

Agricultural Regions of North America. Part IV--The Corn Belt

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AGRICULTURAL REGIONS OF NORTH AMERICA

PART IV—THE CORN BELT

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THIS region includes that portion of the east central United States in which corn (maize) is produced in great quantities and is more important than any other crop. It comprises western Ohio, central and northern Indiana and Illinois, Iowa, except the northeastern corner, the southwestern portion of Minnesota, southeastern South Dakota, eastern and southern Nebraska, the northern tier of counties of Kansas, except the westernmost county, and most of Missouri north of the Missouri River (Fig. 79).¹ The region is about 900 miles long by 150 to 300 miles wide, and contains an area of 150 million acres, or 8 per cent of the land area of the United States. In 1919 it produced on 90 million acres crops valued at three and a quarter billion dollars, which was nearly 25 per cent of the total for the nation.² The 850,000 farms in the Corn Belt, only 13 per cent of the total number in the United States, were valued in 1919 at 35 per cent of the value of all farms in the nation. In Iowa the average value was nearly \$50,000 per farm.

In all counties of the region, except those along the semi-arid western margin, the average annual production of corn per square mile exceeds 1,000 bushels,

and in a few counties reaches 10,000 bushels and more. The yearly average production along the southern margin is 3,000 bushels per square mile and this is generally true also along the northern and eastern margins (Fig. 109). On the average, the Corn Belt produces 5,000 bushels of corn per square mile, and, in addition, about 2,500 bushels of oats, over 1,000 bushels of wheat, 150 tons of hay and fodder, and provides also about 140 acres of pasture. The value of the crops per square mile, \$15,000 in the year 1919, is over 60 per cent greater than in any other agricultural region.

The Corn Belt produces more feed for livestock and more meat for man than any other area of equal size in the world. It may not inappropriately be called the heart of American agriculture. The grain crop of the Corn Belt, over 60 per cent corn, exceeds 2,600 million bushels, which is nearly half that of the entire United States. Over half of the corn is fed to hogs (Fig. 110). Into the Corn Belt flow stocker and feeder cattle from the West for fattening, to supplement its home-grown stock, and out of it flow more than half of the beef and pork consumed in the eastern, northern, and to a lesser extent, in the southeastern sections of the country (Figs. 111 and 112). It supplies, moreover, most of the large exports of pork and lard; and, in addition, ships corn and hay in vast quantities to the eastern and southern markets (Fig. 113).

Although the Corn Belt includes only 8 per cent of the land area of the United States, it produced over 50 per cent of the nation's corn and oats crop in 1919, 25 per cent of the nation's wheat and hay, and possessed over 20 per cent of the cattle, 25 per cent of the horses, 28

¹ ECONOMIC GEOGRAPHY, July, 1927, issue, "Agricultural Regions of North America," Part III, by the author; or consult colored map of agricultural regions, frontispiece in October, 1926, issue.

² This article was written before the returns from the 1924 census were available for the region. These latest census returns will alter some of the figures given, particularly those of value, and make certain of the statements appear less appropriate. But the agricultural situation that has developed since the World War is abnormal, and the statements made in this article will likely be more applicable a decade hence than statements based on the 1925 census.

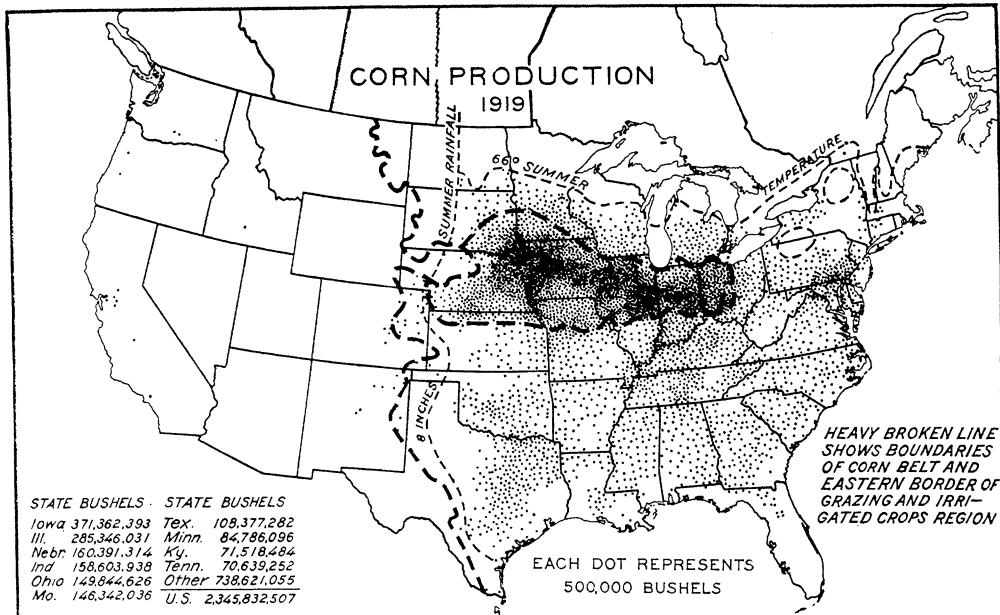


FIGURE 109.—Corn is the great American cereal, constituting about 60 per cent of the tonnage of all cereals grown in the United States, and over 50 per cent of the value. More than half of this crop is produced in the Corn Belt, but corn is leading crop in value also in the Corn and Winter Wheat Belt, and is the all-important cereal in the Cotton Belt. Corn is a very productive crop, yielding, in general, about twice as many pounds of grain per acre as wheat, oats, barley, or rye. The climate and soil of the Corn Belt are peculiarly suited to it. Probably no other area in the world of equal extent produces so much feed per square mile as the Corn Belt. (U. S. Dept. of Agr. Yearbook, 1921.)

per cent of the poultry, and 43 per cent of the hogs of the nation. It contained, on January 1, 1920, about 21,500,000 animal units,³ as compared with 12,263,000 human population. This is 94 animal units per square mile, which is equivalent to a horse or steer for every 6.8 acres. There were on the average 23 animal units per farm, January 1, 1919, which is more than twice as many as in the Corn and Winter Wheat Belt and three times as many as in the Cotton Belt.

About 84 per cent of the crop land in 1919 produced feed for farm animals and 16 per cent food consumed directly by man, wheat being the most important food crop (Fig. 114). Only one-fifth of 1 per cent of the crop acreage was used for other than feed and food crops. The corn crop of the Corn Belt, about

³An animal unit is a mature horse, cow or steer, 5 hogs, 7 sheep, or 100 poultry. Colts and calves are counted as half a unit, young pigs as one-tenth, and lambs as one-fourteenth.

double in size the wheat crop of the entire United States, affords a vast reserve of food in time of need. If used directly for human consumption it would provide fifteen bushels for every person in the United States at present, which is about thrice the present per capita consumption of wheat. Were the American people content to live on grain, supplemented by green vegetables and a little pork, with poultry and eggs now and then, as the people of China are compelled to live, the corn crop of the Corn Belt would be almost sufficient to feed the present population of the United States.

