THE KEY TO SUCCESSFUL FARMING

PRICE FIFTY CENTS

1912

By JOHN KASMEIER, Farmer
SHAWNEE, OKLA.
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FRONTISPICE—Shows products of Mr. Kasneider's farm during the past dry, hot season. It will be noted that five of the sweet potatoes behind the yard stick, are over three feet long.
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INTRODUCTORY

On an upland farm one mile west of Shawnee, Oklahoma, John Kasmeier has been raising, corn, cotton, sweet and Irish potatoes, tomatoes and various other products of the soil, for the past eight years. He has been exceptionally successful in his work, producing more per acre and of better quality than his neighbors or those who cultivated bottom farms. This has been due to his careful study of plant culture, experimenting and the use of sound theories scientifically and practically applied.

Mr. Kasmeier's study has been directed toward raising more products of better quality per acre under whatever conditions, and he has been more than moderately successful, as is shown by the fact that during the past three years, when the weather has been exceedingly dry and upland farms failed to yield more than very meager crops, while bottom farms produced not more than a quarter of a crop, he has invariably had a bounteous harvest of all crops except corn, which was killed by the hot winds, which struck it while in tassel and silk.

The soil of Mr. Kasmeier's farm is a yellow, sandy loam, with a yellow clay subsoil—not generally considered good farming land. Upon this land, however, by the application of his method of farming, he has raised a bale to a bale and a half of cotton to the acre, increasing not only the quantity but also the quality. He increased the production of corn from 20 bushels to 155 bushels to the acre; potatoes from 40 to 300 bushels, first crop, and 200 bushels second crop. During the past year he produced 220 bushels of tomatoes per acre; 150 bushels sweet potatoes per acre, the sweet potatoes being planted on ground from which had been harvested two tons of wheat hay per acre; 30 bushels of good marketable Irish potatoes, though there was no rain in May; 30 bushels of Kaffir corn seed; but no corn, as it was killed by the hot winds, and no system of farming will save corn struck by the hot winds while in tassel and silk.

His greatest success during the past dry season was, however, in the production of cotton. He raised an average of 2,000 pounds of seed cotton per acre, which yielded 39.2 per cent lint, making
about 784 pounds of lint to the acre. He received a premium price for his cotton, on account of its excellent quality.

The success that Mr. Kasmeier has made in producing large crops under unfavorable conditions has aroused great interest in his methods among the farmers, bankers and business men generally of Shawnee and vicinity, and also agricultural experts throughout the state, who have made many trips to his farm and it is upon the earnest request of these men that Mr. Kasmeier has reduced his theory and methods to book form, so that it may be available to everybody. In this work he sets forth his system of farming in both very wet and very dry seasons. His system has stood the test of a number of years in widely varying soils and under very diverse climatic conditions.

Farming is a science, and as such has been studied by Mr. Kasmeier just as any other science should be studied. He has experimented, taking into consideration old methods, new methods now being taught, and methods that his own experience has taught him. All of his investigation and experience has shown him that there are four elements essential to successful farming, viz, preservation of the rainfall and moisture; fertilizing; subsoiling; and care of the plant roots. These essentials as practiced by Mr. Kasmeier, he sets forth in this work.
CHAPTER 1.

Preservation of Rainfall and Moisture.

Too much cannot be said of the importance of conserving the rainfall in all sections of the country where corn and cotton are raised. If we stop to consider that we have a rainfall averaging 30 to 50 inches annually, we will realize that we have sufficient water to raise the average crop, if the rainfall is properly distributed throughout the growing season, or can be conserved so that the moisture will be within reach of the growing crops when needed.

Usually considerable rain falls during the winter. Unless this can be retained in the soil, it is of no benefit to the crops of the succeeding summer when the rainfall is meager.

By my method of preparing the ground in the fall with storage furrows to catch the water and hold it till needed, sufficient moisture can be conserved from the winter rains to make a good crop in the driest summer. We usually, even in the driest summers, get one or more rains. One good rain, under my method of farming, as hereafter explained, is sufficient to mature the crop.

It frequently occurs during the growing season that the farmers cry for rain to save their crops. A good hard rain comes, and then they say that the rain did more harm than good, the ground being wet only a couple of inches deep, the greater part of the rain running off, leaving the field to become a steaming bed, when the hot sun comes out, to wilt and scald the plants. As a matter of fact, if the soil had been prepared according to my method, the rain would all have been caught and stored, and would have been sufficient to insure a bumper crop. When not properly prepared to retain the water the soil is wet for only a slight distance below the surface. Below this is the dry earth. The hot sun, acting upon this combination, causes a hot steam to arise, ruining the crop, not only wilting the plants but penetrating to the roots. If the soil is wet deep, as it should be if the proper preparation is made, such results are not seen. This is seen in the case of slow rains, falling for several hours. The slowness with which they fall allows the moisture to penetrate to the sub-moisture, cooling the roots of the plant as well as the portion above the surface and having a beneficial effect. My method of holding a heavy rainfall and allowing it to soak in, makes the sudden heavy shower the same as a slow rain, in its effect upon a growing crop. These sudden showers generally last not longer than thirty to sixty minutes, hence the necessity of having the furrows arranged to take care of the water, and prevent its running off.

On about the 17th day of June, 1911, three to four inches of rain fell in two hours. My fields had been prepared for such a
rain. Ten hours after the rain my cotton and tomato patches looked like big lakes, while fourteen hours after the rain there was still water standing in the fields. The next day I examined my field and found that the soil was thoroughly soaked clear to the subsoil. A similar examination made in my neighbor's field adjoining, where no preparation had been made for retaining such a rainfall, showed that the soil had been wet for a depth of not more than two or three inches. The next rain fell July 19th. My field had again been prepared to hold the rainfall with the result that I produced approximately a bale and a half of cotton to the acre. My neighbor produced between 300 and 400 pounds seed cotton per acre on the same kind of land. The topography of both farms being approximately the same. These two rainfalls and what

![Figure 1](image-url) — Shows the method of constructing small dams across the subsoil furrows as soon as laid off. They retain the water of sudden heavy rains and permit it to soak in instead of running off. The dams are made by lifting the plow at intervals of five to ten feet, according to the slope of the ground, leaving the soil that has accumulated in front of the plow. In wet seasons the furrows may be opened up again to drain the land.

moisture I had preserved the previous year, made my heavy yields. It is a well known fact that generally other fields had no submoisture or season in the ground at planting time in the year of 1911.

The principal upon which I work for the preservation of moisture is the preparation of deep furrows in the subsoil, which in the process of putting in the crop are covered with loose earth. These
furrows are in consequence made storage reservoirs, holding the moisture against evaporation until the furrows are penetrated by the plant roots. To get as much good as possible from all rains, I construct dams at intervals across the furrows in the cultivated soil which keep the water of a sudden shower from running off,—the dams holding it until it sinks in, clear to the submoisture. These methods as applied to different crops are fully explained in the succeeding chapters. The writer considers this one of his greatest discoveries.

CHAPTER II.

Subsoiling.

SUBSOILING has a three-fold use. First, it supplies a loose bed in which the plant roots can spread in search of moisture and nourishment, which are stored there by methods described elsewhere in this work. Second, by breaking up the hard ground, it allows the water to penetrate and bring' into the loose soil the natural fertility that would otherwise be locked there in such a form as to be of little or no use in raising a crop. Third, the subsoil furrows, while in dry times acting as storage reservoirs, in wet seasons act as drains, drawing off the surplus water that would
FIGURE 3—Depicts the subsoiler being run in the lister furrows.

FIGURE 4—Another view of cotton roots running along near the surface and entering subsoil furrow. Mr. Kasmeier is explaining to his son the theory of scientific farming. He is a strong advocate of teaching the young generation advanced ideas of scientific agriculture.
otherwise be held by the solid earth to stagnate about the roots of the plants.

Although not so necessary on rich bottom land, subsoiling is of great service on any kind of land, and work spent with a subsoil plow will always be well repaid.

The method of subsoiling the ground should be used in the preparation of the soil for all crops, grain, gardens, orchards and forests, vineyards, alfalfa and in fact all products of the soil.

To more clearly illustrate the effect of subsoiling upon plant growth, it is often noticed, the prolific growth of crops, grass or other vegetation at places where old ditches have been covered up, or where stumps have been removed, or at any place where the soil has been disturbed to any great depth.

The subsoiling should be as deep as possible,—the deeper the better. Don't be afraid of going too deep. The subsoiling is accomplished very successfully with a Georgia stock, using a bull-tongue, or with a potato digger, with the outside prongs removed.

The special methods of subsoiling for the different crops are given in the succeeding chapters.

CHAPTER III.

Fertilizing.

There is no money spent on a farm which brings greater returns than that spent in fertilizing the land. My favorite artificial fertilizers are cotton seed hulls and meal, with hydrated lime. This combination seems to be about what the soil of our great southern country needs.

