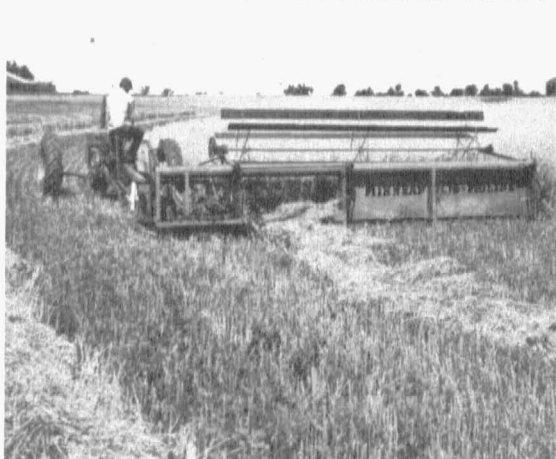


THE CHANGING CONDITIONS OF RURAL LIFE

A YOUTH PUBLICATION

by M. F. Miller



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J. H. Longwell, Director

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A Youth Publication

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"Let's Look at the Soil," Station Circular 330, June, 1948.

"Farming as an Occupation," Station Circular 360, May, 1951.

The Changing Conditions of Rural Life

A Youth Publication

M. F. MILLER*

If your grandfather is eighty years old he has lived during the most interesting part of the world's history. Rural life has undergone greater changes in his lifetime than during all preceding centuries. Ask him about it and see what he says. He can remember when farm people had no telephones, no electric lights, no refrigerators, not even fly screens. There was no running water in the houses and no radios. There were no improved roads, no automobiles and no airplanes.

This man has seen all of these things develop and many more. He has seen the age of science come in and revolutionize our lives. If he is a farmer he has seen as many changes in agriculture as there have been in industry and commerce. At the time he was born, farmers were doing things largely as their fathers and their grandfathers had done before them. But the changes in farming and rural living during this eighty-year period are almost unbelievable. Let us make a comparison between the agricultural conditions of the earlier times,

even including those of the pioneers, and the conditions of today.

The Early Settlers

The pioneers who settled along the northeastern coast of this country were largely adventurers and explorers. They lived mainly on the foods that could be obtained from wild plants, from fish, and from the animals of the forests. They had little cooking equipment and were quite unfamiliar with the conditions surrounding them. There is little wonder, therefore, that starvation plagued them during the long New England winters. Some settlements failed entirely and only the hardiest persons, or the best organized groups survived.

The settlers who came through the early hardships were a sturdy people and they must have had a dogged determination which made it possible for them to succeed. There may be some among us today who have become too "soft" to do what the pioneers did. However, we of the present day, whose very lives are the result of these pioneer beginnings, owe these people for almost everything we enjoy in this great country of ours. The differences between the conditions of

*Dean Emeritus, University of Missouri
College of Agriculture

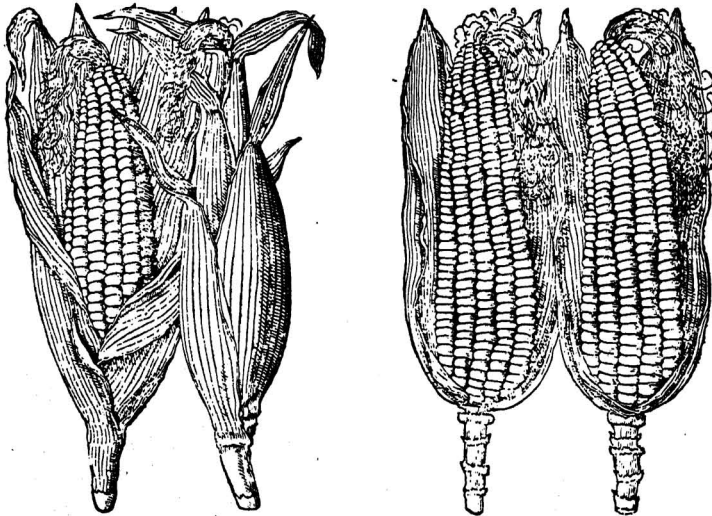
the early days and those of the present are indeed very great.

Early Methods of Farming

The earliest farming methods of the pioneers were largely those of the Indians on the East Coast. Those native people cleared small areas of land by means of fire and the simplest of tools. The land was dug up with large clam shells or simple wooden or stone hoes. While the Indian women did most of this agricultural work, they often worked in groups and made special occasions of it. As a matter of fact, those Indians developed a type of agriculture which, along with hunting and fishing, fitted their needs very well indeed. From the modern standpoint it was very crude but for the tools and education they possessed it was pretty good farming. The crops they grew were from plants native to

this country, such as corn, beans, squash and pumpkins. Then there were the wild grapes, berries and a great variety of nuts of which they made much use.

The Indian farming methods were so different from those the early settlers had known in Europe that the newcomers were rather slow to adopt them. However, they soon learned that when people are in a country that is new to them, the best thing, at least at first, is to do as the natives do. They therefore secured corn and the seeds of other food plants from the Indians and began to practice the Indian type of agriculture. Corn was planted in hills far apart, and on the poorer soils they used the Indian plan of placing a fish under each hill for its fertilizing effect. The ripened corn was easily stored for winter for



These drawings of ears of American corn evidently in the roasting ear stage, were made in 1597, before the white settlement at Jamestown, Virginia. That is over 350 years ago. The Indians had brought corn to a rather high state of development before white men set foot on this continent. (Carrier).

making their principal bread type of food. Corn and the other crops the Indians taught them to grow, along with nuts, fish and the flesh of deer, bear and wild turkey, served the pioneers well during the long winters.

As Settlers Moved Westward

As the settlers moved westward across the Appalachian mountains, their methods of agriculture improved. The axe, the hoe and other hand tools had been introduced from Europe and some domestic animals had been brought over. Wooden plows with iron points from European steel were built so that it was easier to work the soil. Seeds of the small grains—wheat, rye and oats—were introduced from Europe. Wheat and rye flour came into use for making bread. However, all farms had to be carved out of the forests so that the labor was very great. Nevertheless, this heavy work strengthened the fiber of these early farmers, much of which was passed on to their grandchildren and great-grandchildren who have brought about the agricultural developments of the present day.

When the movement of settlers reached the central states, entirely new conditions were met. They thought the tough sod of the prairie could not be plowed. As a result they built their cabins in the wooded areas along the water courses since they were familiar with the agriculture of cleared forest land, and water was near by.

The wooden plows and even the steel plows which were later introduced would not turn the tough prairie sod but some one conceived the

idea of building a very large plow for this purpose to be drawn by several oxen. This was known as a "prairie breaker." It required three to six yoke of oxen to pull it and it was a success.

The plowing of the rich prairie lands marked the beginning of a new agricultural epoch. Moreover, the passage by Congress of the so-called *Homestead Act* in 1862 had a tremendous effect on prairie agriculture. Under this act, one could become the owner of 160 acres of land by living on it for five years and by doing a certain amount of work in developing it. Later in the drier areas of the plains states, the size of the homestead was increased to 320 acres. Naturally, these acts greatly increased the rate of settling over these wide prairie areas, and agriculture developed rapidly.

The Early Agriculture In the Central States

It is interesting to look back a hundred years when agriculture was developing in the great area of the central states. Those were the days of the tallow candle for light, soon replaced by the kerosene lamp. The farmers made most of their own clothes from wool, flax or from cotton brought in from the beginning of cotton culture in the South. Dependent first on springs and streams for water they now began to dig wells and to make cisterns for collecting drinking water. Those were the early days of the "old oaken bucket." They were also times of ice-cold beds in farm cabin lofts.