THE PHYSICAL CONDITIONS

Although the Corn Belt occupies less than one-half of 1 per cent of the land surface of the earth and although only about one-fourth of the total land area of the Corn Belt is in corn, the region produces one-third of the corn crop of the world, and nearly two-thirds of the

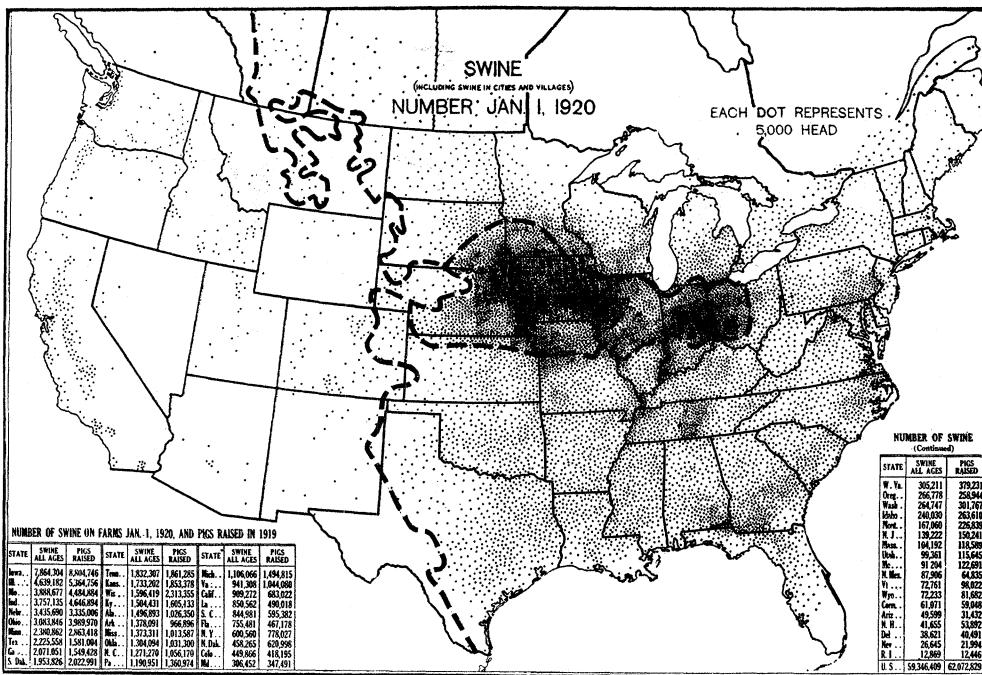


FIGURE 110.—About two-fifths of the hogs and pigs in the United States and Canada are in the Corn Belt, which is shown in outline on the map, nearly one-fifth are in the Cotton Belt, and nearly another fifth in the Corn and Winter Wheat Region. In 1919 there were, on the average, 106 swine per square mile in the Corn Belt, 33 in the Corn and Winter Wheat Region, 27 in the Cotton Belt, 17 in the Hay and Dairying Region, and about 4 per square mile in the remainder of the United States. Just as the cool Hay and Dairying Region finds the best outlet for its crops in feeding dairy cows, so the warm, rich Corn Belt finds the growing of corn and feeding of beef cattle and hogs its most profitable system of farming. The small number of swine in the western regions (west of the dashed line) should be noted. Canada statistics are for June 1, 1921.

corn crop of the United States. Corn is a warm climate crop, and it is owing mostly to the rare combination of humid and almost tropical summer weather, very fertile soils, and the level to rolling land surface, which can nearly all be cultivated, that the Corn Belt produces so large a proportion of the world's crop (Fig. 115).

Boundaries

The western and northern boundaries of the Corn Belt are climatic, whereas the eastern and southern boundaries are owing to topography and soil. In general, the boundaries have been drawn where the production of corn falls below 3,000 bushels per square mile, but along the western margin, where agricultural development is incomplete, possibilities of production have been taken

into account, and the boundary has been drawn where the production of corn at present is much less. This western boundary follows, with only slight deviations, the line of 20 inches annual rainfall, the density of corn production diminishing rapidly beyond this line (Fig. 3).⁴ The northern boundary follows more or less closely the line of 70 degrees mean summer temperature east of the Missouri and 69 degrees west of that river. To the north of this boundary hay and forage become more important than corn, and dairying replaces the production of beef cattle and hogs as the principal livestock enterprise. The eastern boundary follows the line where the more or less level

⁴ ECONOMIC GEOGRAPHY, October, 1926, issue; "Agricultural Regions of North America," Part I, by the author.

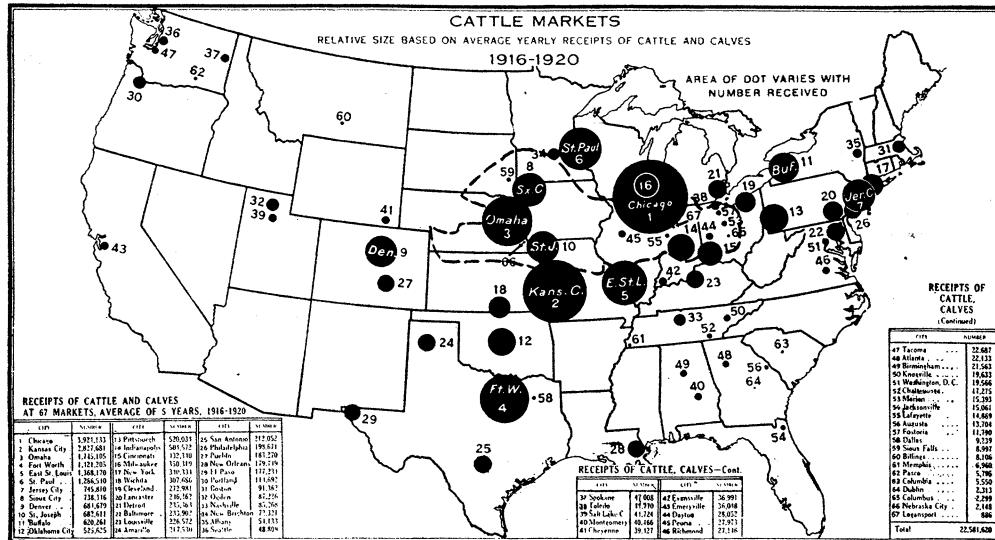


FIGURE 111.—Over 55 per cent of the receipts of cattle and calves at the 67 public stockyards in the United States during the years 1916 and 1920 were at points in the Corn Belt. The annual receipts at Chicago have been greater than any other market since the founding of the present yards in 1865. Kansas City ranks second and Omaha third. Most of the cattle received at these yards are sold to packers for slaughter, but large numbers are also sold to farmers for stockers and feeders. (U. S. Dept. of Agr. Yearbook, 1921.)

limestone lands of western Ohio give place to the hilly shale and sandstone lands of the eastern portion of that state. On these hilly and less fertile lands hay and pasture, used mostly for cattle and sheep, replace corn and hogs as the domi-

nant system of farming. The southern boundary across Ohio, Indiana, and Illinois corresponds almost exactly with the southern limit of the Wisconsin glaciation; and across Missouri follows in a general way the northern limit of

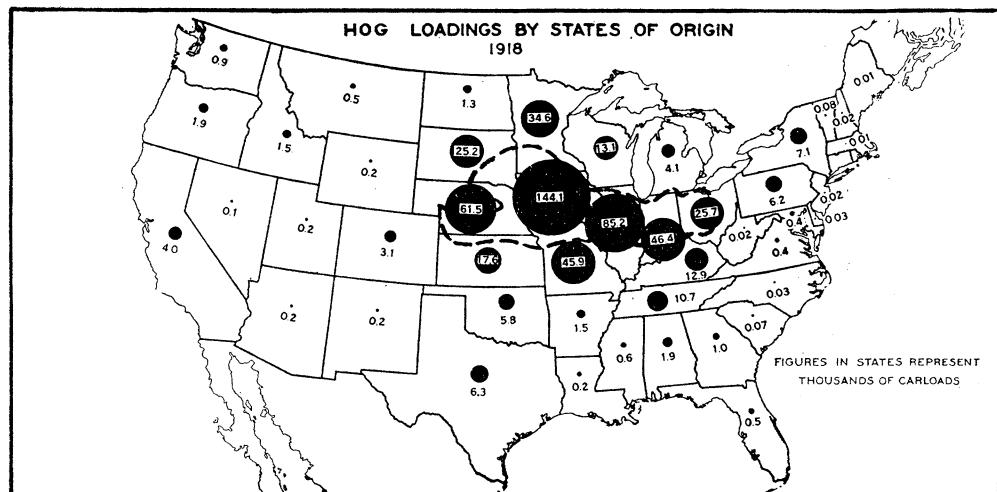


FIGURE 112.—In 1918 Iowa led in number of hogs loaded, with 144,105 cars; Illinois was second with 85,164 cars; Nebraska third with 61,489 cars; Indiana fourth with 46,362 cars, and Missouri fifth with 45,860 cars. These five Corn Belt states loaded about 70 per cent of the total loadings in the United States. Iowa loaded more than 25 per cent of all the hogs shipped during that year, whereas Missouri, which was fifth, loaded 8 per cent of the total. (U. S. Dept. of Agr. Yearbook, 1922.)

