and girls for life on the farm.

EXPERIMENT STATION

In June, 1882, a bill was passed by the general assembly of Ohio for the establishment of an Ohio Agricultural Experiment Station, "for the benefit of the interests of practical and scientific agriculture, and for the development of the vast agricultural resources of the state," through the efforts of Col. J. H. Brigham, then a member of the general assembly, in response to the demand made by the intelligent farmers of the state for such enactment. A few days after the bill was passed Governor Charles Foster, in accordance with its provisions, appointed W. I. Chamberlain, Nicholas Ohmer, and Emmet Mix, the three members of the board of control. These members of the board of control were called

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together April 25th, and effected an organization by the election of the proper officers, and the appointment of Professor Lazenby as director. The trustees of the Ohio State University having offered the free use of as much land as might be needed for field experiments, the use of laboratories, apparatus, collections, implements, etc., necessary to carry on the appropriate work, the station was located at the university. Afterward the board selected the remaining members for the station staff which, completed, was as follows: Professor W. R. Lazenby, director; Professor N. W. Lord, chemist; Professor W. S. Devol, botanist; and Professor W. B. Alwood, superintendent of field experiments.

The first annual report was made in 1882, which gave a full account of the work that was begun and completed in that year. The director also stated that the station was "prepared to test varieties; to analyze and test fertilizers and manures, soils, water, milks, and cattle food; to examine seeds that are suspected of being unsound or adulterated; to identify and name weeds and other plants; to investigate and de-

scribe when known the habits of injurious and beneficial insects, and other work of a similar character that properly comes within its province."

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The appropriations made by the state in the early history of the station were limited, and the work of the station was for a time miserably restricted. But the liberal appropriations of Congress, which became available in 1888, put new life in the work, and a period of rapid progress resulted. During the year 1892 the station was moved to Wayne county, Ohio, where a large farm was purchased, more of the typical type of farm lands in Ohio than that afforded by the lands of the Ohio State University. Since its removal to Wooster, Ohio, the following buildings have been erected for the use of the station: administration building, three barns and a power house, tool house, and a dairy house with equipments. The station is now pleasantly located and equipped, and though at first handicapped on account of poor equipment and scarcity of workers, it is now doing a grade of experimental work of the highest and most skillful type. It is demonstrating for Ohio that

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a rational system of agriculture is possible, and that it has its foundation in science, illustrating that "success in farming depends more upon skill and intelligence than upon muscle and ignorance."

FARMERS' INSTITUTES

Another factor that has contributed immensely to the education of the farmers of Ohio has been the development of the institute idea, as suggested and formulated by Dr. W. I. Chamberlain, in 1880, while secretary of the State Board of Agriculture. Secretary Chamberlain's plan, published in the annual agricultural report for 1880, gave a detailed plan of this institute work. The only difference between the plan first suggested and our present system is "that at the first Ohio institutes, all local expenses were paid by the local organization which invited the institute to be held in any given county. The original plan was that the board advertise its willingness to send two competent, practical speakers, scientists or specialists, for two days and one evening to any county whose citizens would guarantee five things: first, a good, capacious

hall, well lighted and warmed; second, good music; third, cordial help of local talent in presenting papers and joining in discussions; fourth, local advertising and booming enough to call out a good attendance; fifth, the payment of all local expenses including the hotel bills of foreign or state speakers."

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This plan was put into operation after the board had appropriated $1,000 of the surplus state fair earnings, for the expenses of the winter's institutes. Messrs. T. B. Terry, of Hudson, Ohio, and John Gould, of Aurora Station, were selected by the secretary as the principal speakers. Besides these two men several professors of the Ohio State University assisted in the work. Between forty and fifty institutes were held that winter and so successful were these county institutes (the first county institute ever held in the United States), that the legislature promptly added about $5,000 per year to the appropriation formerly made to the board. In 1890 the legislature made another appropriation, this time in the form of a tax, per capita, for each county, amounting to about $14,000 a year.

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All the expenses, both local and state, are paid out of this sum.

This plan of education has been quite popular and successful. While the expense is but a minimum the good that has resulted is enormous. Not only agriculture but every industry has been benefited, and not only the farmers have received instruction, entertainment, and culture but all people, irrespective of class, trade, or profession.

All these elements and factors and conditions have helped to ameliorate the condition of the people of the state, in a material way as well as having better taught them for what and how to live. As we look back over the century just closing we see three characters that have stood out as mighty exponents in the succession of time, for the advancement of agriculture and the amelioration of its people,—Trimble, Klippart, Townshend. The halo of their greatness encircles their immortal brows to-day, and our agricultural people raise their voices in glorious praise. No plumes were attached to their hats, no swords hung from their belts, but with minds bent on

material and individual progress and with souls kindled with the fire of love, that their people might be bettered, that their profession might be enlarged and advanced, and that their sons and daughters might enjoy education in the fullest extent, they directed their efforts and their lives. The first died without seeing an agricultural college realized, the fond hope of his life; and the last, the star of its existence, tried the experiment himself and saw it successful; and then laid down under the cares of his years, and quietly went to sleep knowing that a better day for agriculture had come.

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With the agricultural tastes of these men, life was not like the frivolous mountain stream dashing its dizzy head against rock and root and leaving but a fleck of foam to mark its track, but with them life was something solemn—a deep, broad river, bearing on its mighty bosom an argosy of golden treasures, the hearts that their efforts have lightened and the lives that their good deeds have blessed.

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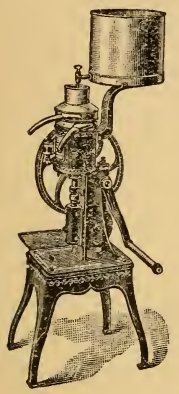

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