It was during these times that railroads were coming in and towns were



A real pioneer cabin of the eastern mountain region, with its hewn logs, "chinked" with mud or plaster, and its big stone chimney. A stream of water ran nearby. (After Oakley).

developing. Farmers were therefore able to buy some of the things they needed. Clovers and tame grasses were introduced. These, along with corn, provided feed for farm animals so that the livestock industry made its beginning. From this time forward agriculture has developed until we have the amazing conditions of today.

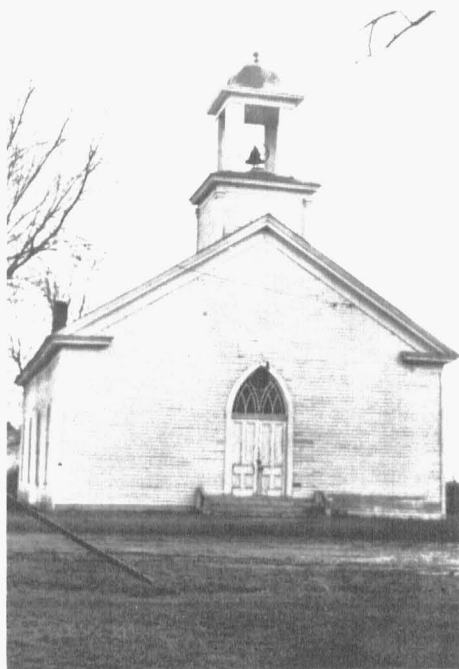
Rural Schools

In the Last Century

Our grandfathers certainly believed in schools. In spite of poor roads, school houses were built in large numbers. Their plan was to put school houses close enough together that the children could all walk to them, although this was sometimes a distance of three or four miles. With the large families of those days, these one-room schools were usually filled. No high schools were available to the rural children so they often attended the

one-room schools until they were 18 or 19 years old. But in spite of difficulties, these schools gave the pupils excellent training in the three R's, "readin', 'ritin', and 'rithmetic". Moreover, subjects were often taught which later were offered in the high schools. The teachers were practically all men, often needed to preserve order. This wide and uniform distribution of rural schools throughout the eastern and central states showed that our forefathers believed that education was necessary to a successful democratic way of life.

Country churches were also numerous in our fathers' and grandfathers' days. The early settlers came to this country to find a place where they could be free to live as they liked, including the freedom to worship God in their own way. These people believed in religion and they took it seriously. The Declaration of Inde-



A country church built about 70 years ago. Far too many of these churches have been closed; something must be done about it.

pendence and the Constitution were based on religious principles. These early settlers knew that the establishment of churches was necessary to the religious life of the people. As a result, they built their churches close together so that they could be reached

by the means of travel common in those times.

A single preacher often served several churches, traveling from one to another by horseback or by the old-fashioned buggy. But in spite of handicaps these rural churches gave good service to the people who attended them and most country people were religious. This was one of the great elements of strength these country people possessed and it proved a real force for good in the nation.

Pioneers Laid Foundation For the Future

The many hardships which our forefathers experienced certainly developed in them a conquering spirit. They were a brave and stalwart people with Christian ideals and bold purposes which carried them very far. It certainly has been a long step from the conditions they had to meet to those we enjoy today. Certainly, with all the new developments that have come about, we have great responsibilities for serving our country and meeting the many new problems which exist under present-day conditions.

Farmers of Today

We have learned something of the farming methods of our forefathers. Let us now see what the farmers of today are doing. It will be interesting to consider what the new developments are, why they have come about, how they are affecting the lives of farm people and what they may mean for the future.

Influence of Two World Wars

While wars are very bad, some benefits usually result. One of the benefits of World Wars I and II to this country was the great improvement in the methods of agricultural production. This came about through a powerful and patriotic effort among farmers to supply food for our armies,

our people, and for the countries fighting with us. During the second World War one of the great slogans was "food will win the war." As a result of this need for food the farmers made every effort to meet the demands placed upon them. All of the better ones attempted to use the new methods of production that had been worked out by the agricultural experiment stations. Farmers and their families worked long hours. The sale prices of farm products went up, so that they had money with which to buy good seed and fertilizing materials for the soil. They also bought farm machinery when they could secure it. As a result of these efforts, along with some good growing seasons, crop production in the Cornbelt during World War II, increased about one-third. It will be seen therefore, that this war influence resulted in a most remarkable agricultural advance. Moreover, improvements are still continuing, with agricultural production at a high level, and unless something interferes with progress, production will go much higher.

Increased Farm Returns

The increase in crop yields, as a result of the recent wars, was not the only farm development that took place. The volume of animal products increased in much the same way. Moreover, as the value of a dollar became less, the increased dollar return from all farm products went up greatly. The gross farm income for the country, according to the latest available figures is now around \$27,000,000,000 annually. That's an enormous

sum. It's far greater than the income of any other industry.

The large returns from the farms of the country mean, of course, that the income of most farmers has also increased. Actually, by 1951, the dollar receipts from the sale of agricultural products had increased 125 per cent above those before the second World War. This means that, on the whole, farmers have prospered. However, it must be remembered that the things which farmers buy, such as machinery, building materials, clothing, some foods, some animal feeds, and many other things, have also increased greatly in price. The actual prosperity of the individual farmer is, therefore, not as great as it would seem.

As far as net returns to the farmer are concerned, some farm products, especially those which still require much hand labor, are produced with little or no profit. If farm labor received wages equal to city labor, these products would be produced at a considerable loss to the farmer. Nevertheless, the dollar returns from farming today, as compared with those of our grandfathers' time, are very large. Certainly our grandfathers could not have believed such conditions possible.

It must be understood that we have been considering returns to the average farmer and those in better than average financial circumstances. Actually, according to the census of 1945, over one-third of Missouri farmers had gross annual incomes of less than \$1000, while almost one-fourth had incomes of less than \$600. In 1950, due



The new soil treatments, new varieties of crops and new cropping systems bring very heavy yields.

to rising prices these incomes were about \$1250 and \$750. These farmers are mostly on small farms, or farms of low fertility, but many farmers, even when farm prices are high, lack the business ability to make farming profitable. It is true that this less well-to-do group is enjoying some of the modern advantages which have come to the farmers as a whole, yet they lack the prosperity of the more successful ones. It is interesting to speculate on the per cent of these farmers that could be made prosperous through a further extension of agricultural education among farm people.

Much Farm Machinery Means Less Human Labor

One of the most important developments on the farms of the country is the increased use of farm machinery of all kinds. This may be illustrated by the number of tractors on Missouri farms. In 1930 this number was 25,000;

in 1950 it was 124,000. For the United States as a whole this increase, during the same period, was from 900,000 to 3,600,000. Another example is that of grain combines in the country which increased in numbers from 61,000 in 1930 to 600,000 in 1950. Somewhat similar increases took place in many other types of machines.

As a result of this greatly expanded use of machinery the amount of farm work a man can accomplish has increased enormously. In the period 1910-14, or just before the first World War, it took 135 man hours of labor to produce 100 bushels of corn. In the period 1945-48, it took only half this number, or 67 man hours. In the case of wheat, 106 man hours were required to produce 100 bushels in 1910-14 while in 1945-48 it took only 34 hours, or one-third as many. These are striking figures, showing how mechanical equipment has cut down the hours of man labor on farms.

This increased production per man has had a remarkable effect on agriculture. First, it has reduced the numbers of workers on farms. Second, it has increased both the yield and quality of the crops grown. Third, it has reduced the cost of producing a bushel of grain, a ton of hay, or a gallon of milk. Fourth, it has taken much of the drudgery out of farm work, thus making it more interesting, especially to the young people on farms.

There is another effect of the increased use of tractors and other machines and that is the reduced need for horses and mules. The number of such work animals in the country today is only about one-fourth what it was thirty years ago. But this is not all. There is now available, for producing crops, a total of about 15,000,000 acres of land formerly needed for

growing feed for these work animals. Think of the amount of human food this acreage is now supplying!