the hilly Ozark plateau. The unglaciated lands of southern Indiana and Illinois and the Ozark mountain lands are much less productive, particularly of corn, than the smoother, younger, richer lands to the north. In west-central Missouri and eastern Kansas the boundary is less definite and migrates back and forth with the relative price of

months exceeds 58 degrees in all parts of the Corn Belt, and is generally 5 degrees warmer than this. These high night temperatures, in July seldom falling below 65 degrees, are important in the production of a full crop. The frostless season ranges in average length from 140 days in the northwestern corner of the Belt to 180 days along the southern

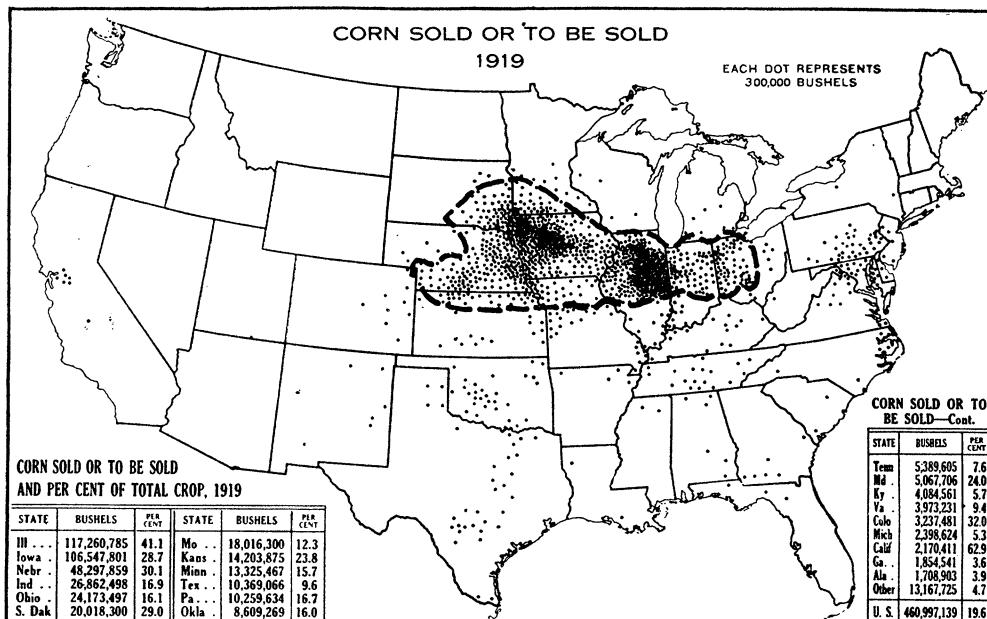


FIGURE 113.—In the Corn Belt most of the corn is fed to hogs, cattle, and horses on the same farm that it is grown; but a considerable quantity, amounting to 41 per cent of the crop in Illinois in 1919, and about 30 per cent in Iowa, South Dakota, and Nebraska, is sold to nearby farmers, is shipped to consumers in the South and East, is exported largely through Chicago and Atlantic ports, or is made into starch and glucose. (U. S. Dept. of Agr. Yearbook, 1921.)

wheat and corn. Across northern Kansas the southern boundary of the Corn Belt is very stable, and appears to be determined largely by the hot winds of July and August, which frequently dry out the corn plants and greatly reduce the yield.

Climate

Although the southern boundary is not climatic, except in Kansas, it is interesting to note that the warm season and summer temperatures are about six degrees higher than along the northern border. The mean lowest night temperature during the three summer

border (Fig. 4).⁵ On the other hand, the winter temperatures are rather low, mostly below freezing, and the frozen condition of the soil retards leaching by winter rains and snows, which has been so important a factor in depleting the fertility of the soils to the south.

The average annual precipitation in the Corn Belt varies from about 18 inches along the arid western margin to 40 inches in Ohio (Fig. 3).⁶ However, the largest amount of rainfall during the

⁵ ECONOMIC GEOGRAPHY, October, 1926, issue; "Agricultural Regions of North America," Part I, by the author.

⁶ *Ibid.*

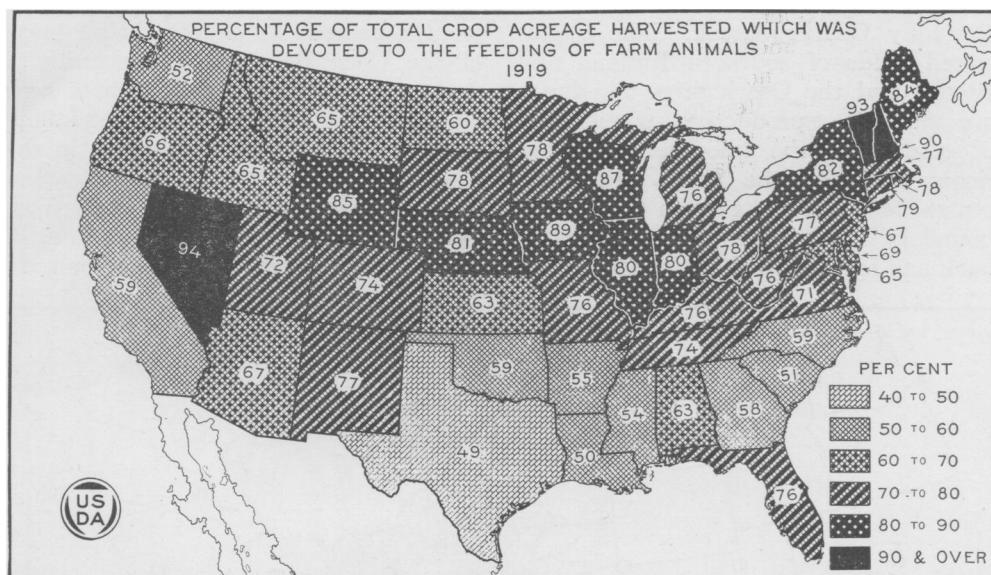


FIGURE 114.—About seven-tenths of the land in harvested crops in 1919 was used to produce forage for livestock. In the Corn Belt the proportion was over 80 per cent, and reached 89 per cent in Iowa. The total quantity of forage thus produced was sufficient to feed all livestock only a little more than half the year. Pasture supplies the remainder of the forage needed by our farm animals. (U. S. Dept. of Agr. Yearbook, 1923.)

warm season (April to September inclusive), about 24 inches, occurs in Missouri, southern Iowa, eastern Nebraska and Kansas, which are near the center of the Corn Belt. The smallest warm season rainfall, 15 inches, is along the western margin. This heavy rainfall during the warm season is of the greatest importance in the production of the corn crop (Fig. 116). Very important also has been the light rainfall of the winter season—less than one inch a month in the northwestern portion and under 3 inches a month in the south-

eastern portion of the Corn Belt—for it results in a lesser leaching of the soil than would occur in a region of heavy winter rains. This unusual combination of hot, humid summers, with moderately cold, dry winters constitutes the basic condition that accounts for the dominance of corn in this region.

The Surface of the Land

The large crop production in the Corn Belt is owing in part also to the fact that the land is practically all level to rolling (Fig. 5).⁷ In general, only the



FIGURE 115.—A cornfield in the Corn Belt. Nothing is more beautiful in the eyes of a Corn Belt farmer than a well-cultivated cornfield in late summer. This picture, taken in Iowa, shows one of those large level fields so characteristic of the Central and Western Corn Belt. (Photo from O. C. Stine, U. S. Dept. of Agr.)

⁷ ECONOMIC GEOGRAPHY, October, 1926, issue; "Agricultural Regions of North America," Part I, by the author.