Before going further into this subject, I will suggest that if the methods I detail appear too expensive for general use, they be tried first on a single acre. The yield from this acre, in excess of what would have been made without the treatment prescribed, will pay for the necessary fertilizer for several acres the next year, and by the third year, the farmer should be so thoroughly convinced of the value of the method that he will consider the purchase of fertilizer in generous quantities not an experiment but an investment.

There are, of course, other valuable fertilizers which go to waste on almost every farm, such as barnyard manure, wood ashes, rotten wood, leaves, etc. All such should be saved and applied to the land. Besides enriching the soil it makes it much easier to cultivate and prepare for moisture-storing. When a wood lot is cleared, if the ashes are saved and kept dry until they can be applied to a cultivated field, they will bring sufficient return to pay for the clearing.

Of course the best fertilizer of any kind is barnyard manure, as it contains the necessary phosphates and other chemicals needed
to promote plant growth and development, and mature the fruit.

In order that the reader may be fully advised as to the methods employed in fertilizing, the subject will be first taken up in a general way; that is, the methods of applying fertilizers for any kind of crop, will be first outlined, and then the special methods for the different kinds of crops will be taken up separately.

Barn-yard manure, when it is available in sufficient quantities, should be spread broadcast before the ground is broken in the fall or early winter, so that it may be thoroughly mixed with the soil in the process of cultivation, and its strength may be distributed by the water percolating through the soil.

FIGURE 5—Shows the method of applying lime and cotton seed meal or hulls. These are my favorite fertilizers, and have brought me wonderful results. The meal and hulls with the lime, if required, are scattered with a regular spreader. If manure is used, the subsoiler is run through the furrow again before the plant rows are made between the subsoil furrows.

Artificial fertilizers are always applied cheapest and with best results in furrows, the plan for the different crops being described in detail later.

Barnyard manure when spread broadcast over the ground, should be applied in the fall or early winter, at least sixty to ninety days before seeding. It should be immediately turned under, before it has time to dry out and lose its strength. The land should be turned to a depth of eight to ten inches, and while
the plowing is being done, the subsoiler should be run behind the plow in each furrow.

Where there is a scanty supply of barnyard manure, the ground should be turned in the same manner, and then lister furrows opened up. The manure is then applied in the lister furrows, and then the subsoiler is used in these lister furrows, thoroughly mixing the fertilizer with the soil. If the subsoiling does not fully cover the manure, it should be run around with a bull tongue, small plow or cultivator, and thoroughly covered.

If artificial fertilizers are used, or cotton seed meal, it should be applied in the lister furrows after it has been subsoiled, just before planting time. Here it is covered up by the opening of the plant rows.

In fertilizing it is first necessary to have an analysis made of the soil to ascertain what chemicals are needed. This information can be secured by sending samples of the soil to your nearest experiment station. After it is ascertained what chemical your soil lacks, my method is to use the necessary chemical mixed with cotton seed meal. As much cotton seed meal can be used as desired, the more the better. No matter what the amount of cotton seed meal used, I find it always advisable to use 600 to 800 pounds of phosphate per acre. However, this may vary for the different qualities of soil. The foregoing applies to any and all crops.

My method of applying the fertilizer for cotton is to use about four sacks of meal mixed with the amount of chemicals required per acre. This is distributed with a fertilizing machine in the subsoil furrow hereafter described, three to four inches deep, from fifteen to thirty days before planting time. At planting time, when the lister furrows are opened up to receive the seed, the opening up of these furrows will partly cover up the subsoil furrow containing the fertilizer. The fertilizer should remain undisturbed in the lister furrow until after the cotton plant is four to six inches high, or until it has been worked with the harrow or weeder three or four times. Then the fertilizer is thoroughly stirred with a Georgia stock, using a bull tongue six to eight inches wide and about fourteen inches long. This subsoil or fertilizer furrow should be opened or stirred after every cultivation of the cotton, until it is found that the spreader roots have begun to find their way into the subsoil furrow. After this do not disturb it any more.

In case cotton is planted flat or upon a bed, the fertilizer or subsoil furrow will be entirely covered up as soon as the cotton is worked by harrowing or weeding. The same operation of stirring should be applied to cotton planted in this manner as when it is planted in the bottom of the lister furrow as heretofore described.
The plain cotton seed meal is also used with the planter at the time cotton is planted, the usual combination planter and fertilizer machine being used in this work. The writer finds that it is exceptionally desirable to mix with the cotton seed meal an equal part of dry sand. The using of sand not only causes the fertilizer to work better in the planter, causing a more even distribution of the fertilizer, but in soil containing very little sand, the sand so used in the fertilizer makes a good moisture preserver. About one sack of meal per acre is used in this manner. However, as much meal as desired can be used in the plant rows. I have found it undesirable to use any chemicals or other kind of fertilizer under the plant row of cotton at planting time, except cotton seed meal. Chemical fertilizers of various kinds should be constantly stirred in order that they may be thus distributed through the soil. If such fertilizers are placed under the plant rows it is impossible to properly stir them, and it is often found that a fertilizer when used in this manner has never distributed itself through the soil, but lay there undisturbed and was of no use to the plant, as the roots went on through the fertilizer bed into the unfertilized soil. Only enough meal should be used in the

FIGURE 6—Shows the plant rows being opened at seeding time, with a lister. The opening of this row covers the subsoil furrow, with its fertilizers and stored moisture. No subsoiler is run through this furrow for cotton, but for corn, potatoes, tomatoes, etc., the subsoiler is again used, the plant row being prepared in the same way as the subsoil furrow heretofore described.
plant row to give the plant a healthy start. After the plant has attained a few weeks' rapid growth, caused by this fertilizer in the plant row, the roots will extend out and enter the subsoil furrow containing the thoroughly mixed fertilizer. It will be readily understood that by applying this method the fertilizer is put where it is reached by the ends of the roots which absorb by far the greatest proportion of the nourishment for the plant, instead of putting it in such a position that the roots pass through the fertilizer into the unfertilized ground beyond. This also applies to all other crops.

Where cotton seed meal or any chemical fertilizers are used, they may be applied in subsoil furrows between rows, either before or after crops have been planted, but not to be applied after the roots begin to enter the subsoil furrows. As heretofore described, the fertilizer should be stirred after each cultivating.

It is deemed best, however, to apply the fertilizers before planting time, but it is often the case the farmer is behind with his work, and has not the time to apply fertilizers beforehand. Satisfactory results can be obtained by applying after planting.

If barnyard manure is used as a fertilizer it should be distributed in the lister furrow before subsoiling. The running of the subsoiler through the lister furrow after the manure has been placed in the furrow will thoroughly mix and have a tendency to cover it. By fertilizing in this manner only one-half the usual amount of manure is required. If lime is used it should be placed with the manure in the same furrow and mixed at the time of the subsoiling which thoroughly mixes the manure, lime and earth together. When barnyard manure is used in this manner it should be applied as early as possible, and in any event should not be applied less than thirty days before planting time. This likewise applies to all other crops.

The following is an old German method of making and preserving manure which is found to be extremely useful, as follows:

Cess pools are dug near the barns, and also ditches leading from the barnyard to the cess pools, so that all liquids from the yards will be drawn into the pools and retained. The cess pools should be cemented to hold water. Dry manure is thrown into the pools, where it is allowed to remain until desired for use. This is done in order to keep the manure so wet it will not heat and burn from dryness.

The writer cannot too highly recommend the use of barnyard manure as a fertilizer, because of the fact that it is not necessary to apply as much phosphate when it is used, as barnyard manure preserved according to the method just described possesses and retains all the elements necessary to promote plant growth. However, it is much better to use 600 to 800 pounds of
rock phosphates per acre; the more manure used, the less phosphates required.

A valuable method of fertilizing where land is plentiful, is to sow cow peas, wheat, rye, oats, etc., and turn under just before the crop begins to mature. The writer has increased his production of corn from twenty to sixty bushels per acre by this method.

_used of Phosphates._

If the growth of your cotton stalk is excessive and does not produce a good yield, use from 800 to 1000 pounds of phosphates to the acre. How do I know that it takes 800 to 1000 pounds of phosphates? Because experience has shown me it takes 150 loads of manure, and that amount of manure contains 800 to 1000 pounds of phosphates.

Had I had a little more rain the past season I would have increased my yield of cotton per acre to double what it was. Instead of raising 2300 pounds I would have raised close to 5000 pounds per acre. I fully believe that the time will come when we will raise four to five bales to the acre, by using my methods of cultivating and fertilizing.

In addition to heat, light, and moisture certain chemical compounds, such as calcium, magnesium, sodium and potassium, are essential to plant growth. These occur in the soil in the form of sulphates, phosphates, nitrates and other soluble compounds, and are absorbed by plants by means of their root hairs, especially the root hairs.

It is readily seen that continual cultivation of the soil will eliminate these essential elements through solution and drainage. This is especially true in regard to the phosphorus and nitrogen.