It is evident that farm machinery has had a very great effect on agriculture and on farm people. Its influence has been almost revolutionary. It is possible that its use will continue to expand until hand labor on farms has almost disappeared. Some farm boys may think they were born thirty years too soon.

American Farm Population Is Becoming Smaller

One of the most far-reaching effects of the developments in farming has been the decline in the number and percentage of people on farms. The growth of the cities with large manufacturing plants has taken many people from the country. Moreover, the



Most country boys today would rather ride a tractor than a horse. How times have changed!

greater acre yields and the increased use of farm machinery have meant smaller numbers of farm people are actually needed to produce an abundance of food.

In the early days, almost all people lived on the land. Towns were small and far between. In George Washington's time about 95 per cent of the people were on farms; in Lincoln's time this figure was about 65 per cent. The census of 1950 places the number at 16½ per cent. There are predictions that if the increase in production per man continues, only 12 per cent of the people may be on farms by 1970. One hundred years ago it took eight people on farms to feed themselves and two people in the towns. Today two people on farms can feed themselves and between eight and nine people in cities and towns.

Effects of the Declining Numbers of Farm People

There are some interesting effects of the shrinkage in the numbers of people on farms. Some of these effects are good, some bad. Insofar as the smaller numbers mean higher production per man, this is good. It also means less cost in the production of each bushel or ton of produce. These two effects together mean that the average farmer should have a better living. On the whole, however, these benefits come to the good farmers rather than to the poor ones.

Among the bad effects of the decline in the numbers of farm people are those listed below:

First, it has reduced the attendance at rural schools and churches until many have closed. While this may be a passing phase in a movement toward



An old-time Missouri country school, abandoned mainly because of the decrease in numbers of farm children.

better schools and churches, the immediate effect is bad.

Second, the smaller the number of persons on farms the less will be the number of their representatives in state legislatures and in Congress. This means that farmers will have less and less to say about laws which affect them.

Third, as the numbers of people in the country go down and the numbers in cities go up, our type of government may be placed in danger. With very large numbers of workers in cities, these people may become very restless during times of unemployment. Under such conditions hunger and bread riots often occur and the people may be led into unsound thinking and violent action, particularly by leaders who do not have the good of our democracy at heart. There is certainly a limit in the size to which cities may safely grow. This is something to think about.

Roads Have Much Influence on Farm People

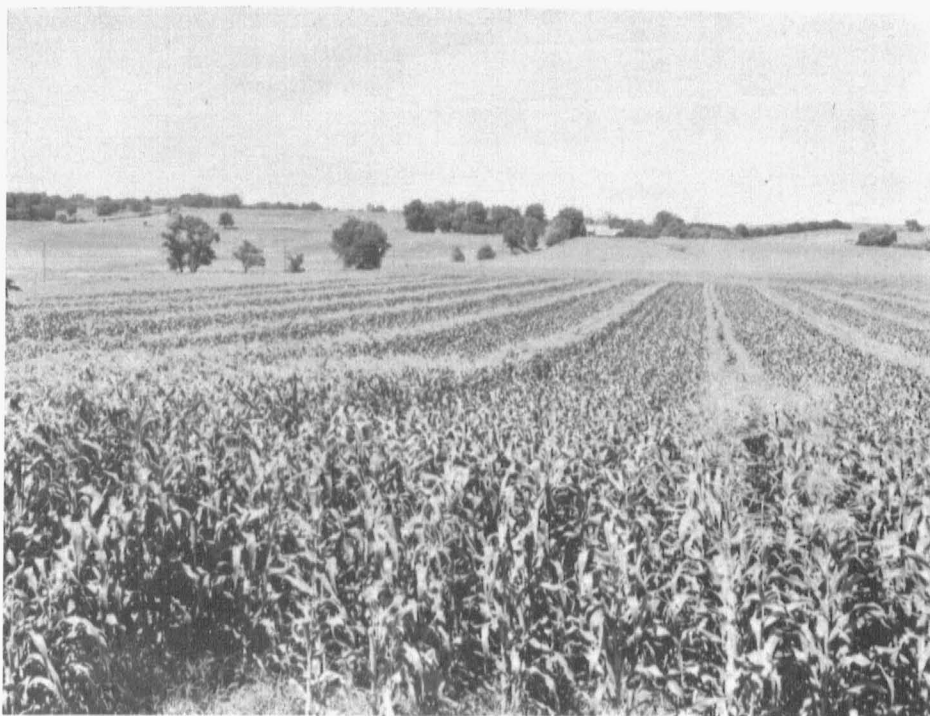
Few modern developments have had more effect on country people than the building of all-weather roads. Where formerly the farmer traveled in slow, horse-drawn vehicles, rode horseback, or walked, today he goes by car or even by plane. He sometimes travels hundreds of miles in a day and can buy supplies at a business center many miles away. His mail is delivered to the farm daily. As the numbers of pupils in the country schools have declined many are being transported by bus to larger schools at central locations. At the same time, with

a car, the farmer may attend church services at a church of his choice, either in town or somewhere in the open country.

Many farmers who have mortgages on their farms prefer to keep up to date with a new car rather than to use the money as payment on a farm debt. Certainly no one needs a car more than a farmer. City people may use busses or street cars for getting around, but most farmers must use a car, walk or stay at home. Moreover, the car provides the farm family with recreation it had never known before. Of course, the car has its disadvantages, both in the country and in the city. This is especially true in the case of young people who often use it recklessly. Nevertheless, the automobile for general use, and the truck for hauling, have almost made over the ways of living among farm people. Picture to yourself just what farming would be today, if not a single automobile or truck were in existence.

New Crop Varieties Mean Much to Farmers

There are very few crop varieties grown on Missouri farms today that were there a generation or two ago. The plant breeders at the experiment stations and elsewhere, have developed new ones. These new types yield more and they are of better quality than the older ones. As a result total crop production has gone up while the quality has also improved, thus making crops sell better and providing better animal feed. The new varieties of corn, known as *corn hybrids*, are now used on 95 per



A field used in producing hybrid seed corn. Most of the rows are detasseled but on some the tassels are left on for pollination purposes. How hybrid corn is produced is a most fascinating study.

cent of Missouri farms. Their yields are around 20 per cent greater than those of the older types of corn. This is an outstanding advance which has come within the last 25 years. Further advances in the development of corn hybrids are right around the corner.

Among the so-called small grains, new varieties or strains of wheat and oats, in particular, have added much to the farm income. New kinds of soybeans are yielding almost twice as much grain as the earlier ones. Largely because of this, a great production of soybeans for oil has developed. Soybean mills have sprung up throughout the soybean growing areas which, in Missouri, are mainly in the north-

eastern and southeastern parts of the state.

In addition to the improved types of crops produced by plant breeders, new ones are constantly being introduced from other countries. Korean lespedeza is one of the best examples. It is one of the most widely grown crops in Missouri. Ladino clover is another new crop which is proving very valuable in Missouri and many other states. There are others, but these are good examples. Undoubtedly new types of crops will continue to come from other countries, and this is one of the important developments of an advancing agriculture. It would be very interesting to be able to peer



An example of Missouri strip cropping, for controlling erosion. This practice is not so common in Missouri but it is widely used in some other states. A landscape showing much strip cropping is a beautiful sight, particularly from the air. The old fashioned wheat shocks add to the beauty of this scene.

fifty years into the future and see what crops farmers will be growing at that time.

Soil Improvement and Conservation Are Changing Agriculture

There was a time when most farmers thought their soils would never wear out. For a hundred years, soils were farmed too hard. The result has been that the soils of Missouri and most of the Cornbelt states, have lost about one-third of their original fertility. However, the soil scientists at the agricultural experiment stations, with the aid of the most progressive farmers, have found new and improved ways of managing soils. Clovers and other soil building crops, grown with lime, fertilizers and farm manure, have greatly increased soil

productivity. One of the newer developments is that of soil testing laboratories set up in connection with about two-thirds of the county agents' offices in Missouri. Here the farmers can have their soil tested to find out what they need for best production.