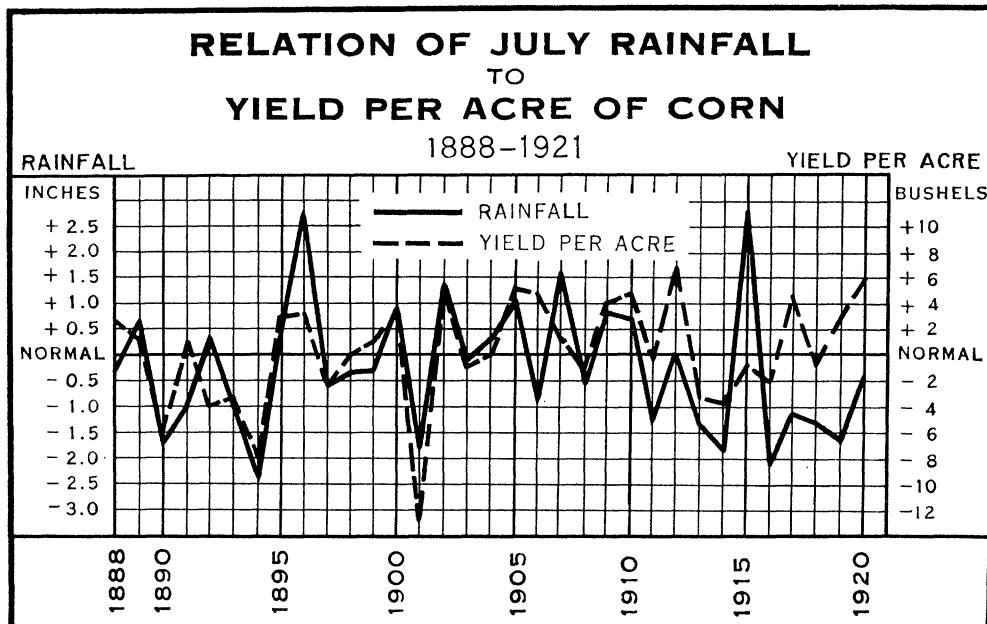


FIGURE 116.—The effect of rainfall during the month of July on the average acre yield of corn in Indiana, Illinois, Iowa and Missouri, of each year from 1888 to 1921, inclusive, is very marked. The divergence between the lines in recent years, it will be noted, is owing mostly to increasing yields per acre. (U. S. Dept. of Agr. Yearbook, 1921.)

narrow banks of the streams, or of their flood plains, are too steep for cultivation, certainly not over 10 per cent of the land in all. Very few regions in the world of so large extent have practically all their land topographically suitable for crop production. Much of the non-arable land of the Corn Belt is located along the sides of the V-shaped valleys of the streams that are cutting back into the upland in northern Missouri and southern Iowa.

Soils

All of the Corn Belt has been glaciated, except the plains of central and western Nebraska and northern Kansas. Consequently, the soils are young and have not had time to be leached of their fertility. Most of the soils are silt loams or clay loams in texture, derived largely from limestone drift (Fig. 6).⁸ Silt loam is the most desirable soil texture

for general farming, and soils derived from limestone are nearly always rich. Moreover, upon most of the surface of the central portion of the Corn Belt there has been deposited by the wind a mantle of very fertile silty soil, called loess by geologists, which varies from a few inches to many feet in thickness. The glacial action in the eastern and northern Corn Belt and this deposit of loess in much of the central and western portion has smoothed over many of the minor inequalities of the surface as well as contributed greatly to the fertility of the land.

The dark brown to black prairie soils which comprise about three-fourths of the Corn Belt are, in general, more fertile than the lighter colored forest soils in the eastern portion, and are specially adapted to corn, being warm, easily tilled and rich in humus. The forest soils of western Ohio and northern and central Indiana are, in general, very fertile soils, however; and in several counties in each of these states the pro-

⁸ ECONOMIC GEOGRAPHY, October, 1926, issue; "Agricultural Regions of North America," Part I, by the author.

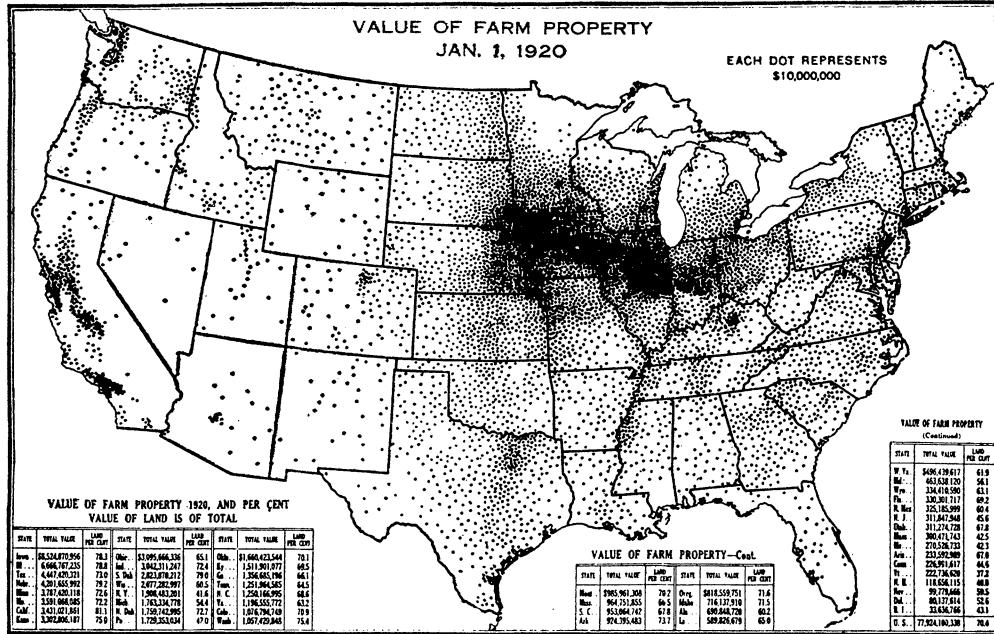


FIGURE 117.—Over one-third of the value of farm property in the United States is in the Corn Belt, and nearly two-fifths of the value of farm land. The average value of farm land per acre, January 1, 1920, was \$148 in the Corn Belt, as compared with \$40 in the Cotton Belt, \$48 in the Hay and Pasture Region, and \$21 in the Great Plains Region. Only in the South Pacific Coast Region does the value of farm property per square mile and of farm land per acre (\$114) approach the values in the Corn Belt. (U. S. Dept. of Agr. Yearbook, 1921.)

portion of the land in corn and the yield per acre is as high as in the prairie portion of the Corn Belt.

The farm land (excluding buildings) in the Corn Belt had an average value, January 1, 1920, of \$148 per acre, as compared with \$40 in the Cotton Belt, \$55 in the Corn and Winter Wheat Region to the south, and \$48 in the Hay and Pasture Region to the north (Fig. 2).⁹ Although the Corn Belt includes only 8 per cent of the land of the United States, the value of the farm land of the Corn Belt in 1919 was nearly 40 per cent of that of the entire United States (Fig. 117). It is mostly to the superior fertility of the soils of the Corn Belt and the large proportion of the land that is arable that this higher value must be attributed.

⁹ ECONOMIC GEOGRAPHY, October, 1926, issue; "Agricultural Regions of North America," Part I, by the author.

LAND UTILIZATION

About one-fourth of the Corn Belt was originally forested, the forests covering practically all of the Ohio and Indiana portion with narrow bands extending along the rivers to the westward. The central and western Corn Belt, except these woodland strips along the streams, was a vast, verdant prairie (Fig. 9).¹⁰ Today less than 8 per cent of the land area is in forest, mostly farm woodlots (Fig. 10);¹¹ and 22 per cent is in pasture, composed almost entirely of tame grasses, except along the semi-arid edge; while 60 per cent is in crops, a larger proportion than in any other region (Fig. 84).¹² Ninety per cent of the land area is in farms and 75 per cent is improved land

¹⁰ *Ibid.*

¹¹ *Ibid.*

¹² ECONOMIC GEOGRAPHY, July, 1927, issue; "Agricultural Regions of North America," Part III, by the author.

(Fig. 11).¹³ Roads, railroads, cities, and villages occupy most of the land not in farms.

The possibility of increasing the crop acreage is, therefore, not as great as in other regions. About half of the forest and woodland, or 6 million acres, is potentially arable, and two-thirds of the pasture, or about 20 million acres. This would theoretically permit an increase in crop land of 30 per cent, but that most of the tillable pasture land should ever be used constantly for crops is inconceivable, as it would greatly increase the amount of labor required for the care of the livestock, and would tend to decrease the fertility of the soil.