It is highly essential, then, that this loss be made good through the use of fertilizers. Barnyard manures are especially rich in nitrogen and phosphoruous, which gives them great value as fertilizers.

Cotton seed meal contains a high per cent. of nitrogen, and should be used freely on land that has been cultivated for several years.

Cotton, corn, or any other plant may have a prolific growth, and look healthy, but not produce a good crop of fruit. In such cases the soil is badly in need of one or more of the above elements.

It is a good plan to always use a little lime as it is valuable in exterminating insects.

CHAPTER IV.

_Care of Plant Roots._

It is often noticed by cotton growers that although the cotton plant appears to be flourishing and fruiting well, the early fruit falls off, bushels of them being scattered over the ground, and the cotton is late maturing. This is the result of too deep
cultivation. The feeder roots are cut off by the deep cultivating, as fast as they are formed. Consequently, the young fruit has no means of sustenance, and dies. After the cotton is laid by, new feeder roots, however, put out, and new fruit starts, but it is late, and all of the early crop is lost.

The same is true of corn, potatoes, tomatoes and all other kinds of crops. It has often been noticed by any farmer, while cultivating potatoes, sweet or Irish, that when he reaches the end of a row he has to stop to take the roots off his plow. Now, these

FIGURE 7—Shows how deep cultivation cuts off the feeder roots making the crop of cotton short and late. The figure to the left shows how proper cultivation preserves the roots.

FIGURE 8—Was made after the soil had been carefully removed from the roots of a growing cotton plant. It shows the roots running along close under the surface of the earth and entering the subsoil furrows. They are attracted by the moisture and plant food locked up and preserved in this furrow. The large root on the left of the photo was only an inch and a half beneath the surface at the plant, and ran gradually to the bottom of the subsoil furrow to a depth of about 18 inches. At every place where a soft spot or crack were found, roots penetrated. It can be readily seen that if deep cultivation had been practiced these roots would have been destroyed causing fruit to drop off before maturity.
roots are the very life of the plant. After they are cut off by deep cultivation, if the season is too dry for new roots to start, the crop is largely or entirely lost. But even if new roots do put out, the crop is either late, or else has not time to mature at all.

If you want to raise good crops, you must give your plants a chance to get all the nourishment and moisture possible, and this can be done only by preserving the only means the plant has of securing moisture and nourishment—its roots. Cultivate and save the roots, and the roots will save the plant.

The writer always preserves the plant roots by shallow cultivating after the plant is up and growing, by constantly turning the soil to the plant. Deep plowing being done before planting time.

![Figure 9](image)

**FIGURE 9**—Shows cotton roots entering the subsoil furrow. The stalk at the right was not grown in the spot shown, but had been pulled up and placed there to show the length of the roots. The long root shown was over 7 feet in length. The other stalk was grown in the exact position shown. The picture also shows the heavy yield of cotton.

Referring to figures No. 7 and 8, it can be clearly seen the disastrous effect deep cultivation has upon the growing plant. Roots are the only method the plant has to extract its nourishment from the soil. Therefore it is very plain to be seen that if the roots are destroyed, as shown in figure No. 7, the plant will be greatly retarded in its effort to grow and produce a good crop of fruit. The proper way to cultivate is to carefully guard these roots and continually throw dirt to the plant row; instead of the roots being destroyed they will be protected, and the entire plant will have a
network of small feeder roots running through the soil for several feet around the plant, enabling it to extract any moisture and nourishment which may be in the soil.

By referring back to the preceding chapter, it is noticed the essential chemical compounds necessary to promote plant growth and production. These compounds are not all deposited down deep in the earth, but are mixed thoroughly throughout the cultivated soil. The tap roots extending deep into the subsoil, do not provide the plant with the above chemical compounds. They will, however, provide some moisture, and in most cases will produce a stalk or plant, but will not attract and provide enough of the chemicals to give the necessary vitality to the plant. The roots which attract and take up the chemicals and fertilizer necessary to produce vitality, are the small net-work of fibers and spreader roots, which branch out and run in all directions near the surface. These are the roots which are destroyed by deep cultivation. The small root, which is generally disregarded, is of vital importance and should be preserved and cultivated and not destroyed.

CHAPTER V—Sec. 1.

Preparation of Soil.

COTTON

The secret of my success in raising all kinds of crops lies in the preparation of the soil before seeding, more than in the cultivation of the growing crops. The soil should be cultivated just as thoroughly and with as close attention to detail before planting time as possible.

As cotton is perhaps the most important crop in the consideration of the readers of this little book, I will take up first the raising of cotton as typical of my methods, which apply to almost all crops. To make the method more clear the accompanying diagrams are used.

First, in the late fall or early winter, as soon as the ground

![Figure 10—Shows first breaking of the ground, which should be six to ten inches deep. Plowing should be done in the fall or early winter.](image)

is cleared, it should be broken to a depth of six to eight inches as in Figure 10. It is left lying in this state until spring. After each hard, beating rain, the ground should be harrowed or disked two or three inches deep, to produce a mulch. If not enough rain falls to settle and pack the soil at all, it should be harrowed and
A photo of Mr. Kasmeier's product which was raised in 1911. Notice the large bolls of cotton. In the picture Mr. Kasmeier is pointing to a small stalk of cotton, which produced 13 large bolls. This stalk was grown on unfertilized land, but was cultivated under his methods.

The large stalk on the right has 170 bolls, and was grown on land which had been fertilized with manure and cotton seed meal. These bolls produced a pound of cotton to every 50 bolls.

The corn, Kaffir corn, potatoes and fruit are products of 1911.
then rolled. The purpose of packing the soil is to preserve all of the moisture underlying the mulch.

Thirty days before planting time, furrows should be opened as in figure 11, with a 14 inch lister. These furrows should be four to five feet apart, according to the fertility of the soil. It will be noted that this furrow takes out all of the worked soil to the bottom of the first plowing, or about eight inches. These furrows are opened for two purposes, to allow deeper subsoiling.

![Figure 11](image1)

**FIGURE 11**—Shows method of laying off subsoil furrows, with a 14 inch lister. The lister should run the depth of the first plowing, and the rows should be four to five feet apart, according to the fertility of the soil. The lister furrow should be opened at any time after first plowing.

as shown in figure 12, and to provide a place for putting the fertilizers, as more fully described elsewhere.

The subsoiling should be done, (Figure 12), by running a Georgia stock (or a potato digger with the prongs removed) through the furrows made with the lister. The subsoiling should be carried as deep as possible, in order to preserve all of the moisture derived from any rains. In case fertilizers are used, they should be placed on top of the subsoil furrow about thirty days before planting time. Manure, if used, should be put in the furrow before subsoiling. Thus the subsoil furrow is made a rich moist bed which attracts the roots of the cotton plants, forming a trough from which they may feed.

Just before planting time rows should be opened with a 14 inch lister. These rows are opened half way between the subsoil furrow as in figure 13, and should not be opened until ready to

![Figure 12](image2)

**FIGURE 12**—Shows method of subsoiling. The subsoiler is run in bottom of the lister furrows, as deep as possible. Subsoiling should immediately follow the opening of the lister furrow. Both should be prepared early enough in the winter to catch the winter rains and snow.
plant. The soil is thrown out of these furrows into the subsoil furrows, effectually sealing the moisture and fertilizers in these furrows, where it is found by the spreading roots of the cotton plant. The loose soil above these furrows prevents evaporation of the moisture. In dry seasons, the cotton seed should be planted at the bottom of these new furrows, on the hard ground. After the ground has been turned in fall or winter if hard beating rains should fall and the ground becomes packed, care should be taken

when opening plant rows to not allow the lister to throw all loose soil from the furrow. Enough loose soil should remain in the bottom of furrow to cover seed, care being exercised to see that the seed is planted on hard ground in bottom of row. The method for wet seasons is given elsewhere.

After the plants have begun to grow, the dirt should be filled in around them with a weeder or harrow, as in figure 14. This operation should be repeated until the ground is again level. After

this, start to work with the cultivator, but at no time cutting deeper than 1 to 2 inches, throwing the dirt gradually to the plant.

Shallow cultivation is essential, as it prevents the falling off of the fruit and promotes early maturing of cotton. It preserves the feeder roots, shown in figure 15, (which depicts the cotton as laid by) which are the roots which give the growth to the fruit. Under the old method of cultivating, cutting down to a consider-
able depth, these feeder roots are cut off, while under my method, they are left intact, as shown in figure 7.

Where one-half bale of cotton has been produced per acre under favorable conditions and seasons, the same amount or more can be produced on the same land under unfavorable conditions, without the use of fertilizers, provided the same method of subsoiling, moisture preservation, care of plant roots and cultivation.

FIGURE 15—Shows cotton after laying by. It shows also the formation of the roots near the surface of the ground, running down into the subsoil furrows.