City people as well as farmers are coming to understand that if we are to have abundant supplies of food for the future, the soils must be built up and conserved. This is a matter which affects all the people. Fortunately, methods of soil management have been worked out which make this possible. Some good farmers are now actually securing greater yields than were received when our soils were new and first put into cultivation by



A county soil testing laboratory. The young woman is trained for making the tests. The county agent explains the methods and shows the value of the tests to three interested farmers.

the pioneers. However, many farmers have not yet learned to apply these improved methods, so that on their farms the soils are still running down. It is highly important that practically all farmers adopt these newer methods. Fortunately, much progress is being made in that direction.

Running Water Systems Lighten Household Tasks

The pioneers depended on springs, flowing streams and sometimes on lakes for their water supply. Later, cisterns became common, particularly in the southern states. Cisterns for drinking water were very common in northern and central Missouri a couple of generations ago. The Ozark region had some cisterns on the more level plateau lands but in the greater part of the area, springs and spring-fed streams, were abundant.

Dug wells came into rather general use in the more level areas of Missouri and other Cornbelt states during the latter part of the last century. Those were the days of the doubtful methods of water witching with a crooked stick. Later came the bored, or driven wells as they were called, in which a four or six-inch hole was drilled or driven into the ground, or the underlying rock, until a good supply of water was reached, after which a pipe of a size that fitted the hole was driven in as a casing. This is the common farm well of today.

Most farm boys are familiar with another type of water supply for stock—the dug pond, which is very common in Missouri. Great numbers of these have been dug in recent years. When they are deep enough—that is, eight or more feet at the deep-

est point—and where they are placed on a slope, so as to receive an abundance of runoff water, they retain a supply throughout the year. More recently, too, many of these are being used for growing fish in which both the younger and older people are interested.

The most modern farm water systems are those where the water is pumped by electric motors or gasoline engines from deep driven wells in which the water is pure and wholesome. It is then stored in elevated tanks or forced throughout the house and other buildings by direct pressure. Certainly this is a long step from the spring, the cistern, or the shallow dug well, where the water often contained disease germs, and where it had to be pumped by hand and

carried to the house. The untold millions of gallons of water which farm people, mostly farm women, have carried during the many years preceding the power pumps, can scarcely be estimated. One of the greatest advances made in farming is this development of modern systems of handling the water supply.

Electricity Has Made Tremendous Changes

About three-fourths of the farms of Missouri are now supplied with electricity. This is bringing about a remarkable change in the lives of farm people. It is making possible a large number of farm and household conveniences. It provides a flood of light as compared with kerosene lamps or tallow candles. It supplies power for grinding grains, mixing feeds, pump-



"Chores are fun for me now—after thirty years of stumbling around in the dark," said a Missouri farmer recently as he stood on his back porch and flicked on the barnyard lights.

ing water, filling silos and for milking cows. The lights supplied to barns and other farm buildings are most convenient. Some farmers place a large light on a tall pole, lighting up the farm lots and making it possible to do chores early or late. This also discourages chicken thieves and other prowlers, common in some districts. This is an interesting development.

New uses for electricity on the farm are constantly developing. It is certainly amazing how many things can be done with it. The national Rural Electrification Administration, working through farm co-operatives and some private companies, is assisting greatly in the spread of electricity to more and more farmers. If war conditions or hard times do not interfere, it is probable that almost all Missouri farms will have electricity in the next

ten years. This use of the electric current on farms is in tremendous contrast to the kerosene lamp of one or two generations ago. On most farms today things would look very gloomy without it.

Farm Homes are Improved

There's still a long way to go before every Missouri farm has a comfortable, well equipped home. Of course this may never come but what has taken place within the last century is most remarkable. For many decades, farm homes were planned and built largely by country carpenters. They commonly built simple box-like houses with two rooms upstairs and two down; or they constructed the old L-shaped styles, many of which are still in use. Some were large and almost impossible to heat. But a change is taking place and farm houses recently



One of the modern farm homes. It is large enough but not too large; it is well kept, completely equipped and comfortable.



A very modern farm kitchen, with plenty of storage cupboards and up-to-date equipment.

built have been better planned and more comfortable. Most of the new ones are now provided with central heat, running water, and electricity. As a rule, these are not large houses but they are planned for convenience and comfort.

Some modern farm kitchens are amazing to behold. As a rule they are fairly large with the latest in porcelain sinks and drain boards. They usually have plenty of cupboards and drawers for storing kitchenware, kitchen supplies, and in many cases, handy stocks of preserved fruits and vegetables. Many have power equipment either in the kitchen or in an adjoining work room, to assist in the preparation of home-grown products

for canning. They may provide space for an electric washing machine and always for an ironing board and an electric iron. More recently, the so-called *deep freezer* has come in by which fruits and vegetables, and even pastries and other things, may be frozen and preserved for future family or company use.

While high costs of building materials and labor have held back extensive building during recent years, many farmers have remodeled their old houses. They have installed the various modern conveniences which go along with electricity. All of these developments are bringing more satisfaction to country living. There is no comparison between the comforts of

better farm homes of today and those of the early part of this century. Certainly there is no finer place to live than in a well-planned and well-equipped country home.

Science Reduces Threat Of Insects and Crop Diseases

Injurious insects and crop diseases have increased as the country has become more thickly settled and as more land has been put into cultivation. Some of the worst of these pests are the boll weevil on cotton, the Codling moth on apples, and the European corn borer on corn. Many new crop diseases have also come in, such as wilts, rusts, and blights.

The farmers would have been almost helpless in the face of these crop

enemies if it had not been for the development of control measures by the scientific men. Through careful experimental work these scientists have developed a great variety of poisonous sprays and dusts, and new types of equipment for applying them. Now in use, therefore, for controlling these pests are many effective preparations which were quite unheard of a couple of generations ago. It is now possible to get rid of house flies and mosquitoes almost completely. The injury from the boll weevil and the Codling moth can be largely prevented. Scientists and farmers are learning how to control the corn borer and this is true of many other insects. There was a time when some scientists feared that



Farm women know how to preserve home grown foods. Here is one with a partial supply of fruits and vegetables she has canned for the winter. Deep freezing equipment is also coming into use on many farms.

insects might finally overcome the human race, but there is no longer such fear.

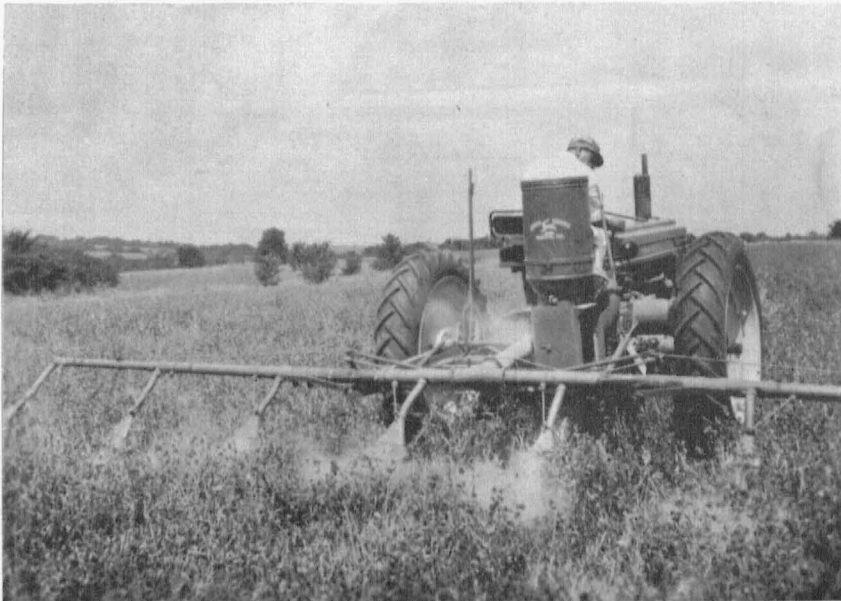
Crop diseases are almost as troublesome as insects. One of the difficulties in controlling these diseases is that new ones are constantly appearing even on the new strains of crops. As a result crop breeders are always looking for new strains or varieties that are not affected. It looks like an unending fight to keep the new diseases in check, but the fight will be won.