The Crops

Of the five major crops that are grown in the United States—corn, cotton, wheat, oats and hay, which jointly compose 87 per cent of the total crop acreage—four are extensively grown in the Corn Belt. Its system of agriculture is better balanced than that of any other large agricultural region. Corn constituted 42 per cent of the acreage and 54 per cent of the value of all crops in the Corn Belt in 1919; most of the remaining acreage is almost evenly divided between oats (18 per cent), wheat (17 per cent) and hay (16 per cent). The principal hay crops are timothy and clover, grown separately or mixed, and alfalfa. Winter Wheat is the leading small grain crop in the southern portion of the Corn Belt, and oats in the northern portion (Figs. 14¹⁴ and 118). The line separating winter wheat from oats follows in a general way that of 23 degrees average winter temperature. This division is doubtless owing also in part to the fact that in the southern Corn Belt the corn can be gotten off the ground in time to seed wheat in the fall, whereas farther north, where this cannot be done, it is necessary

to use a spring sown crop. Moisture conditions similarly separate the Corn Belt into a western portion in which alfalfa or the native wild grasses are the leading hay crops, and an eastern portion in which timothy and clover are the more important (Figs. 17 and 19).¹⁵ This dividing line, or rather transition zone, crosses the Corn Belt near the Missouri River and corresponds with an average ratio of precipitation to evaporation during the six months warm season of about 60 per cent. Probably the lesser lime content in the soils of the more humid portion of the Belt east of the Missouri River is also an important factor in causing this division of territory.

Potatoes, sweet potatoes (to a very small extent), vegetables, and fruits are grown in the Corn Belt, mostly for home use or to supply a nearby town. Jointly these crops constitute one per cent of the acreage of all crops and four per cent of the value. A little barley is grown along the northern margin of the belt (constituting 1.2 per cent of the acreage of all crops in 1919 and 0.8 per cent of the value), and a little rye on the sandy lands of northern Indiana, western Illinois, and central Nebraska. Tobacco is an important crop in four counties in Ohio.

Pasture

The acreage in pasture (36,000,000 acres) is about equal to the acreage of corn. Moreover, the pastures have a higher carrying capacity, on the average, than those of any other agricultural region. Probably nearly half the pasture consists of timothy or clover, grown in rotation with crops and used for pasture a year or two when the land is not needed for hay or other crops. The remaining half, or more, is permanent blue grass pasture, or the native grassland in the western sub-humid and semi-arid portions of the Belt. These pastures provide a large proportion of the summer feed, but the cattle are generally supplied with supplementary

¹³ ECONOMIC GEOGRAPHY, October, 1926, issue; "Agricultural Regions of North America," Part I, by the author.

¹⁴ *Ibid.*

¹⁵ *Ibid.*

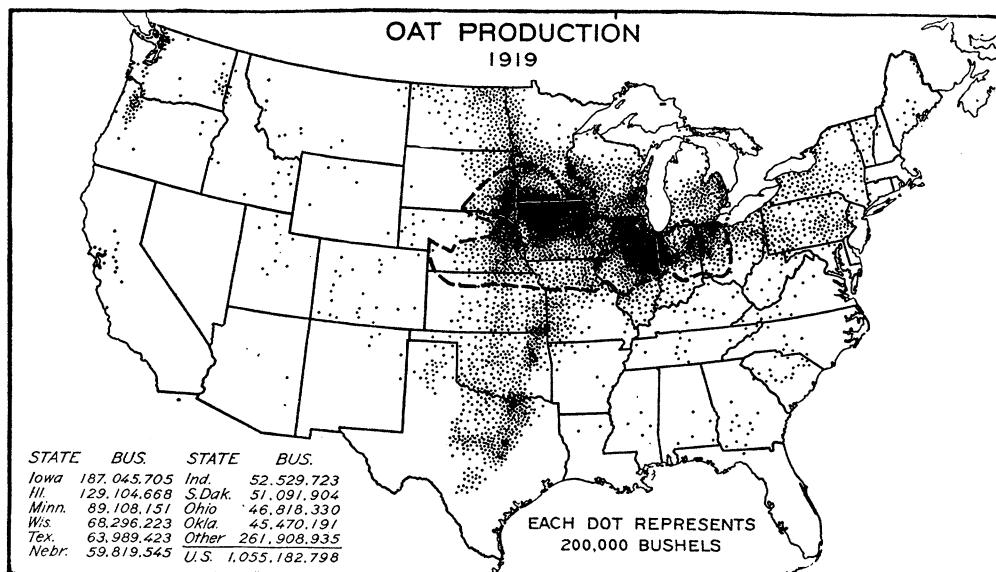


FIGURE 118.—Oats rank second to corn among the feed crops. The threshed grain is valued especially for feeding work animals. Production of oats is heaviest in the northern portion of the Corn Belt, but the crop is very important also in the Hay and Dairying Region and in eastern Kansas, Oklahoma and Texas. (U. S. Dept. of Agr. Yearbook, 1923.)

grain in late summer or early autumn, when the bluegrass pastures especially are likely to suffer from drought. Most of the woodlots are also used for pasture, but the carrying capacity is very small, ten acres of woodlots being required, probably, to supply as much sustenance as one acre of rotation pasture or good bluegrass pasture.

Livestock

If the acreage in pasture be added to the 84 per cent of the crop land used to produce feed, it appears that about 90 per cent of the agriculturally productive land of the Corn Belt is utilized to feed farm animals. The farm animals are principally horses, beef cattle, dairy cattle, hogs and poultry, constituting 22, 27, 22, 19 and 5 per cent respectively of the total animal units in the region. However, owing to the more rapid turnover, the value of the hogs produced in 1919 was about 800 million dollars, and of poultry and eggs 300 million, as compared with 270 million for beef cattle, 250 million for dairy products, and 40 million for horses and mules,

other than the value of their labor. The value of the product of the hogs, therefore, almost equalled the value of all other livestock raised and livestock products.

The farm value of all livestock and livestock products produced in 1919 amounted to about \$1,700,000,000, or roughly \$2,000 per farm. The value of the crops not used to feed livestock was about \$650,000,000 in 1919, or \$750 per farm. Nearly three-fourths of the income of the Corn Belt farmer, in other words, is derived from livestock and livestock products and one-fourth from sale of crops. Out of this gross income of about \$2,750 he had to pay the cost of production. Among these items of cost may be mentioned: labor about \$300 per farm, fertilizer \$10, taxes probably \$300, and rent, if a tenant, perhaps \$900 per farm, either in cash or kind. In the year 1919 prices were near the peak and the year was an unusually prosperous one for Corn Belt farmers.

The horses are distributed almost uniformly throughout the Corn Belt,



FIGURE 119.—Beef cattle on clover pasture in the Corn Belt. Red clover is noted as a "soil builder." Plowing under the entire crop secures the greatest possible manurial value, but as a rule it is more economical to graze the clover and plow under the residue. Most of the clover is grown mixed with timothy. The picture shows a herd of beef cattle, probably shipped in from the West, grazing in a rich Corn Belt pasture. (U. S. Dept. of Agr. Yearbook, 1923.)

because they are used solely for power (Fig. 68).¹⁶ The beef cattle are found principally in the prairie portion (Fig. 24),¹⁷ because here is the cheapest pasture. The dairy cattle are densest along the northern margin and in the eastern portion of the belt, largely because of the cooler temperature and the proximity to the cities (Fig. 23).¹⁸ The hogs are densest, in general, where the corn is most abundant and cheapest (Fig. 110). The thinner distribution within a radius of 100 miles of Chicago is owing to the higher price of corn in this section,

or breakfast food, is shipped east or south for feed, or is exported. Beyond this Chicago district the corn is concentrated into hogs instead, which, having a higher value per unit of weight, can better stand the cost of transportation. The poultry, like the hogs, are found where the price of corn, relative to the price of meat, is lowest (Fig. 93).¹⁹

SYSTEMS OF FARMING

In the Corn Belt, as in the Cotton Belt, there is only one prevalent system



FIGURE 120.—Fattening hogs on a Corn Belt farm. The production of hogs in the United States goes hand in hand with corn production. No other crop product seems to be so well suited to the growth and fattening of this farm animal. Hogs are abundant in the States almost in direct proportion to the quantity of corn produced. (U. S. Dept. of Agr. Yearbook, 1923.)

because of the low freight rates to Chicago, the great market, where the corn is made into starch, glucose, corn meal,

of farming. This system, based on corn, hogs and cattle, with a small grain grown in part as a nurse crop for timothy and clover, is one of the most satisfactory in the United States from the standpoint both of securing a relatively even distri-

¹⁶ ECONOMIC GEOGRAPHY, January, 1927, issue; "Agricultural Regions of North America," Part II, by the author.