FIGURE 16—Shows Mr. Kasmeier's cotton field, which the past dry season produced 2,000 pounds of seed cotton (784 pounds lint) per acre, the staple being of extra length and fine quality. Note the heavy fruitage. The view was taken before the first picking.
is carried out as set forth in this book. This also applies to all other products.

The writer desires to impress upon the reader the importance of planting cotton seed on the hard soil in the bottom of the furrow, assuming, of course, that the cotton is to be planted in furrows, instead of flat or in beds. It is noticed that when cotton is planted it often fails to make a stand. This is especially true where the soil is dry and there has not been enough rainfall to put a season in the ground, in the winter and early spring. The lint around the cotton seed acts as an insulator, and it takes plenty of moisture to break through this insulation and germinate the seed, causing it to sprout. The hard unworked soil lying underneath the worked ground is always moist, provided, of course,

FIGURE 17—Is a view of Mr. Kasmeyer's cotton field last year, with Mr. Kasmeyer standing in the field. It can be seen that the cotton is shoulder high. The cotton field at the left in an adjoining field produced a total of about 300 pounds of seed cotton to the acre, while Mr. Kasmeyer's field, cultivated according to his method, produced 1163 pounds per acre the first picking. This field was picked over three times, producing a total of 2650 pounds of seed cotton per acre. This view was taken before the first picking.

there is any moisture in the earth at all, and by planting the seed on top of this ground, and covering two or three inches deep, the seed will attract and draw enough moisture from the hard ground

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underneath, to germinate the seed, and will always produce a good stand, providing the seed is good.

As an example to show what the above method will do, the writer planted cotton on the 7th day of June, 1911, on ground where a potato crop had been raised and gathered the same year. The ground was hot, dry and loose, and contained no moisture whatever as deep as it had been worked. After the potatoes were dug, furrows were opened and cotton seed planted on top of the hard unworked ground in the bottom of the furrows. The ground was so dry and loose that it was very hard to open the furrows, as the loose, dry soil would slide back into the furrow, filling it up again behind the plow. The seed was covered two to three inches deep. Neighbors and friends laughed and ridiculed, saying nothing would come up in such ground, but they were entirely mistaken, for in seven days this cotton was up and thriving, and produced a double stand, which was later thinned out. Three days later a good rain fell, washing the loose soil over and completely covering the cotton four to six inches deep. The plant rows and field had been prepared to retain any rainfall. A few days later a small "V" shaped harrow was run over the rows and

FIGURE 18—Shows a party of Shawnee business men inspecting Mr. Kasmieer's fields, and also studying his methods of farming. These men unanimously approve of his system. The picture was taken before the second picking.
the cotton was uncovered. On the 19th of July another rain fell. This field produced 1200 pounds of cotton per acre, and if the frost had not killed the plant, it would have produced at least one bale per acre.

This cotton was thinned out leaving stalks from 14 to 20 inches apart, and one stalk only in a place. In dry seasons especially, care should be taken to leave only one stalk every fourteen to twenty inches on land without fertilizers. On highly fertilized land stalks should be spaced two to three feet apart, depending upon the fertility of the soil. This gives the one stalk a chance to secure all of the moisture and nourishment in the ground around the plant, which will be enough to sustain the plant and mature all the fruit on the stalk. Whereas if two stalks had been allowed to grow where one only should have been, the moisture and plant nourishment existing in the ground would have been divided between the two stalks, with the result that neither would have received enough nourishment to properly make and mature its fruit. Better to have one stalk with a few good large bolls than to have two stalks producing nothing.

**Two Bales per Acre.**

If we want eggs for Christmas, we set our incubators in Jan-
uary, February or March. Chickens hatched then will lay in October, November and December.

So, if you want to raise two bales of cotton to the acre, you must get an early start. Try this method:

First, fertilize and furrow five feet apart, 30 to 60 days before planting time. Use two thousand pounds of cotton seed hulls, three hundred pounds hydrated lime, to the acre. Put your hulls in the lister furrows first, then mix the lime with 200 pounds of fine dry sand and 300 pounds of wood ashes. Mix it all thoroughly. It must be perfectly dry when mixed, so that the fertilizer distributor will distribute it evenly. This mixture should be distributed in the lister furrow, where the hulls have been previously placed. Then take a heavy Georgia stock with a bull tongue from three to four inches wide, and from twelve to fourteen inches long and go through the lister furrow which contains the hulls, lime and ashes, as deep as the team can pull it. Then
with a walking or riding cultivator or Georgia stock, thoroughly cover the fertilizer. Wait until you get a good rain, then with your Georgia stock and bull tongue, go through the fertilizer furrow again, and cover again in the same manner as the first time. Then a week before planting time, about May 1st for the district between the 33rd and 37th parallels, take four hundred pounds of cotton seed meal, 800 to 1000 pounds ground rock phosphate and about 400 pounds of dry sand, mix thoroughly, again open the furrow containing the hulls, lime, sand and ashes, and distribute the cotton seed meal phosphate and sand with the fertilizer distributor in this same furrow, and cover up as before.

This method will make you, on land where you formerly raised about a hundred pounds of seed cotton to the acre, a bale to a bale and a half to the acre; and on land that formerly brought you half a bale to a bale to the acre, two bales to the acre and upwards. Your furrows must be five feet apart, on land that formerly produced a hundred pounds; and on land that produced more than that, three feet apart. The stalks ought to stand in the rows fourteen inches to eighteen inches apart, and one stalk only remember, only one stalk in a place. In the cotton planted with the rows five feet apart, there should be one stalk,—just one stalk and no more, every two feet.

I cannot impress upon the intelligent citizens, farmers and truckers too strongly to save every bit of manure and wood ashes they possibly can. Wood ashes are safest kept in galvanized or other metal containers, and should be kept carefully covered, as ashes for fertilizer should be kept perfectly dry. Whenever you clear an acre of ground and burn up the brush and logs, take the ashes home while they are dry. With that amount of ashes, hulls, lime and meal applied as above to a worn-out acre of ground, you will have two acres instead of one, in amount of product. The only difference of cotton or whatever you plant on the ground being that the worn-out acre will have the best product. So save your ashes and save them while they are dry. Also save rotten logs and decayed leaves. By using such things you will not have to use so much of the hulls. If we all used these methods throughout our great American cotton belt, instead of planting close to forty million acres and getting only from ten to fourteen million bales, half of which is only shoddy cotton for which we get shoddy prices, we would raise from fifteen to twenty million bales of the finest staple on twelve to fifteen million acres of land, and could put the remaining twenty to twenty-five million acres in corn, a few potatoes, sweet potatoes, wheat and feed with which to fatten our hogs, cattle and sheep. If we farmers will do that, we will have our billion dollar cotton crop as money in the bank, and you bet we can live at home and when you young men and women
marry you need not start a poor house. And when you young farmers unite, what a mighty giant you will be! All business will be based upon you and you will then be monarchs indeed.

**Preparing Wet Land for Cotton.**

Figure twenty (20) shows the method of preparing low or wet land for the raising of cotton. The ground is first turned as shown in figure ten (10), then beds or rows are thrown up six to eight feet apart as shown in cut. A subsoiler is run through the middle of the furrow between the rows. These furrows not only provide a moisture preserver and fertilizer bed for dry periods, but in case of too much rain they act as drain ditches to carry away surplus water. Planting should be done on top of these beds. In the case of wet bottom land these beds need not be destroyed, but can be used from year to year for cotton, planting on top of the beds and cultivating as usual, and keeping the subsoil furrows open. This form of beds should be used on high land as well as low land in wet, rainy seasons, instead of the method shown in figure 13.

**Sec. 2.**

**CORN**

In the cultivation of corn, it is very important that the land be carefully prepared, as corn will not stand the hot winds of the south as well as cotton. The writer has secured satisfactory results in raising corn even in dry years when others have failed, by carefully preparing and working the ground before planting in accordance with the following two methods:—
First, where subsoil furrows are used not only between rows but in the plant rows.

Under this method we will consider the raising of corn with and without fertilizers, as follows:

The method of subsoiling and fertilizing where a sufficient amount of manure cannot be obtained to spread broadcast but where manure or chemical fertilizer and cotton seed meal are used is as follows: The ground is turned in the same manner and at the same time as above described, eliminating the use of the subsoiler at the time of the turning. After the ground is turned, lister furrows should be opened as for cotton. If manure is used, it should be spread in this furrow, after which the subsoiler is used. This mixes and turns under the manure. If chemicals and cotton seed meal are used it should be applied in furrows after subsoiling is done or about planting time. When the planting furrow is opened up with the lister, the subsoil furrow containing the fertilizer will be partially or wholly covered up. Before planting, a subsoil furrow is run in the bottom of the plant row as shown in figure 21. This shows the subsoil furrows under the plant row and also between rows. The use of a subsoil furrow in the planting row gives a loose seed bed. It is a good plan to apply cotton seed meal in the planting row after subsoiling.

Where no manure or fertilizers are used the ground should be broken and prepared in the same manner as above, using the same method of subsoiling both in the plant rows and between the rows.