Weeds Are on the Way Out

Just a few years ago, one of the jobs farm boys disliked most was hoeing weeds. There were weeds in the corn, in the garden, and in many other places, which the boys had to hoe out. There is still some hoeing to be done but new means of weed control have come in. The modern small shovel cul-

tivator and a tractor will go a long way in keeping weeds out of cultivated crops. Systems of crop rotation control many of them. Moreover, new weed sprays, such as 2-4-D and others are coming into use, the results of which are amazing. Most weeds with wide leaves can be killed by such sprays without serious injury to the crops among which they grow, even in small grain fields or pastures. This was almost unbelievable to farmers when they first heard of it. These sprays may now be applied with a tractor-drawn spraying outfit or even from an airplane. While there will probably always be a place for a cultivator, such sprays will go a long way in controlling farm weeds.

Another new weed fighter is the flame thrower. This machine throws a flame near the surface of the ground



A modern power spraying outfit for controlling certain field insects. Somewhat similar machines are used for killing weeds. These are remarkable developments.

in corn or cotton fields, and sears the young weeds as they start. While this is still somewhat in the experimental stage it has been tried out with success.

A lot of other things have been learned about fighting weeds. As a result, hoes are not as polished and bright as they used to be. Many of them are rusting in tool sheds.

We Learn To Control Animal Disease

Like crop diseases, new animal diseases have come in as the numbers of farm animals have increased. Some of these would have almost ruined livestock farming if they had not been controlled. Hog cholera is a good example. This disease was causing tremendous losses to farmers until vac-

ination control was worked out. Now almost all farmers keep their hogs vaccinated for protection against it. One of these times, methods will be developed for eradicating it entirely.

The *Pullorum* disease of chickens is one in which control measures are necessary to maintain paying poultry flocks. However, one of the most interesting and far-reaching controls developed is that for Texas fever among cattle. This disease is carried by a tick which was formerly common throughout the southern and southwestern states, reaching as far north as northern Oklahoma and southern Missouri. A method of killing the ticks by dipping the cattle in a prepared solution was worked out. This plan was adopted in all the states where



The poultry industry in Missouri has made great progress; but only because our principal poultry raisers keep up on the latest scientific methods. These people are vaccinating chickens against fowl pox.

the ticks were present, thus doing away with the disease in all the affected territory, excepting a narrow strip along the Gulf Coast. This made possible the great production of cattle throughout Texas, Oklahoma, southern Missouri, and to a considerable extent throughout the entire South. The value of this tick control plan has meant hundreds of millions of dollars to cattlemen during the last forty years. These are but a few examples of the great progress made in the control of animal diseases. Others could be given. With the numbers of livestock now found on the farms of the

country, think what it would mean if these control measures were suddenly abandoned!

Large Increases in Acre Yields

Mention has been made of the increase in crop production due to the War. While these increases were due in part to rather favorable seasons and to long days of hard work by farmers, the two main influences were those of better crop varieties and increased soil productivity through improved soil treatments. Formerly, farmers thought that a yield of 50 to 60 bushels of corn was very good. Today, through the use of hybrid corn,



One-hundred-bushel corn crops like this one are becoming commonplace. Our forefathers, farming new soils, had such poor seed and implements that they rarely grew half this amount.

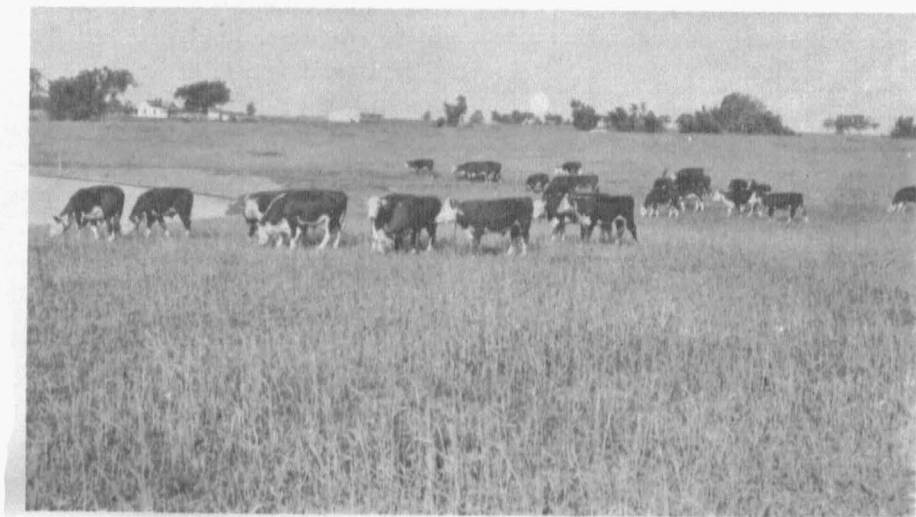
along with lime, farm manures, green manures, fertilizers, good cropping systems, good tillage methods, and well balanced systems of farming, many farmers are growing 100 bushels or more per acre. Somewhat similar yield increases can be secured from other crops. It is now evident that as long as lime and fertilizers can be bought at reasonable prices and as long as the prices of farm products remain at high levels, good farmers can produce very high yields with profit.

An interesting thing about increased yields is that even soils of rather low fertility, if handled properly can be made to produce satisfactory yields. Many lands that were formerly thought too poor to farm, excepting in pasture, can now be brought into regular cropping systems. It has also been learned that poor pasture land, under proper soil treatment may

provide a good income from the meat or milk produced from it. Moreover, improvement of the usual type of pasture for much greater production is one of the newer plans in agriculture, under what is known as *pasture farming*. In such a system a smaller acreage of corn is grown on the farm, which assists in maintaining soil fertility. At the same time the better pasture gives more meat or milk and usually a better farm income. These are very interesting developments.

Fewer Farm Workers Are Needed

As more and more farm machines have come into use the numbers of farm workers have become less and less. For the farm worker thus thrown out of employment this is a serious matter. Most of these men will go to the cities and towns, where some of the good ones may be better off but where the poorer ones will be less well off than on farms.



The use of improved pastures with less corn is one of the most important recent developments in farming. This plan lowers the cost of producing meat and milk, saves labor and keeps the soil more fertile.

The farm owner or manager usually finds that the use of machinery, with less hired help, brings in a larger net income. The work can be done more rapidly and usually more efficiently. However, as farms have gradually increased in size, this greater use of machinery has demanded workers with more natural mechanical ability. The larger farms may require a considerable number of such men. This offers some opportunity for farm youth who have natural ability in operating machines. Unfortunately, most of these workers have little chance of becoming farm owners. If farms should continue to increase in size there would probably develop a distinct group of such skilled farm machine workers which might become a branch of organized labor. Whether this would develop into a good or bad situation it is difficult to say. Certainly such developments among farm workers are about as far from the conditions in the early days of farming as one can imagine.

Improved Weather Forecasts Are Helpful to Farmers

The old saw from Mark Twain that "everyone talks about the weather but no one does anything about it" is losing its meaning. Much now is done by the United States Weather Bureau in predicting weather changes

which are of great aid to farmers. One of the real difficulties in farming is that the farm operator is at the mercy of the weather. There are almost always periods when it is too wet or too dry, too hot or too cold. The spring may be too late or the fall too early, so that late spring frosts or early fall frosts may do much damage.