¹⁷ ECONOMIC GEOGRAPHY, October, 1926, issue; "Agricultural Regions of North America," Part I, by the author.

¹⁸ *Ibid.*

¹⁹ ECONOMIC GEOGRAPHY, July, 1927, issue; "Agricultural Regions of North America," Part III, by the author.

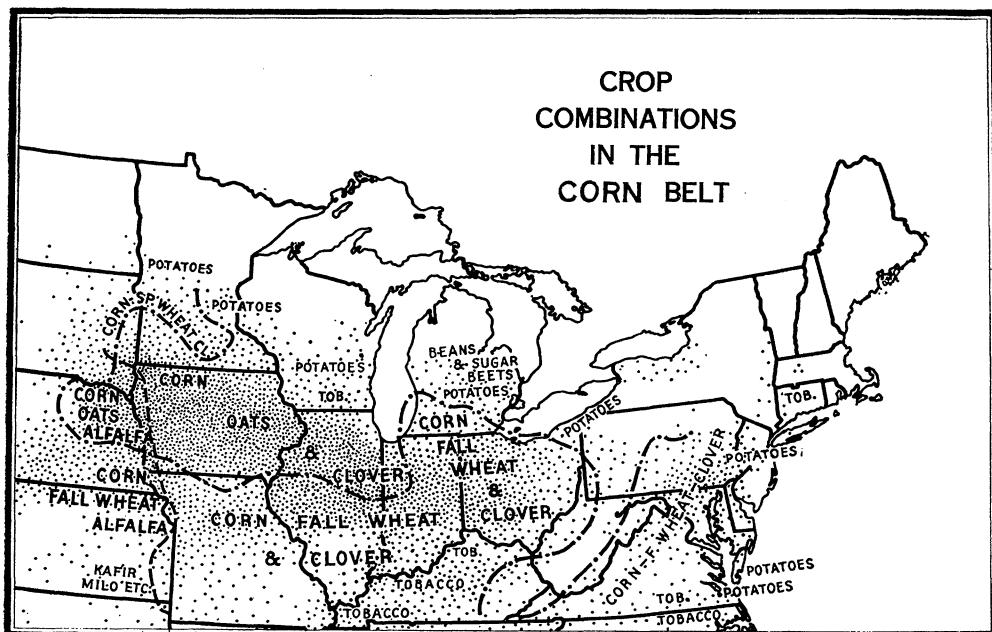


FIGURE 121.—The dots indicate corn acreage. The broken lines mark off the regions of crop combinations. Intertilled crops other than corn find their place for the most part outside of the true Corn Belt. East of the Missouri River the dominant hay crop is clover or timothy; west of that river it is mostly alfalfa. In the southern Corn Belt, and also in the northern portion east of Lake Michigan, winter wheat is a more important grain crop than oats; but in the northern Corn Belt, west of Lake Michigan, oats almost replace wheat. (U. S. Dept. of Agr. Yearbook, 1921.)

bution of labor throughout the year and of maintaining the high productivity of the land. It probably yields also a larger net income than any other major system of farming in the United States.

Rotations

The usual cropping system consists of a cultivated crop (corn), which is followed by a small grain crop (wheat or oats), in which a hay crop (timothy and clover) is usually seeded, in the eastern and central portion of the Belt (see Fig. 121). The alfalfa, which in the western portion of the Belt follows small grain, is usually seeded separately. In the southeastern portion of the Corn Belt the rotation is commonly four years in length, being corn, winter wheat, clover, timothy. The timothy grass is sometimes pastured the entire fourth year, instead of being cut for hay, and is usually pastured in the fall after being cut for hay. Frequently the timothy is

allowed to lie the fifth year for pasture and occasionally the sixth year, by which time bluegrass is likely to become well established in the field. This is true not only of the southeastern section of the Corn Belt, but also of most of the region east of the Missouri River.

In the northeastern section of the Corn Belt oats replace a part of the wheat. In the south-central portion, especially in southwestern Illinois, both corn and wheat may be grown two or more years in succession, and the hay crop, commonly timothy, becomes less important. In northern Missouri and southern Iowa, on the other hand, a more definite rotation is followed and timothy and clover have a regular place in the rotation. In the north-central Corn Belt oats largely replace wheat in the rotation, and more clover is grown. Soy beans, however, are now partially replacing oats. In the southwestern Corn Belt the rotation is likely to be corn,

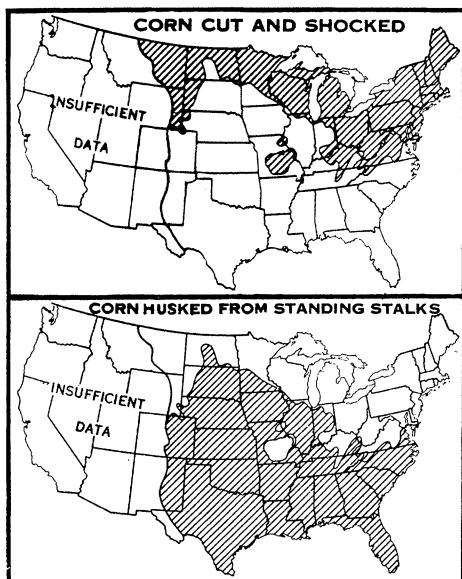


FIGURE 122.—The shaded portions of the two maps show the sections of the United States where cutting and shocking corn (above) and gathering it from standing stalks (below) are the more common practices. "Husked" is used in the figure, although in the South corn is often "jerked." It will be noted that in all except the Ohio section of the Corn Belt, husking from the standing stalk is the usual method of harvesting. But the introduction of the corn binder and the coming of the corn borer seem destined greatly to increase the acreage cut and shocked and also the acreage cut for silage. (Maps from U. S. Dept. of Agr. Yearbook, 1921.)

corn, wheat, wheat, alfalfa, which is usually allowed to grow for several years; and in the northwestern Corn Belt the common rotation is corn, corn, oats, with or without alfalfa. In the Minnesota and South Dakota portions of the Corn Belt the wild grasses are depended upon largely for hay, only a little alfalfa being grown in the South Dakota portion, and a little timothy and clover in the Minnesota portion of the Corn Belt.

In the Ohio portion of the Corn Belt the corn is nearly all cut and shocked, the fodder being fed to livestock (Figs. 122 and 123), but in the central and western portions, to save labor, the corn is mostly husked from the standing stalk or hogged down (Figs. 124 and 125). The wheat and oats are commonly harvested with a binder and threshed by a stationary steam or gas engine outfit,

but recently the small combine has rapidly come into use. The hay is cut with a mower, raked with a horse rake, stirred with a tedder, loaded onto the wagon with a loader, and lifted into the barn with a large fork.

Special Enterprises

There is a minor center of fruit production, principally apples, on the rolling bluffs along the Missouri River in northwestern Missouri and adjacent portions of Kansas and Nebraska. In southwestern Ohio, as already noted, there is a minor center of tobacco production, and sweet corn for canning is of local importance in several counties in the region. One county in Iowa produces most of the pop corn grown in the United States. But even in these relatively insignificant districts, the corn, small grain, hay, hog and cattle system of farming is of greater importance than any of these local specialties. This general system of farming is so well adapted to the physical conditions and so profitable that it prevails more completely over the entire Corn Belt than any other system of farming of comparable extent elsewhere in the United States, except the cotton and corn system in the Cotton Belt.