Too much cannot be said regarding the subsoil method, as subsoil furrows are exceedingly valuable not only to retain the moisture but to retain the substance of the fertilizers which is carried down by the percolation of water through the loose, well worked soil. These furrows are especially valuable where the land is rolling and such fertilizing material is liable to be carried out of the soil by water percolation at the time of heavy rains.

Second, where corn is planted flat. Under this method we also consider the raising of corn with or without fertilizers as follows:

Where manure is spread broadcast over the ground, and turned under as more fully described under "Fertilizing," it can be further stated that the subsoiling should be done at the time the ground is turned. At planting time the usual lister furrow between the plant rows is opened up and subsoiled. If artificial fertilizers are to be used they should be used in this furrow as more fully described elsewhere. Before corn is planted, the rows should be laid off with a subsoiler, subsoiling about 14 inches deep. This operation leaves the ground practically flat, after which the corn is
planted four to five inches deep on this subsoil furrow. If cotton seed meal is used in this furrow, it is used with the planter, using the usual attachment.

In raising corn without fertilizers, the usual subsoil furrows are run in the bottom of lister furrows between rows, thirty to sixty days before planting time. At planting time the plant row is also laid off with the subsoiler in the same manner as described above. This subsoiling is done to provide moist beds to receive the corn roots.

![FIGURE 21—Shows the use of the subsoiler in both the plant row itself and in the furrows first opened between the plant rows. This is the method employed in planting corn.](image)

In cultivating the usual harrow is used before the corn comes up, after which cultivation is carried on in the usual methods from three to four inches deep while the corn is still young, continually throwing the dirt to the corn. The cultivation of the corn by this method will cover up the lister furrow between rows containing the moisture. After the corn is four to six inches high, deep cultivation should be discontinued, and the corn should be cultivated to a depth of only one to two inches. The subsoil furrow should be kept open until it is found that the roots of the corn have begun to enter into it, after which it should not be disturbed.

SEC. 3.

**IRISH POTATOES**

In preparing land for Irish potatoes, if manure is to be used broadcast, the land should be prepared and fertilized as described elsewhere. The land should be turned from ten to twelve inches deep and the same method of running the subsoiler behind the turning plow should be used. If the farmer has not the facilities to work his land in this manner, the writer finds it advisable and agreeable to co-operate with his neighbor, one to do the plowing, the other following close behind with the subsoiler. This work should be done as early as possible or at least sixty to ninety days before planting. Another method of fertilizing potato ground is—by placing manure in the lister furrows and running subsoiler at that time. If the ground is prepared in this way, as stated before,
the subsoiler is not used at the time the land is turned. In the case manure is distributed in the subsoil furrow and it is not entirely covered by the subsoiler, a bull tongue should be run around the furrow and the manure fully covered. This is especially necessary if chemicals are used. When potato planting time arrives, the furrow containing the manure or fertilizer should be thoroughly stirred by opening up with a shovel plow or sweep. This also provides a furrow to receive the seed potato. After the potatoes are planted 18 to 20 inches apart, the seed should be covered 5 to 6 inches deep by running around with a bull tongue or small plow. After the potato has sprouted and all danger of frost is past, a light harrow should be run over the top of the row to take about two inches of soil off the top of the plant. Harrowing between rows should be done to keep down weed growth. During cultivation, the soil should be constantly added to the plant by running around the row with a bull tongue. Care should be taken not to disturb or tear up the plant bed. This operation, will, after the plant has reached a good growth, result in forming a bed with a furrow between rows. In case of dry weather and when going through the furrow the last time, or at any time, if conditions become dry and rain is needed, the sweep should be lifted up every five to ten feet, thereby making a small dam across the furrow which will catch and retain any rain which may fall.

Before gathering time the furrows between the rows in which dams have been constructed, should be opened, if rain has been plentiful and the ground is wet, so that the potato beds may dry out as thoroughly as possible, before the crop is gathered.

Sec. 4.

**ALFALFA, WHEAT AND OATS**

In the raising of alfalfa, wheat, oats, etc., a great increase in stand and production can be obtained by carefully preparing the soil, using the same methods employed in preparing soil for cotton, except that every furrow should be subsoiled. Before the seed is planted the land should be turned deep and each furrow subsoiler as deep as possible. This plan provides a vast field of moisture preservers consisting of subsoil furrows which receive the roots and promote growth, which in the case of alfalfa is very essential, the success of the crop depending upon a good stand the first year.

Sec. 5.

**TOMATOES AND SWEET POTATOES**

In the cultivation and raising of tomatoes and sweet potatoes
the writer finds great results by preparing the ground in the same manner as for Irish potatoes and if manure or fertilizer is used this is also applied in the same manner. When planting time arrives the fertilizer or subsoil furrows are opened up in the same manner as for Irish potatoes, after which the fertilized soil is turned back into the same furrow. This is done merely to stir and mix the fertilizer with the soil and forms a rich mellow bed for the plants.

In the planting of tomatoes the subsoil furrow is opened and turned back again as described above. This forms a small rich bed to receive the tomato plants. The same method of constantly turning the soil to the plant is used, forming the same furrows between rows. Small dams should also be constructed between rows as more fully described in other articles, to retain the rainfall. The advantage of these small dams and the subsoil furrow between the plant rows can be readily seen. The water retained by the dams will filter through into the subsoil furrow, which forms a vast bed of moist rich soil for the reception of the plant roots. One or two rains will be sufficient to make a good crop provided care has been exercised to follow the above method.

During the season of 1911, which is known to have been an exceptionally dry year, the writer obtained excellent results in the raising of tomatoes and sweet potatoes, by this method where all others failed.
How to Dig and Care For Sweet Potatoes.

Great care should be used in digging and storing sweet potatoes to prevent bruising and freezing. The writer finds it a good plan to never dig potatoes while the ground is wet and if dug while the ground is wet or damp, the potatoes should be allowed to remain in the field until they are thoroughly dried, before placing in cellar or ricks in field. If potatoes are stored while wet, the wet soil adhering to the potato will cause black spots to form which later develop into dry rot.

Sweet potatoes if stored in cellars should be piled upon shelves made of slats to allow for circulation of air, the shelves to be placed in vertical rows about one foot apart. Another good plan, to keep potatoes in cellars, is to pack them in dry sand in layers one foot thick.

In storing in ricks in fields, a successful method is to first make a flooring of logs or long fence posts. Then lay crosswise on top of this a flooring of corn stalks. This forms a flooring which permits air circulation. The potatoes are then placed on the floor in shape of a mound, covering them first with corn stalks, after which the rick is covered with enough earth to prevent freezing. An opening should be left on top of rick to provide for air circulation. The ends of the logs in floor should be left uncovered.

FIGURE 23—Shows some of the tomatoes raised by Mr. Kasmeier the past season. He produced 220 bushels per acre.
to allow the air to enter under the floor and pass through the potatoes and out at the top. In case of extremely cold weather, cover ends of logs and also top to keep out cold freezing air. The potatoes will go through a process of sweating when first ricked. The bottom vents should remain open until the potatoes stop sweating after which the bottom vents can be permanently closed.

In transporting potatoes from field, wicker paskets should be used, instead of wire baskets as the latter bruises the potatoes. The handling of potatoes in sacks also injures and bruises the potato.

It is very important that the potatoes be harvested before the vines are touched by the frost, as a very light frost on the vines before the potatoes are harvested will cause them to rot soon after being stored. In case that the frost should touch the vines before the potatoes are dug, the vines should be immediately cut off or pulled up before the effect of the frost injures the potatoes.

SEC. 6.

ORCHARDS AND FORESTRY

The system of subsoiling as described elsewhere in this book may be and is extremely valuable for orchards and also for planting forests. In orchards the rows of trees should be planted flat or above the subsoil furrow. The subsoil furrows from one and one-half to two and one-half feet deep or as deep and wide as possible, should be made under the row before the trees are set out, and also between rows. The orchards should be kept clean by cultivating and the subsoil furrow between rows should be opened or re-subsoiled every year in the fall. As it is usually the custom to place orchards on hill-sides, it is deemed advisable to lay off rows around the hill so the drainage will not be too heavy, but should be so located that the orchard will drain in case of excessive rainfall. The roots of the trees will run along the ground to the subsoil furrow where in case of exceptionally dry weather, a sufficient amount of moisture will be found. A good plan is to place in these subsoil furrows dead leaves, rotten wood, corn stalks or anything which will have a tendency to enrich the soil and hold the moisture. This forms a fertilized bed from which the trees receive a great amount of nourishment.

Those desiring to put in forests will find the same theory of subsoiling useful as it would insure the preservation of a great amount of moisture, especially with the assistance of small dams constructed across the furrows. The roots of trees will eventually hunt low moist places, the moisture being more useful at the ends of the roots than near the body of the tree. This suggestion is especially valuable for railroads and others who are more vitally interested in forestry. Where forests are put out or planted on a
large scale, a traction engine should be used in plowing and subsoiling, the subsoil furrows being carried down as deep as possible.