While the Weather Bureau cannot control the weather it can keep the farmers informed, at least for a short period in advance, regarding important weather changes. As time goes on, improved methods of forecasting will doubtless allow accurate forecasts to be made for several days or even several weeks ahead. With advance notice of even a day or two regarding rains, snows, floods, temperature changes, frosts, or storms, farmers can adjust their farm operations to meet such changes. As the length of time and the accuracy of such predictions is extended, the benefits to farmers will be correspondingly increased. In the fruit and vegetable growing sections of the country, special weather forecasters are employed to issue hourly radio statements, if need be, regarding approaching frosts, storms, or other weather changes. Such warnings may result in the saving of hundreds of thousands of dollars to farmers each year in the protection of their crops.

Some Reasons for Agricultural Progress

The great advances which have taken place in agriculture and which are continuing at high speed cannot be considered as accidental. Many reasons can be mentioned. Let us consider some of them.

Farmers Have Benefited Greatly Through Better Education

The successful management of a farm now requires much more knowledge than it did in earlier days. The greatly increased complexities of

farming make this necessary. While many farm problems have been solved, many more difficult ones must be met. Fortunately, for farm people, the means of securing information have improved greatly. Formerly, no schools but rural schools were open to farm people. Now the majority of farm boys and girls go to high school. Moreover, special methods of training in agriculture have been developed in the elementary schools, in high



A good modern one-room country school with playground equipment, shrubs planted around the building and the American flag flying. There are, however, too few children to make the best use of the improvements.

schools, in universities, and colleges. All of these are open to farm youth or to their elders.

It is of much interest to observe how farm people have made use of the various educational opportunities open to them. While they were at first rather cautious about adopting the newer ideas of scientific agriculture, they have changed greatly in recent years. The majority of them are now accepting these ideas, at least in part, and they are using many of them on their farms. As a matter of fact, the developments in present day agriculture are due largely to the manner in which farm people are making use of these new things which have been brought to them through better educational opportunities.

High Schools Help Farm People

In Missouri the real spread of high schools took place in the early nineteen-hundreds. Of course, when these schools first developed the roads were not good enough to allow many rural youth to reach them. However, with the building of hard surfaced roads and the use of busses this condition changed greatly. While there are still many rural children who cannot reach a high school because of unimproved roads, most of them can.

One of the most significant things that ever happened to the high schools of the country was the development of plans for teaching vocational agriculture and home economics. This came as the result of the adoption by Congress of the well known Smith-



A modern Missouri consolidated school which serves both town and country children. Since 1948, by the votes of local people, the number of rural school districts has been reduced almost one-half. (Courtesy of Missouri State Department of Education.)

Hughes Act in 1917, which set up certain government funds for this purpose, provided the states would supply equal amounts. This work has gone forward rapidly and of the 652 high schools in Missouri in the year 1949-50, 222 were teaching vocational agriculture and 263 were teaching vocational home economics. At this time over 10,000 boys were enrolled in the agricultural courses and over 15,000 girls in the home economics courses.

The type of work given in these vocational courses in the high schools is to a large extent based on projects on the farms or in the homes of the pupils, so that it is quite practical. It is believed that as time goes on most of the young men who take up farming and most of the young women who become homemakers on the farms of the state, will have had the opportunity of taking this vocational training.

The rural youth of Missouri who do not have the opportunity of attending a high school in which the vocational courses in agriculture are given, still have an opportunity to study about agriculture in the rural schools. As these young people know, this work is given in the seventh and eighth grades and it includes much material about the farm and farm home, which is helpful to them.

The College of Agriculture, A Very Important Factor

There is a college of agriculture in every state of the Union. The Morrill Act of Congress, which provided for establishing these colleges, was signed by President Lincoln in 1862. However, their early growth was slow. It

was found that the teachers did not have enough new farm information. As a result, the agricultural experiment stations were founded in 1887 by the passage of a bill written by Wm. H. Hatch, a Missouri Congressman. The original purpose of these stations was to discover new facts regarding the production of crops and farm animals that would be of value to farmers. Later the work was widened to include studies of a great variety of problems which a farmer must meet.

As new information was gathered by the experiment station workers it was realized that this was not getting out to the farmers as it should. As a result, in 1914, Congress passed what is known as the Smith-Lever Act providing for agricultural extension services within the colleges of agriculture. The purpose of the extension services is to take to the farms the new ideas worked out by the experiment stations so that the farmers may use them. Practically every county in the country now has at least one agricultural agent representing the college of agriculture and many counties have women representatives, or home agents.

The colleges of agriculture have a third purpose, that of teaching the students who come to them. The courses required of these students prepare them for farming and for work in the experiment stations and the agricultural extension services. These students are also prepared for teaching vocational agriculture and home economics in high schools, and for work



A view of a part of the campus of an agricultural college. This picture is from the Missouri College of Agriculture, which, like those in other states, leads in supplying the latest information regarding improved farming.

with many businesses dealing with agriculture. Young men with such training not only have opportunities on farms but in a great variety of other lines of work connected with agriculture. It's remarkable how many different things are now included in the agricultural field.

Agricultural Experiment Stations Have Had Much Influence

The scientists at the agricultural experiment stations use their knowledge of physics, chemistry, mathematics, botany, and other sciences in

studying the problems of the farmers. At the Missouri station these scientists are working on more than a hundred different problems, many of them suggested by the farmers themselves. As the farmers make use of the discoveries of these men, great advances are made in farming methods. It is easy to understand how little the country could have accomplished in meeting the tremendous demands for food during the war periods and thereafter, if it had not been for the agricultural experiment stations. Their



Sanborn Experiment Field at the Missouri Agricultural Experiment Station where trials with systems of cropping, manuring and fertilization, have been carried on for over sixty years. Some most remarkable results have been secured.

work has been the basis for most of the great changes in agricultural production during the past fifty years. This is something to think about.

Agricultural Extension Services Are Helping Many Farm People

If you go to your county seat and ask for the county agricultural agent (or county extension agent, as he is more properly called) you would have no trouble finding his office. You may not be able to find him in his headquarters as he spends much of his time out on the farms or in holding farmers meetings; but both the country and town people know about his work. If you should ask the women of the town about the home agent

you would find that many of them are acquainted with the work she is doing also. She knows the new things about the home which interest farm women and town women, too. As the agricultural agent works with farm men, the home agent works directly with the farm women in their houses, their clubs, or in women's meetings, although she sometimes works with the town women, also.

It can be understood that the lives of the county men and women agents are very busy ones. They are carrying new ideas to the farm people in a multitude of ways, and their efforts have helped greatly in bringing about the recent remarkable developments



A county agent and a home agent assist a farmer and his wife in making plans for the management of their farm and for the improvement of their farm house.

on the farms and in the farm homes. These agents are fine people to know.

Other Educational Aids to Farmers

The elementary schools, the high schools, and the colleges of agriculture in a state, are not the only means of bringing agricultural information to farm people. While the college is the source of most of the new farm information, as printed in many bulletins and circulars and used by the extension service, there are various other means of bringing these new ideas to farmers.

The agricultural papers, the daily papers, and the local or county papers all carry much farm news. These publications have a great influence on farm people. Many farmers depend on them as their main sources of new information. The county and home agents use the local and county papers

constantly in bringing material directly to the people.

In recent years, the radio has had an important influence in spreading new ideas among farmers. Surveys of Missouri farm homes show that over 80 per cent have radios. They depend on them for much of their information regarding markets, weather, farm news and new farm information of many kinds. The radio is therefore of great value in keeping farm people informed.