SIZE AND TENURE OF FARMS

The size of farms in the Corn Belt increases from east to west. In the Ohio and Indiana portion of the region the farms averaged 100 acres in size in 1920, of which 70 acres were in crops. In the Illinois and Iowa portion the farms averaged 157 acres in size, of which 120 acres were in crops; while in the Nebraska-Kansas portion the farms averaged about 200 acres in size, of which about 133 acres were in crops. The smaller farms in the Ohio-Indiana portion are probably due to the fact that this area was originally in forest, which required many years and a heavy expense to clear, also to the fact that this area was settled before the use of modern labor-saving machinery became prevalent. The prai-



FIGURE 123.—A corn harvester at work. This machine saves a large amount of labor, and more corn is being cut now than formerly, both for silage and for fodder. (U. S. Dept. of Agr. Yearbook, 1921.)

rie land of Illinois and Iowa was easily broken, but modern farm machinery was only just coming into use when settlement occurred, and the settlers for the most part lacked money to buy large amounts of land. When Nebraska and Kansas were settled, the introduction of machinery had made larger farm units feasible, and probably the settlers possessed a little more capital.

The trend throughout the Corn Belt today is toward larger farms. In 1900 the average size of farms in the Corn Belt was 143 acres, in 1910 the average

size was 149 acres, and by 1920 the average size had increased to 153 acres. The farms are still larger today. The average increase in acreage of harvested crops was from 90 acres in 1909 to 100 acres in 1919. This increase was made possible by more efficient farm machinery and the use of more power, also undoubtedly by more efficient management.

It is interesting to compare the average area of crops per farm in Iowa, the most typical Corn Belt state, with that in the mountains of eastern Kentucky, where corn is an even more dominant



FIGURE 124.—Husking corn from the standing stalks in northern Iowa. In the northern portion of the Corn Belt, west and southwest of Lake Michigan, the corn does not mature in time to seed wheat in the fall, so oats are sown in the spring, followed commonly by timothy and clover, and the corn stalks are allowed to stand in the field. Husking from the standing stalk requires much less labor than cutting and shocking; hence the large acreage of corn in the central and western Corn Belt is harvested principally by this method (see Fig. 122). (Photograph by M. O. Cooper, U. S. Dept. of Agr.)

crop. The average for Iowa is 101 acres, of which 42 were in corn, as compared with 16 acres in the Kentucky mountains, of which 9 were in corn. The difference in production per farmer is still greater, the Iowa farmer growing 1,740 bushels of corn on the average in 1919 as compared with 184 bushels in eastern Kentucky. It is this great productivity per man which explains the opulence of Iowa, and the small productivity per man, the poverty of eastern Kentucky. Physical conditions are, of course, the principal cause of this difference, but there is also undoubtedly a tendency for the best

(Fig. 126). On the poorer soils of northern Missouri and southern Iowa, on the other hand, only 20 to 40 per cent of the improved land is farmed by tenants. The poorer the soil, the smaller the probability that the farm can support both an owner and a tenant.

Tenants in the Corn Belt, however, are a very different class, in general, than in the Cotton Belt, where the percentage of tenancy is equally high and on the richest land is even higher. In the Cotton Belt the tenants are mostly negroes and poor whites, relatively few achieving ownership, whereas in the



FIGURE 125.—Harvesting corn with hogs in the Corn Belt. Hogging down corn is a successful and economical method of fattening hogs. Most of the stalks, it will be noted, have been broken down by the hogs. The barn in the background is typical of the newer type of barns in the Corn Belt, but is smaller than usual. (Photograph by L. B. Beeson, U. S. Dept. of Agr.)

farmers to get the best land, for on such land their superior skill has the greatest effect.

LAND TENURE

About 59 per cent of the farms in the Corn Belt are operated by their owners, 40 per cent by tenants, and 1 per cent by managers. The tenant farms are relatively most numerous on the richest land in central Illinois and northwestern Iowa, the percentage of farms operated by tenants rising to 60 per cent in these districts, and, as tenant farms are larger than owner farms, the proportion of improved land operated by tenants is in some counties as high as 70 per cent

Corn Belt nearly half the tenants are sons, sons-in-law, or otherwise related to the farm owners, and a large proportion will in the course of their lives save enough money to purchase and eventually pay for the farm. Then they, too, retire to town, often the county seat, usually at the behest of the wife or daughter and a new generation repeats the laborious and parsimonious process of paying for the farm. With the passage of each generation a large proportion of the value of the land, commonly the entire price of the farm, is thus drained away to the cities.

The greatest need of this greatest farming region in the world is the devel-

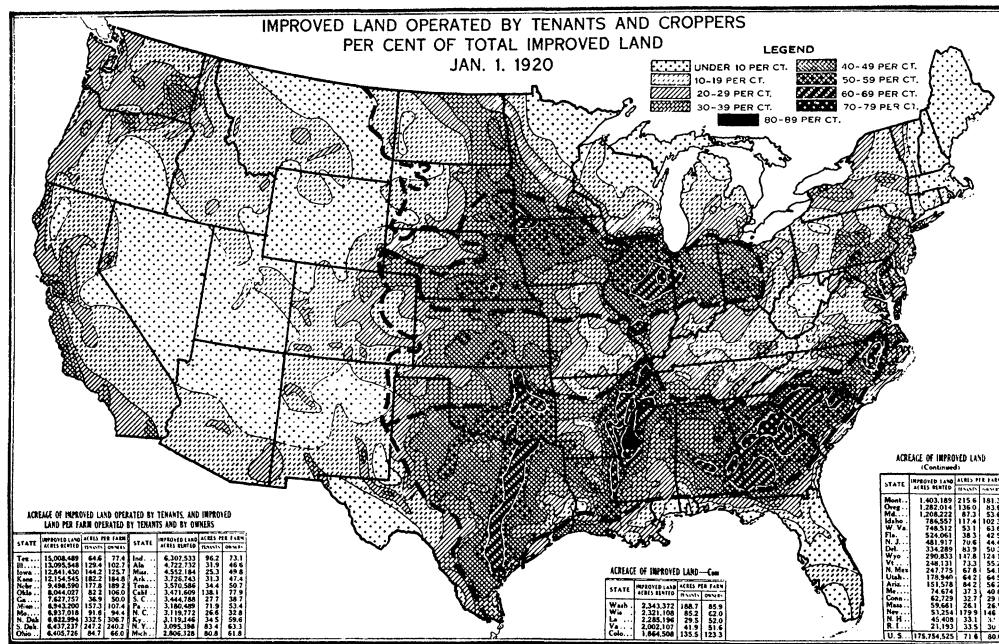


FIGURE 126.—This map shows the relative extent of tenancy from the standpoint of improved land. The principal areas having over 60 per cent of the improved land operated by tenants are the richest portions of the Corn Belt and of the Cotton Belt, which regions have been enclosed by broken lines on the map. These are our most productive areas in which many of the farmers or planters can afford to retire to town and be supported by the rent of their farms. The small proportion of improved land operated by tenants in the hills of New England, in the southern Appalachian Mountains, on the sandy lower coastal plain of the South, and in the arid areas of the West is noteworthy. The dashed north-south line is the eastern boundary of the Arid Grazing and Irrigated Crops Region. (Map adapted from 1921 Yearbook, U. S. Dept. of Agr.)

opment of rural social institutions and of an attitude toward rural life that will cause the older generation to be satisfied to spend their declining years on the farm and pass on to the next generation the wealth and experience they have accumulated. This would result in better homes and a more satisfactory rural culture (Figs. 127 and 128). It would undoubtedly help the younger generation to see in agriculture a more adequate and satisfying opportunity. This many of the more ambitious young men do not see at present.

THE PEOPLE

The population of the Corn Belt in 1919 was 12,300,000, which was 12 per cent of the population of the United States. Forty per cent of these people lived in the open country or in unincorporated hamlets and villages, 16 per

cent in incorporated villages of less than 2,000 population, and 44 per cent in places of 2,500 people or more, mostly in cities. If the village population may be considered to be half rural in interests, the people of the Corn Belt may be classified roughly as half rural, half urban in point of view.

Race

The farmers of the Corn Belt are mostly of native American stock, those in the southern part being descendants largely of settlers from Virginia and Pennsylvania, while in the northern portion most of the farmers are of New England and New York ancestry. There are also many farmers of German descent, notably in western Ohio, in northern Illinois, in the region around St. Louis, and in eastern Nebraska. Scandinavian farmers are found in many communities



FIGURE 127.—A pioneer home in Iowa. This house was constructed before the Civil War. It is made of logs, flattened on the side, and chinked with plaster. The early settlements in Iowa were made near streams, not only because of accessibility, but also because the forests that bordered the streams provided logs for the houses and wood for the fireplaces. (Photograph from O. C. Stine, U. S. Dept. of Agr.)

along the northern margin of the Corn Belt, while farmers of English and Irish ancestry are largely confined to Illinois, Iowa, and eastern Kansas. There is a large settlement of Russian farmers in southeastern South Dakota, also of Bohemians in eastern Nebraska. These various nationalities intermarry to a large extent, and more or less lose their identity in the second or third generation.