You have often, perhaps, wondered why it is that large forests do not grow in parts of Oklahoma and Texas, and on the great plains and why it is difficult to grow orchards. The soil is just as rich as where trees of all kinds flourish, and the weather is even more favorable. A long study of the question has convinced me that these are the reasons: First, there is not sufficient moisture to make the trees flourish; Second, the rain that does fall is not properly conserved, running off before it has time to penetrate, on account of the winds keeping the ground clear of leaves that would otherwise preserve the moisture.

Such trees as do get a start, such as our trees in central and western Oklahoma, have roots going straight down to the submoisture. These roots are barely sufficient to keep the tree alive and give it a meagre growth, but the feeder roots, that make a tree flourish and grow large, are almost entirely lacking, on account of the absence of moisture in the soil where the feeder roots would naturally grow.

I am convinced that if forests were treated in the same manner as orchards, according to the methods I have described above, we could raise just as good forests on the uplands of the territory between the 20th and 25th meridians as in the river bottoms of this district or in any other state.

If our prairie countries were planted in forests and cultivated by methods discussed in this book, practically the entire rainfall would be retained, preventing the great overflows of our rivers and streams, thereby saving immense tracts of land from overflow.

_What Forestry Has Done._

"Many people in this country think that forestry had never been tried until the Government began to practice it upon the National Forests. Yet forestry is practiced by every civilized country in the world, except China and Turkey. It gets results which can be obtained in no other way, and which are necessary to the general welfare. Forestry is not a new thing. It was discussed two thousand years ago, and it has been studied and applied with increasing thoroughness ever since. The principles of forestry are everywhere the same. They rest on natural laws, which are at work everywhere and all the time. It is simply a question of how best to apply these laws to fit local needs and conditions. No matter how widely countries may differ in size, climate, population, industry, or government, provided only they have forests, all of them must come to forestry some time as a matter of necessity."

"The more advanced and progressive countries arrive first and go farthest in forestry, as they do in other things. Indeed,
we might almost take forestry as a yardstick with which to measure the height of civilization. On the one hand, the nations which follow forestry most widely and systematically would be found to be the most enlightened nations. On the other hand, when we applied our yardstick to such countries as are without forestry, we could say with a good deal of assurance, by this test alone, 'Here is a backward nation.'"

"The countries of Europe and Asia, taken together, have passed through all the stages of forest history and applied all the known principles of forestry. They are rich in forest experience. The lessons of forestry were brought home to them by hard knocks. Their forest systems were built up gradually as the result of hardship. They did not first spin fine theories and then apply those theories by main force. On the contrary, they began by facing disagreeable facts. Every step of the way toward wise forest use, the world over, has been made at the sharp spur of want, suffering, or loss. As a result, the science of forestry is one of the most practical and most directly useful of all the sciences. It is a serious work, undertaken as a measure of relief, and continued as a safeguard against future calamity."

FIGURE 24—Shows Mr. Kasmeier's success with cotton on the highly manured soil of a cattle pen, where a farm demonstrator and a practical farmer had failed successively, using the old methods. Mr. Kasmeier, employing his new ideas, raised an excellent crop the past season in a cattle pen worked for the first time.
Sec. 7.
CULTIVATION OF HIGHLY MANURED SOIL

By following my method of farming, immense crops may be raised on highly manured land. By referring to figure No. 24 it will be seen that I raised a heavy crop of cotton on a portion of a cattle pen worked for the first time, upon which others, including an expert farmer, had made a failure under their methods, although under much more favorable conditions. This land, though covered with manure 4 to 6 inches deep, produced under my theory of farming over one bale of cotton to the acre, this being the first time the soil was cultivated. Some of the most expert farmers of the state attempted to demonstrate cotton raising on highly manured land, but only produced two bales off of four and one-half acres. This four and one-half acres had been farmed four years prior to this season, but had been used as a feeding pen in the past. My experience with this crop disproved the theory that too much manure is detrimental. It may, however, be injurious to crops to use too much manure if the land is not properly cultivated.

Sec. 8.
PREPARING VEGETABLE BEDS

Land for the raising of all kinds of vegetables should be well fertilized with manure, if same is obtainable, and carefully prepared, by deep plowing in the winter, the same as for other crops, using a little lime at the time of turning land. About 2 or 3 weeks before planting time, or long enough time to allow the soil in beds to settle and pack, before planting, beds about four feet wide should be laid off as shown in figure 25. The lister furrows, with which the beds are laid off, should be about 32 inches wide at top, and one foot wide at bottom, or wide enough to serve as a path as well as for watering purposes. The advantage of this method is readily seen, that it enables the gardener to reach all parts of the beds without walking on, or tramping down the beds and plants. In case of rain the water runs off the round surface of the beds into the ditches, where it is held in the furrows by small dams at intervals and soaks into the beds, from the bottom. Where water is applied artificially, it is also applied by means of
the ditches, reaching the plant from beneath, and thereby preventing wilting even in the hottest weather.

All small vegetables, such as radishes, lettuce, turnips, onions, etc., should be planted on these beds in rows, six to eight inches apart. This is done to allow the surface of the bed to be worked very shallow and kept loose, allowing the moisture contained in the bed to be drawn up near the surface, where it is reached by the roots. In hot climates water should always be applied on the roots, and never on the plants. The planting in rows allows space for applying commercial fertilizers and cotton seed meal. About 20 pounds of cotton seed meal and 10 pounds of potash should be used in a row, say 100 feet long. This fertilizer should be applied between every row, three to four inches deep, and covered. The use of cotton seed meal provides a good supply of nitrogen, which gives health and vitality to the plants. The fertilizer used in this manner should be stirred and worked often, care being used not to disturb roots of plants.

Cabbage should be planted, cultivated and fertilized in the same manner as tomatoes and sweet potatoes, that is, by fertilizing early in lister furrows that have been subsoiled, and opened up and stirred at planting time, which makes the plant row in the same row containing the fertilizer.

Peas, beans, etc., should be planted in rows two feet apart, the land for same having previously been prepared in the same manner as for other crops. When ready to plant, a furrow is run, as deep as possible, with a Georgia stock and bull tongue. Cotton seed meal (and hulls if obtainable), and potash are then applied in these furrows and then covered up. The beans, peas, etc., are then planted flat, half way between these rows containing the fertilizer, about the same amount of meal and potash, as above is used.

Too much cannot be said in regard to preparing and fertilizing the land before planting time, and if you expect to get good results in gardening, select only the best of seed, regardless of the price. Money invested in good seed is money well spent. Deal directly with reputable seed houses, and always keep a complete record of all seed planted, by so doing you can soon learn the best quality of seed to buy.

CHAPTER VI.

A Word of Advice to My Fellow Farmers.

Kind reader, I would request your kind attention, and a close study of every word in this little book, which deals with systematic and scientific gardening and farming, and also the care of orchards, vineyards, forests and small fruits of all kinds.

Before going further I would like to call your attention to the method of farming, soil and water preservation of the noble south-
ern farmer of sixty years ago, who was in those days commonly
called by the plantation negroes “Old Massa.” When this good old
Massa settled upon a tract of virgin land in the beautiful south
and cleared from the land the mighty forest, he planned and de-
veloped a system for preserving every furrow of the precious
soil. He laid off his plant rows around the hills, instead of up
and down. He constructed circular ditches and water furrows to
take care of the heavy rains in such a manner as would preserve
the soil. When the tourist in these days visited the Sunny South,
he noticed the wonderful progress of our great cotton belt. Where
before had stood the forests covering the hills and the valleys,
appeared a scene of prosperity. The conditions then were brought
about by the employment of scientific methods of holding and tilling
the soil. This “Old Massa” was, in other words, a business farmer
with a system, and this kind of farming, just like any other busi-
ness run on a system, was bound to succeed. The world at large
in those days would call the cotton industry a golden treasury.
All this was through him, the “Old Massa,” being a business farmer.

But what has happened since those days? Has your father or
yourself, dear reader, practiced this “Old Massa’s” methods or
followed in his footsteps? Have you made the same success at
farming? We must bow our heads in sorrow.—we have not! Look
at the hills that at one time towered, monuments to prosperity!
Look at them now, robbed of their crown of prosperity, devastated
by haphazard farming methods, done by rooters rather than farmers.

Now, kind reader, it matters not in what walk of life you may
be, whether a railroad president, an oil king, a banker, merchant
or farmer, we should get together. Let us practice and continue
to improve our farming, along scientific methods instead of pur-
suing our course of murdering the soil. We shape our own destiny.
Our future progress and prosperity depend upon our co-operation
and improved methods of cultivating the soil.