More recently, television has come into use for bringing new farm ideas to the people. Properly used, this undoubtedly has a great future for education. As the use of television sets becomes more widespread these may be of very great value to farm people, not only for entertainment, but for spreading advanced ideas regarding

the farming business. It may be that in the next few years farmers can sit down almost any noon or evening to watch and hear a televised transcription of a farm demonstration, a farmers' meeting, or a cattle sale, somewhere in the country. That would be a most interesting development.

Balanced Farming System Leads to Better Living

In Missouri, there has been developed, through the activities of the Agricultural Extension Service, what is known as a balanced farming system. Such a system brings together on a single farm all of those good farm practices which make for better farming and better living. It includes first, those practices which are necessary to soil improvement and soil conservation. Second, it makes use of those systems of cropping which provide an abundance of the proper feeds for the kinds and numbers of animals kept, and often one or more crops for sale. Third, it sets up a detailed farm plan, including a system of organization and management, which insures the greatest profits from the land. Fourth, it makes use of a reasonable portion of the profits for the improvement of the farm home, including the necessary labor saving equipment for the farm wife. Last, but by no means least, it provides for the education of the children, for contributions to the church and other worthwhile organizations and for planned educational and recreational programs for the entire family.

In Missouri at this time more than 21,000 farmers are following balanced farming plans in various stages of development. The Missouri Agricultural Extension Service is known the country over for the balanced farming systems which it has developed. This is one of the most far-reaching educational programs which has ever been worked out for assisting farm people in their efforts toward improvement.

State and National Governments Aid in Agricultural Progress

Mention has been made of the work of the state agricultural colleges as it has affected the agricultural development in this country. There are, however, other agencies in both the state and national governments which have an influence on agriculture. A few of the more important of these should be mentioned.

State Agencies

Practically every state has a department or division of agriculture which serves the farmers. In Missouri this department is responsible for the enforcement of certain agricultural laws such as those dealing with the control of animal diseases, the sale of seeds, the control of bad insects, and the marketing of certain agricultural products, along with other duties.

Another example of a Missouri state agency in which farmers are interested is the Conservation Commission, which has to do with the conservation of forests and wildlife. This agency is doing very important work in improving forests and in conserving wild

animals and plants of value to farmers.

These are two examples of helpful state organizations which are assisting in the development of agriculture. Of course there are others.

National Agencies

A national department of agriculture was established in Washington in 1862. Its purpose was to work with the states for the improvement of agriculture. During the last 25 years, in particular, its work has expanded enormously. It now covers almost every phase of agriculture and it is of much assistance to farm people.

Rather recently there has been set up, under the department, what are known as *action agencies* dealing directly with farmers, and in which very large sums of money are being expended. The oldest of these is what was formerly known as the Triple A, now known as PMA, or the Production and Marketing Administration. The early plan for this agency was to control crop surpluses during the depression days of the thirties. More recently, it has provided funds to farmers for assisting in soil conservation practices, as well as for certain supporting prices on farm products.

Another action agency is the Farmers Home Administration, the purpose of which is to assist needy, but worthy farmers, by providing small loans for them. These loans are made for the purchase of small farms and supplying certain immediate needs in their farm operations such as for machinery, seeds or fertilizers.

There is another agency that should be mentioned, the Soil Conservation

Service, which has been authorized by Congress to spend considerable sums of money in hastening the adoption of soil conservation practices among the farmers. This agency works through soil districts which are organized by farmers for soil conservation purposes.

Government Price Supports Stabilize Production

Farmers have always been at a disadvantage when they sell at wholesale and buy at retail prices. It was for this reason, and also for the purpose of increasing production during wartime, that the government has attempted, under the PMA, to maintain or support prices on important farm products. This is a matter which has caused great differences of opinion both in and out of Congress, but if farm production is to be maintained at a high level some such plan may be necessary. Certainly such a proposal would have been beyond the imagination of our forefathers.

Government Activities Aid Agricultural Development

There is little doubt that a good deal of the progress made by agriculture has been due to government aids, originating mainly through war's demands or the effect of wars. If the increasing numbers of people in the nation are properly fed the farmer must work with high efficiency. In order to bring this about the prices he receives must be in fair balance with those he pays. It is probable, therefore, that some direct aids from government sources will be continued for some time to come. However, the independence and well-being of farm

people demand that they help themselves to the utmost, rather than depend upon outside assistance.

Farmers Are Doing Much To Help Themselves

In earlier days each farmer was almost completely dependent on his own efforts. However, as agriculture advanced they worked more and more together. As they built larger barns, for instance, the farmers of a neighborhood came together at barn raisings. Together they put up the frame of a large barn in a day; or it may have been a house. Likewise, they worked together at grain threshing time, at butchering time and later at silo-filling time. Finally, because of the increasing complexity of agriculture, they developed permanent community, and later statewide organizations with thousands of members. One

of the principal objectives of these farm organizations is to improve buying and selling conditions through cooperative efforts, so that many of them have come to be known as farm cooperatives, or co-ops. Such cooperative groups are able to secure better prices for the products they have to sell and somewhat lower prices on the things they buy. These various state farm organizations have now bound themselves together into national organizations which are having a very great influence on the developments in agriculture.

The Broader Influences Of Farm Organizations

As the farmers of the country work together in organizations they develop many activities. One of the most important has to do with the welfare of agriculture at the hands of state



A building providing offices with adjoining warehouse space for a farmers' cooperative association. These have sprung up in great numbers throughout Missouri and many other states. (Courtesy of Missouri Farmers Association).

legislatures and Congress. As farm people have come to be greatly outnumbered by the people in towns and cities, there are fewer farmers in our legislatures and in Congress. As a result the laws which are passed may favor city people and be to the disadvantage of farm people. The farm organizations have therefore undertaken to protect the rights of farmers in such matters. Their representatives appear before legislative and congressional committees to speak for agriculture. In this effort they have had considerable success in securing the passage of laws which are fair to agriculture as well as to industry and labor.

Another activity of farm organizations has to do with education and recreation among country people. Their meetings usually include educational and entertainment features as well as business. The large farm organizations emphasize these things in their programs.

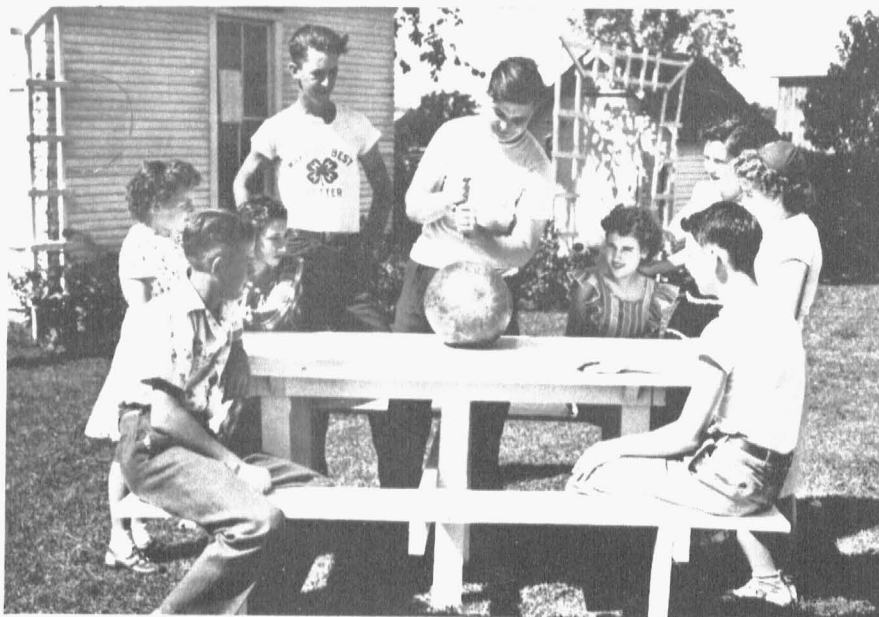
It is certainly a long step from the individual efforts of our forefathers to the cooperative efforts of the great farm organizations of today. While there are very many of these organizations now in existence, those of important national standing are the National Grange, the American Farm Bureau Federation, The Farmers Educational and Cooperative Union, and the National Council of Cooperatives. The total membership in these farm organizations is very large. In Missouri alone the farmer memberships in these four organizations is about 150,000 representing two-thirds of the farms of the state.