Religion and Education

The Corn Belt may be characterized as a region of progressive rural Prot-

estantism. Most of the farm population belong to one of the evangelical churches. Only $1\frac{1}{2}$ per cent of the rural population of the Corn Belt is illiterate (1 per cent for whites), as compared with 7 per cent in the Corn and Winter Wheat Belt to the south and 2.7 per cent in the Hay and Pasture region to the north, where there is a much larger proportion of foreign born illiterates.

The Trend in Production and Welfare

The number of farms in the Corn Belt decreased 8 per cent between 1900



FIGURE 128.—A modern farmstead in Iowa. A comparison of this picture with that above shows the great progress that has been made in a half century in providing pleasant homes, as well as adequate farm buildings, in the western portion of the Corn Belt. (Photograph from O. C. Stine, U. S. Dept. of Agr.)

and 1920, and the farm population about 13 per cent. The acreage of improved land remained stationary during the period, but that of crop land increased nearly 10 per cent. Acre-yields of the crops also increased slightly. It is evident that in the Corn Belt, as in most parts of the United States, the trend was toward the utilization of more capital, especially power machinery, and less labor on the farms; toward greater individual efficiency of production and consequently, at least in the long run,

stock than in expensive land. Tenancy in the Corn Belt, however, differs from that in England in that the tenant aspires to, and usually succeeds eventually in purchasing a farm. It is a step in the ladder from farm laborer to owner.

At present rural conditions in the Corn Belt are depressing. Land in 1925, according to the Census, was valued at only about half as much as in 1920. Not only many farmers but also many rural banks have gone into bankruptcy.

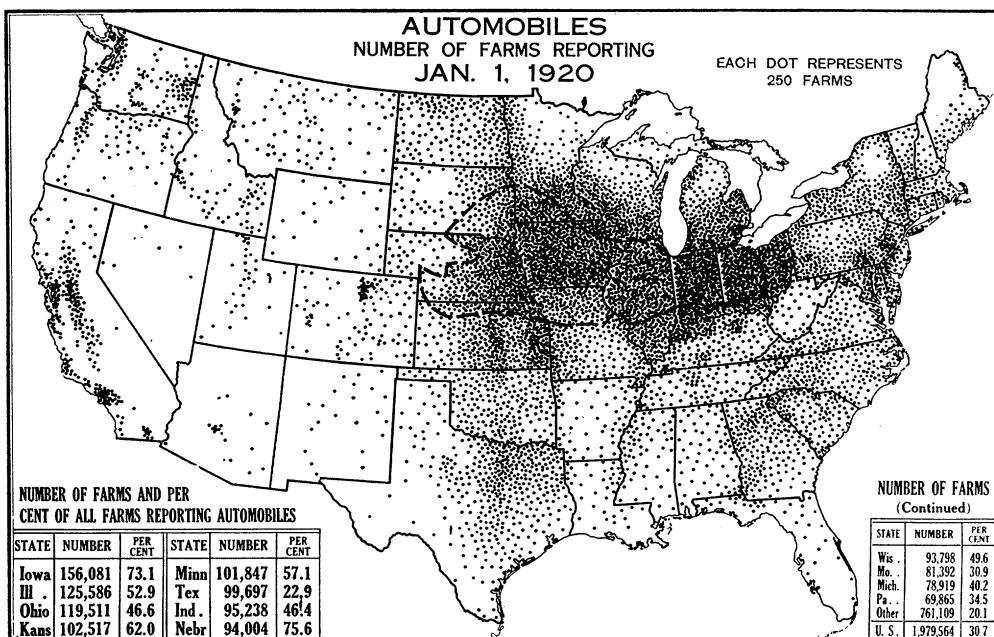


FIGURE 129.—Two-fifths of the 2,000,000 automobiles on farms in the United States, January 1, 1920, were in the Corn Belt. From one-half in the eastern portion to three-fourths of the farms in the western portion of the Corn Belt had automobiles, and about half the farms in Wisconsin, Minnesota, the Dakotas, and California. Eastward from the Corn Belt the proportion drops to one-third of the farms in New York and one-fourth in New England; southward it drops to one-seventh in the Carolinas and Georgia and to one-twentieth in Mississippi. (U. S. Dept. of Agr. Yearbook, 1921.)

toward greater per capita income. The increase in production per man was much greater than in production per acre.

The increase in tenancy does not indicate a tendency toward the continental European peasant agriculture, but rather toward the English system of tenancy, with its large farms, the tenant finding it more profitable at present to invest his funds in machinery, equipment and live-

Probably no portion of the nation, except Georgia and South Carolina, has suffered so severely from the agricultural depression. The richest land in the world can be bought often for less than it would cost to replace the farm buildings. Nevertheless, the farmers of the Corn Belt still buy automobiles more freely, probably, than farmers in any other portion of the United States (Fig.

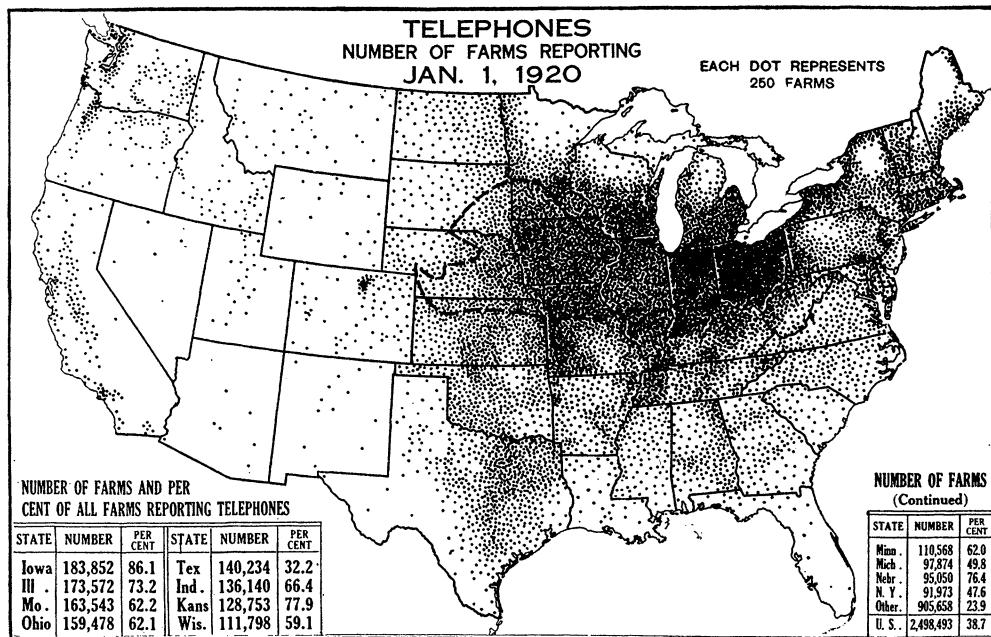


FIGURE 130.—Telephones are most common on the farms of the Corn Belt and of Kansas, in which region from 60 to 90 per cent of the farms, varying with the state, possess this convenience. In the Hay and Pasture, the Spring Wheat, and the Pacific Coast Regions, about half the farms have telephones; in Texas and Oklahoma about one-third of the farms; in the Corn and Winter Wheat Region (except Kansas), in the Great Plains and the Rocky Mountain Regions about a quarter of the farms; but in the Cotton Belt, east of Texas and Oklahoma, only 5 to 15 per cent. The proportion of the farms possessing a telephone is indicative of the general diffusion of rural progress and prosperity. (U. S. Dept. of Agr. Yearbook, 1921.)

129). Nearly all the farms have telephones (Fig. 130), and a very large proportion have radio outfits. The peo-

ple of the Corn Belt, despite the agricultural depression, persist in pushing onward toward the better day.