Dear brother farmer, we do not appreciate and have been slow
to accept the assistance that has been offered by our government
and business organizations. Look at our experimental stations that
have been established throughout the entire country and the demon-
stration trains run by the railroads. Are these for the benefit of
railroads and business men alone? No, they are for the farmer
also. They try to improve and help him in his work, but the farmer
is slow to accept. These stations are backed by the railroads and
the business people, and not by the farmers. The experts at these
stations frankly admit that they do not know all about farming,—
but neither do we. We can, by co-operating with these stations
and using improved methods, greatly increase our production upon
land that we have in the past pronounced worthless.

Had 75 per cent of the farmers of Oklahoma and other drought-
stricken states practiced the methods of sixty years ago, they would have made at least one-half a crop where we have made nothing. You may look upon you and you will see farmers selling their blooded stock. Why? Because they just naturally have not made enough feed to keep them and they themselves seek a country where it rains regularly, and are again disappointed. The result is, you hear the familiar cry "high cost of living." Therefore, let our business farmers, who constitute not more than 25 per cent of our seven million farmers and gardeners get together and co-operate with our business men such as I have mentioned above, and I am confident that we will reduce the high cost of living. If these business farmers will co-operate with the railroads, bankers, merchants and millers, it will then be a pleasure to farm and market our products. System is what we most need. Without system none of our railroads, factories or governments could have succeeded. If system succeeds with a large concern, then it will succeed with the farmer. The Union Pacific railroad employs 25,000 men. Suppose the president of this road should throw the reins with which he controls the system, into the hands of his 25,000 employees to manage. Do you believe that the trains would be run on time? We are compelled to admit there would soon be no railroad. So it is with our vast army of farmers who have no system and no living, and blame our railroads and banks and merchants as the cause. On the other hand I am confident that if you farmers without a system would get together and employ improved methods in your farming and systematically market and handle your products, you would then cease to blame these large concerns, and would work together with them,—then what a mighty power you would be!

The farmer, with his up-to-date implements and machinery, has not made the same progress that has marked other lines of business. In fact, his methods will not compare with those of the farmer with his wooden plow of sixty or seventy years ago.

CHAPTER VII

A FEW USEFUL METHODS

To Make Fruit A Sure Crop.

To insure a crop of all kinds of fruit every year, I use a method that I learned from a neighbor in northern Alabama. He had always raised fruit, of good size and quality, even when others raised none. His method was this: After a hard freeze in the winter, when the ground had been chilled to a considerable depth, he would haul leaves and scatter deep over the ground for a radius of about five or six feet about the tree and weight them down with brush or chunks or wood. This would keep the frost in the ground, and also the moisture. When the warm days came, even though the ends of the roots would be livened
up, the sap would not start, on account of the roots near the tree still being cold and the bloom would be kept back until all danger of frost was over. The result was that when the sap did start and the tree bloomed, the blossoms stayed on, and produced fruit. The moisture preserved in the ground by the leaves helped to develop the fruit and a fine crop always resulted. For the same purpose I have used cotton seed hulls, spoiled hay, straw and other things of the kind. It is good treatment for apples, peaches, plums or any kind of fruit.

The writer has improved upon the method of his neighbor in northern Alabama. He has not only studied fruit culture in the sand hills, but also in the river bottoms. It will be noticed that wherever the frost is retained in the ground around the roots, the bloom is always late, consequently the fruit is not killed by the frost. Where orchards are located on the sides of sand hills, and where the ground has been frozen in the winter, a mulch is formed in the sand one to three inches deep when the ground begins to thaw. This mulch acts as an insulator on the frost below the mulch, and retains it there long enough to hold the sap down, thereby preventing an early bloom. This same theory likewise applies to gumbo districts, that is, when the thaw starts it forms a mulch one to three inches deep on top of the ground and holds the frost the same as on the sandy hillsides. Where orchards are located in sandy loam, this will not be the case, as the ground thaws out much faster, and furthermore never freezes as deep. It is very essential to use the leaves and hay around the trees after a hard freeze to keep the frost in the ground. This should be applied usually in January or February. If hard freezes continue after this has been applied, this insulation should be removed, allowing all the frost possible to enter the ground, after which it should be covered again, and left until the trees bloom.

Marketing Crops.

Now, kind reader, after you have studied this little book and practiced its ways of farming and trucking, you will no doubt raise abundant crops. The question then is how to best market them. Do you consult with your banker, merchant or miller about the price of the same and the quantity and quality raised throughout the country? No doubt you have lived in a drought or wet district, and formed the idea by associating with your neighboring truckers and farmers, that everything was burned up or drowned out and you were going to have a big price for your truck. Then you will load up and come to market. There are always plenty of buyers known and unknown to you. You will be surprised at the price they offer you for your truck. As you have to have money, you dispose of your products to them, or dispose of a part and store the rest for a higher price. But nine times out of ten this
higher price does not come. You have been merely a figure board, and you will then condemn the banker and merchant and miller, but the buyers will wink at each other and laugh up their sleeves and say that if it was not for those block-headed farmers they could not make a living. You return home and say there is no market for your products, only a dumping place.

Now, my friends, why don't you get together and form an association with your bankers and merchants and millers? They know what is raised throughout the country and by marketing direct to the people who need your products you will cut out the middleman's profit, and instead of having a dumping place you will have a marketing place. The banker, merchant and miller are for your interests, for you and them to prosper together. I for my part would like to call such an association the Southern Cotton and Corn Growing, Marketing and Banking Association.

**Fattening Hogs.**

Sweet potatoes, such as the Southern Queen, tomatoes and the like, make a good frame and may be fed up to fattening time. Then take 200 pounds of corn chops, 100 pounds of cotton seed meal, put same in a wooden tub the evening before it is wanted for use, scald with boiling water, stir thoroughly to make a mash. Mix only enough to last the next day. This will make a sweet and delicious feed for your hogs. Add enough water to the feed to make a thin slop, and never feed more than the hogs will eat.

Then try this: Add a little salt to the scalded feed, put it in a baking pan and bake it as you would corn bread. When you go home for lunch about nine or ten o'clock, break a piece off and give it to your horse or mule, then watch him pull your cultivator!

This feed should never be allowed to sour or ferment. I would like for the experiment stations to try this method of fattening hogs. I actually believe that fifty to sixty pounds of this feed will make from twelve to fifteen pounds of meat.

As to smutty corn for feeding. Never feed whole. In shucking, be very careful to throw out all the worst ears, or don't shuck them at all. Then take this corn, shell it and have it ground into chops. For feeding take three parts of corn chops and one part of cotton seed meal, and moisten same. This will prevent blind staggerers.

Another feed the value of which I would like to impress upon the intelligent farmers and truckers is wheat straw. We should all try to sow in the fall a few acres of wheat. In the first place, you will save many a dollar on flour, for which you now pay a dollar and a quarter to a dollar and a half for forty or fifty pounds. You can easily raise in Oklahoma and Texas from ten to fifteen bushels of wheat to the acre. By doing so, an acre would net you from fifteen to twenty dollars, and in addition would produce from one
to one and one-half tons of feed. On the same land can then be planted June corn. Kaffir corn, or a crop of sweet potatoes can be raised by planting runners from the vines planted early in the spring.

The wheat straw should be carefully stacked so as to keep it from spoiling, and in the fall take your feed cutting machine, which is driven by a small gasoline engine, and chop up and store the straw away in your barn. To feed, mix three parts of corn chops, one part of cotton seed meal, and the straw chops. Add a little salt, if desired, and sprinkle over it enough water at feeding time for each feed, to keep it from being dusty. Feed just enough so there will be none left in the trough. Use good tight troughs, made of wood. By using this feed, you will need no hay. This feed is good for horses, mules, cows, sheep, etc. To fatten steers, use 3 parts cotton seed meal, 1 part corn chops and the straw chops.

Every good farmer should own a gasoline engine. It is a cheap power and the invention of the gasoline engine has made it possible for every farmer to grind his own feed as it should be ground, at a minimum cost. All feed should be ground on the farm.

CHAPTER VIII

Should Consider Rainfall.

In awarding the prizes for corn and cotton raising, the agricultural experiment stations and the farm demonstrators should consider in connection with the yield the total rainfall which the crop obtained.

During the past season, the rains in Oklahoma were local. Showers might fall for several days even in the same section of the state, and yet only part of that section get the benefit of the rain. In some neighboring localities the past season there was a great difference in the amount of rain. One section, for instance, had but eight inches total, while another section only a comparatively short distance away, had sixteen to twenty inches. In the corn and cotton growing contests it is not fair to put the crop that had the lesser rainfall on the same plane with that which had more. The rainfall should figure in the awarding of the prizes, and the best comparative yield should be the basis for the judging.
IN CONCLUSION

IN concluding this little treatise, I desire to express my appreciation of the fact that my theories will not perhaps be received enthusiastically everywhere. It may be that some of my readers have far different ideas,—others may have tried approximately the same methods that I propose, without success. Far different conditions exist in different parts of the country. Some conditions might not be suitable for the application of the methods that I advise. Some farmers after trying some of my methods, may declare them to be a failure. I would respectfully ask, however, that before my methods are condemned that they be tried out fully and in every detail. The first trial may not be entirely satisfactory,—some little essential detail may be overlooked,—but I am confident from my own experience that a careful study and application of these methods will bring sure results. I have tried them in widely varying soils, under different climatic conditions, and in various parts of the south. I have no apology to offer for submitting them to the public, as I have been successful with farming, using these methods, where my neighbors, using other methods, have failed. My friends and the business men who are familiar with my work know that I have made a success of it, and urged me to present my views to the public. I have now done so, and if the knowledge submitted herein benefits only a few of my readers, then I feel that this book will be the success that farming has been with me, under the theories here set forth.
NOTES OF INTEREST

The first tariff was in 1789.