Farm Women's Organizations

One of the interesting things about the various farm organizations is the part the women play. In most cases the organizations have special divisions and programs for women. In other cases the women have their own organizations. In some cases farm women's clubs are organized quite separate from farm organizations. Special examples of such clubs are those carried on as a part of the program of the Missouri Agricultural Extension Service. The home agents use these clubs as centers for bringing to farm women the new ideas regarding foods, clothing, and household improvements. There are now 2500 such clubs in Missouri with an enrollment of over 45,000 women. The Missouri Farmers' Association has assisted in the organization of similar women's clubs, with an enrollment of around 5000, while the other farm organizations also have branches for women. No exact figures are available as to the numbers in all these women's organizations and clubs but it is estimated that about one-fifth of the farm women in Missouri are included. These groups are having a powerful influence in bettering the conditions among the farm women of the state.

Farm Youth Organizations

Not to be outdone by their elders, farm boys and girls have been organizing too. In Missouri there are the 4-H clubs of the Agricultural Extension Service, the Junior Farmers of the Missouri Farmers Association, the Nature Knights of the Missouri Conservation Commission, the Future



A group of 4-H boys and girls who after their regular work and business meeting are cutting a melon. The recreation periods of the 4-H clubs are very important parts of their program.

Farmers and the Future Homemakers of the high schools teaching vocational agriculture and home economics. The number enrolled in these organizations totals about 40,000. Under local adult leaders, these young people work on farm and home projects of many kinds. They are also taught the essentials of healthful living, care of the home, honesty, and everyday courtesies. These organizations bring to farm boys and girls some of the most worthwhile things in life. Their development is one of the most encouraging signs of the times. No such organizations were known a half century ago.

What the Future May Hold

Future changes in agriculture, as in other fields, will depend upon many conditions. In this age of uncertainty

regarding our relations with other nations, it is not easy to predict future developments in agriculture. However, if national and international conditions do not interfere too greatly, and if farm people continue to enjoy reasonable prosperity, the future is bright. There may be much further advancement made in soil management, in crop and animal production, in farm machines, in farm buildings and equipment, in farm management, and in the economic, social and spiritual well-being of farm people.

Possible Farm Developments Of The Next Seventy-five Years

As a matter of interest it might be well to think of some of the agricultural developments that may take place during the next seventy-five or eighty years. They may be far greater

than those of the same period just passed. Here are some of the things that might happen during that time. There may be many others, quite unpredictable.

An increase in crop yields to double, or more than double, those of today.

New types of soil treatment, including the use of much nitrogen fertilizer that will not only increase yields greatly but improve the feeding value of crops and supply very large amounts of organic matter to the soil.

The introduction of new crops from foreign countries which will greatly influence our cropping systems.

The use of new types of farm implements that will pulverize the soil to a depth of twelve to fifteen inches, working into it large amounts of organic matter until almost the equivalent of a deep, new topsoil is formed.

Systems of pasture fertilization and management that will increase pasture yields to three or four times those of the average pasture of today.

Improved methods of handling and storing chopped green grass and forage crops which will provide feed similar to abundant green pasture the year around.

Harvesting many types of younger forest trees, when they are only six to ten inches in diameter and pulping them for making artificial lumber, plastics and papers, instead of growing the trees for fifty years for producing saw timber.

A wide-spread use of irrigation in the Cornbelt, wherever sufficient

water can be secured from streams, deep wells or large ponds.

The complete eradication of most animal disease instead of partially controlling them as at present.

The development of new methods of controlling, or even eradicating, most pernicious weeds and injurious insects, until they will no longer cause serious losses to farmers.

A great increase in air transportation of farm products and supplies.

The use of different kinds of farm produce, either on the farms, or in industrial plants in rural towns, for the manufacture of varied commercial products, many of which are unknown today.

An increase in the numbers of small family-size farms in Missouri, devoted to the production of dairy and poultry products, fruits and vegetables for meeting the needs of the increased numbers of people in the rural manufacturing towns.

The use of atomic energy in scores of farm and household operations which our imaginations cannot picture today.

Some of the above statements may seem fantastic but they are not as much so as some of the predictions of our present developments would have seemed to our grandfathers.

Improving the Lives of Rural People

The suggestions just made have to do with the possible material developments affecting agriculture in future years. However, though many of these offer improvement in the economic conditions of farmers, they do not

provide for the social and spiritual welfare of country people. Actually, the great agricultural advances which have been made during the last seventy-five years, with all the accompanying gadgets, have tended to overshadow the things of the mind and spirit.

Fortunately, the improvements in farming methods and the greatly increased use of labor saving equipment, are giving farm people more leisure time than they have had before. This offers opportunities for a fuller development of their minds, the social

relations with their neighbors, and their religious lives. Along with this should come a better understanding of national and international problems and the conditions of farm people in other countries. Already, under the developments which have been made, some of our farm people are visiting foreign countries to learn of their agriculture, while representatives of foreign farm families are coming to this country to learn how we farm. Probably the greatest single reason for the threats of war in the world is the extreme need of food among



Groups like the Home Economics Club shown here help provide more of the good things of life for our farm families.

great masses of people, especially in some Asiatic countries. This is something that our own farmers should consider.

The means of developing the better things in the lives of farm people are quite within their reach. The public schools, and other educational institutions and agencies, the libraries, the churches, and the farmers' own organizations, all offer assistance in bringing these things to our farm families in fuller measure. It is evident that progress is being made and these may be the most important and far reaching farm developments in the years ahead. Without them we may be in real danger of losing the freedoms of the Christian democracy for which

our forefathers fought. American farmers have always been stable, patriotic citizens and they have had a most important influence for good in our type of government. With a growing understanding of our complex problems they can be depended upon to render good judgments in the future. It is certainly of vital importance that future changes in agriculture provide for a well-rounded development in all those things which affect the social and spiritual lives of farm people, as well as for those which determine their economic welfare. It is of much importance that the young people on our farms appreciate the significance of these things.

RECENT CHANGES IN AGRICULTURE

May 1956

This publication is a reprint of Missouri Agricultural Experiment Station Bulletin 560 entitled, *The Changing Conditions of Rural Life*, issued in 1951. Since that time agriculture has continued to change but this has not been such as to require any great modifications in the material contained in the original bulletin. However, attention is called to certain statements that are not up to date.

On pages 8 and 9 there is a discussion of the increased farm income up to 1951 when the bulletin was published. Since that time farm prices have declined an average of about one-fourth, which has meant a sharp decrease in farm income. While the more efficient farmers are continuing to make fair returns, the amount of the net income has gone down. The less efficient farmers are securing low incomes, although a good many, particularly those with small farms, are receiving some income for work off the farm.

On page 11 it is pointed out that the census of 1950 showed 16½ percent of the people of the United States on farms. At present, this figure is down to 13½ percent. Along with this decline in the number of farms, the average size of farm has increased. In Missouri the average size of farm was 152.7 acres in 1950 while in 1955 it was 169.6 acres.

On page 14 it is stated that about two-thirds of the county agents' offices in Missouri had soil testing laboratories. In the last five years the number has increased until 98 of the 114 counties of the state have these.

On page 31 mention is made that 21,000 Missouri farmers are "following balanced farming plans in various stages of development." This number has increased to about 30,000.

On page 32, under National Agricultural Agencies, reference is made to the original Triple A organization of the United States Department of Agriculture, which was later called P M A. This organization is now known as A S C, the Agricultural Stabilization and Conservation agency.