Silk was first made in 1850.

Homeopathy was introduced in 1825.

Women first voted in Wyoming in 1870.

The phonograph was first heard in 1877.

Sewing-machines were first used in 1846.

The patent-right law was enacted in 1790.

The first steamboat plied the Hudson in 1827.

The first adoption of standard time was in 1883.

The capital was established at Washington, 1800.

The first canal was opened in 1804, in Connecticut.

The first dental office was opened in New York in 1788.

The first assay office was established at New York in 1854.

The Department of Agriculture was made an executive one in 1888.

In 1767, William Lyle, of New York, made the first hot-air furnace.

The first President, Washington, was inaugurated April 30, 1789.

Cotton was first raised in Virginia in 1621, and first exported in 1747. The first cotton mill was operated in New Hampshire, 1803.
The first discovery of petroleum was in 1800, in Pennsylvania.

Iron was discovered in Virginia in 1715, and gold in California in 1848.

The first ship to carry our flag around the world was the ship Columbia, 1780-1790.

The first woman to write M. D. after her name was Elizabeth Blackwell, in 1849.

The first woman lawyer was Miss Mansfield, who hung out her shingle in 1860.

The first agricultural fair was held at Georgetown, District of Columbia, in 1810.

The first telegraph message was sent from Washington to Baltimore, May 27, 1844.

Vaccination was introduced into the United States in 1800 by Dr. Waterhouse, of Harvard University.

To Connecticut belongs the honor of establishing the first experimental station. This was in 1875.

The first State to add a star to the constitution of thirteen was Illinois, admitted December 3, 1818.

The first bridge of any kind erected across the Mississippi River was completed in January, 1855, at Minneapolis.

The first hospital was established in Pennsylvania, February 7, 1751. The Pennsylvania Hospital it was called.

The first patent on a stove for burning anthracite coal was taken out by Anthony Savage, of Pottsville, Pennsylvania, in 1830.

The first voyage of an American vessel around the world was made by the ship Columbia, from Boston, starting September 30, 1787.

Edison's telephone was first used at the World's Fair, Philadelphia, 1876, but it was two years later before there was one in public use.
The first steamer, the Savannah, crossed the Atlantic, from Savannah to Liverpool, in 1819, starting May 24 and crossing in twenty-five days.

The Weather Bureau was established in 1870, Increase Lapham and Henry Paine framing the law which established the signal-office at Washington.

As an example to show how our land is wasted, Germany with all her 60,000,000 people could live in Oklahoma and the entire population of the United States could live and prosper in the state of Texas and would have products to export if the proper scientific methods and care were used in farming the soil.

The quail is the farmer's friend and should be protected by him, instead of being slaughtered, as they are the best exterminators of worms and insects in the fields.
Mr. John Kasmeier,  
Shawnee, Oklahoma,  

Dear sir:-  

Sometime during the later part of September  
I had the pleasure of inspecting the cotton crop grown  
a and cultivated by you on your farm West of the City,  
under your dry farming system, and having a great deal  
of experience in cotton raising, I freely admit that  
the method used, which I understand is peculiarly your  
own, if practiced generally in this country, would  
materially increase the yield and decrease the cost  
of production.  

I understand that you gathered 2845 lbs.  
of seed cotton per acre off this land, and I believe  
that there were fully one-third of the bolls that  
ever opened on account of early freeze. In addition  
to this, there was a row of Irish potatoes grown bet-  
ween each row of cotton, which resulted in a fair  
yield and a good quantity, and I am inclined to believe  
that if the farmers of this country would take up this  
method of farming, that a plan could be worked out by  
which the yield on any given amount of ground would  
be more than doubled.  

As a rule we do not use enough system in  
our farming and trust to luck, and I will enter  
into any campaign or lend any assistance that might  
 promote or encourage a movement leading to an improve-  
ment in our present method of farming.  

I am glad to see you come forward with this  
system which I believe, when worked out, will prove  
successful in its application, and I believe it is  
etitled to the favorable consideration of those  
interested.  

Yours truly,  

[Signature]
Mr. John Zengerter,  
Shawnee, Oklahoma.

Dear sir:

I am anxiously waiting the advent of that book giving your method of farming. My son and myself visited your farm about the middle of last October, and I never was more surprised. After talking for two or three weeks with every one I met, to man that had lived in this country all the way from five to twenty one years and each and every one said they never saw anything to compare with the year 1911, as to dryness and failure of crops, but when we entered your farm it looked as though you had been having plenty of rain, but the crops all around you showed that there was something else, it must have been the man "behind the gun". The cotton was from 8 or looked to be from 5 to 6 feet high and was literally loaded with bolls from top to the bottom, in fact they were hanging in clusters and looked as though it would make one and one quarter or one and one half bales per acre.

We next visited your potato patch and the ridges were large and seemed to be full of potatoes. Next we visited the tomato patch, which was one quarter of an acre, and you assured us that you had sold $125.00 worth of tomatoes off this piece of land. Now this was the greatest surprise of the trip, for I lived last year in the famous Rio Grande River valley, near San Benito, Texas, which is in the irrigated district. The land is as rich as the valley of the Nile and the water can be turned at will, and I never saw anything there to compare with your crops.

Now it seems to me if the people would adopt your method of farming on scientific principles, farming on intensive instead of the extensive plan, it would revolutionise the farming industry. Why not get 1 1/2 to 2 bales instead of 1 bale to every 2 to 10 acres of ground.

There are people around me now fixing their ground for cotton using an old Georgia stock with the old fashion Georgia twister being pulled with one small pony, making what they call, back East, a hard bed, plowing the land about three inches deep, which will do if it rains plenty, but if a drought strikes him it is gone. I am using a nine inch plow, plowing 8 and 10 inches deep dragging down behind me.

Wishing you more success in future. I am.
Yours truly,

Wishing you ever success in future. I am.
Yours truly,

General Delivery
To Whom Concerned:

I have personally and closely investigated the methods employed by Mr. John Kesimere in growing cotton, season 1911, under very dry condition of the soil, and also noticed, with a great deal of interest, other experiments tried by him, both on cotton and other crops, and I am thoroughly convinced, that the methods he employs are of great value to the farmer.

Yours very respectfully,

[Signature]

President.
Dear sir:

Your farm product display I saw in the Shawnee National Bank of this City a few weeks ago, certainly proves that a crop can be raised in Oklahoma rain or no rain.

Your showing of cotton, kaffir corn sweet potatoes, Irish Potatoes, and tomatoes etc. was a fine a sample as I ever saw at any State or County Fair anywhere during a good seasonable year.

It would certainly be a great boon to every farmer in Oklahoma to know your method of Dry Farming.

Yours Truly

Of Hallay White Clothing Co.
Dear sir:-

My recent visit to your little suburban home and farm, and what I saw there, was such a pleasant surprise to me that I cannot refrain from an expression of commendation and approval of your efforts, and the success attained, to increase the yield of cotton and other crops in this state, and thereby better the condition of the farmer.

Your cotton field was a sea of waving white—a real wonder and when I consider that it already had been picked over twice before my visit, I marvel at the success of your methods of cultivation; and I earnestly recommend it to the farmers of this state. I certainly saw more cotton in that field after two pickings than I have seen before in this state.

Your caffir corn and sweet potatoes, were also far superior to any I have seen, both as to yield and quality. The five sweet potatoes measuring over a yard were certainly beauties and I cannot say that they were by any means the largest you raised.

I shall certainly follow your methods this coming year in the cultivation of my two farms in this county.

Please accept my thanks for the instruction that my visit yielded and the pleasure I experienced.

Very truly,

[Signature]
RECEIPT

........................................day of..................................191......

Received of.................................................................,

one copy of the 1912 edition of “The Key to Successful Farming,” by John Kasmeier.

In accepting this book, I agree to answer all correspondence relative to the methods employed therein, and to report to Mr. Kasmeier, any success made under his methods.

Signed.................................................................

Address .................................................................

Please give correct address, stating route and box number

NOTE—Mr. Kasmeier expects to issue a new edition every year, setting forth his experiments and methods, and also give the experience and success of others employing his method in connection with their own, throughout the entire cotton belt.
One copy del. to Cat. Div.

FEB 24 1912