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The Keystone of Industries

By

SIDNEY YOUNG SULLIVAN

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The Keystone of Industries

ILLUSTRATED

By
SIDNEY YOUNG SULLIVAN

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What Is a Farm Without a Cow? Something to Love That
Can't Talk Back.

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Whoever within doth look
Will benefit by this book.
Get knowledge, laugh and enjoy
The writings of a country boy.

Grasses green, blue sky and trees,
Singing birds and humming bees.
Dark clouds, then rain, then bright and clear,
The writer regrets that he cannot hear.

To them that I within describe,
In their hearts they know I haven't lied;
You laugh at what others may see,
But always think it is not me.

PREFACE

THERE was a farmer who got plumb discouraged; it seemed as if whenever he got a good crop prices were so low that it didn't pay to haul the stuff to market and when prices were high he had no crop. Things got so bad he said he'd be hanged if he was going to work any more. He figured he would starve anyhow and there was no use working himself to death at the same time. When spring came he didn't plant anything at all but let the weeds have full sway. Everybody predicted that he would be in the poor house inside of six months, but that didn't worry him in the least because he knew he was headed that way any how. There was talk of electing him to some office in order to provide for his family, but his political views were all wrong and it couldn't be done. About four months later, when this man had a fine crop of rag weeds and wild radish, along came an auto with four good lively young fellows and stopped for water for their machine; the farmer asked them if they wanted a drink of cider, for there were a few wild, twisted old trees that nature kept for him. After cracking a few jokes the men asked him how much he would take for his farm; just for a joke he said he would take seven hundred dollars an acre;

much to his surprise they took him up paying him cash for the whole hundred acres. Now there is the best golf links in the country and the farmer is living in town lending money to his farmer neighbors at exorbitant rates of interest. Some people are born lucky, others have to work; for the benefit of the workers read the rest. I expect to be criticised but will stand back of anything I write; now sit up and take notice of the observation and experiences of a man who knows. Straight from the shoulder.

A handwritten signature in cursive script, reading "Sidney G. Sullivan," with a long, sweeping underline.

*Practical Farm Garden, Dairy, Poultry,
Lecturer and Labor Expert.*

CHAPTER I

BACK TO THE LAND

The back to the land movement boomed by land promoters and little stories of farm fiction has ruined many ambitious young couples and business men. Having but a few thousand dollars to invest, they purchase a farm, pay cash, say \$1,000, balance mortgage. These people being misled by printed stories of successes but not of the failures. The average city man has an idea that life on the farm is a vision of fresh eggs, milk and bumper crops, and a big bank balance and enough of outdoor exercise to make it healthful. No thought is given to the toil, sound judgment, broad-mindedness, years of experience and work to make the farm pay. Furthermore you have to love it, and be able to get around difficult corners with the least amount of expense. Failure should not discourage you but make you cautious before sinking your last dollar in something beyond your skill. There is money in it two ways; what you put in and what you take out. A great many put it in and never get it out, then lose their farm, and everything they have, never figuring that the land companies and experiment stations have the backing of the state and corporations. Their exhibits look nice at the fairs and get you enthusiastic, but they do not teach the real farmer

anything; he knows he can do the same thing on the scrub oak lands, or any lands, if he has the money to put the soil in condition to grow crops. What he looks for is not an exhibit but the real bona fide profits obtained from the land per acre after all actual expenses have been deducted. Many a city lamb has been led to slaughter and lost all he had by the lure of books, magazines and newspaper articles.

PURCHASING OF A FARM

The purchasing of a farm depends entirely on what you intend it for; don't think you can buy a farm for views or hills and dales, if you intend to have it maintain itself; such places are luxuries, but on some of these farms angora goats, sheep, possibly swine can be raised, but such stock are not generally wanted on an estate of this kind where you have to raise large herds. In buying a farm for profit the first thing to find out is what you intend raising; find where you can market same to the most profit; go to the general store and ask questions in regard to farm, relative to who owned it and who has been working it for the past fifteen years; what they raised; if they were successful. You can get this information in general conversation, but don't state your business. Keep in mind there is no trouble raising the crops, the trouble lies in being able to market

same profitably. When you get off the train you look around and you will see a general store, gin mill, blacksmith shop, bus, a church steeple in the distance and a school house upon a knoll, which looks like a smoke house, and anything but a cheerful place for the education of children, but nevertheless you have landed in one of the great little producing sections; don't judge the town by the station. The store proprietor no doubt will tell you that Bill Jones lived there the past few years—had trouble or hard luck and had to give up; Bill was a good fellow but lost the farm after some city fellow had it for about two years and sunk a lot of money. You ask him who had it before the city man—why he bought it from Si Simpkins, and Si was some farmer; raised fourteen children, sent them to college and is living in town on his money. Why you ought to know Si's sons, they are big lawyers and doctors and Si's daughter is teaching school in the big city. What did Si raise? Why hay, milk, hogs, sheep, etc.—sold them right in the nearby market. Now if you want to be a success, buy that farm and raise the same product that raised Si Simpkins' fourteen children and educated them. With modern machinery and good judgment you can make money on that place.

The best farm in the world ten miles from a station is not worth anything at any price,

What Will Make Inland Farms Valuable, if Good for Trucking Purposes.
Ready for Market.

unless there is a market for your product for that farm. Some farmers by the packing of their product create a demand for their brands, but it takes years of experience and time, and the auto truck will no doubt make some of these inland farms valuable, providing they are good for trucking purposes. Even at this it is a gamble; on a large farm you bury your fertilizer and seeds; they grow fine and you get good crops and yet you lose money. Now the question — why? Because your neighbors have equally as good crops and nothing under the sun can control the market prices, and your season's work is lost because of over-production. Last if not least, to be a success make the best three farmers in your neighborhood your friends—avoid experiments and let the other fellow do that.

CHAPTER II

THE VALUE OF PRACTICAL FARMING AND GOOD
COMMON SENSE

FARMS have been bought, some for summer homes, others for certain hobbies and commercial farming. In purchasing these farms they hope to have them self sustaining; others look for a fortune; others for pleasure. Now the question is, who is the one to run these farms? Is the purchaser capable? We all know that a man may be an excellent and prosperous banker, broker, lawyer or a merchant, but nevertheless may be unable to run his own farm with any success. He thinks he can—and no one is able to convince him different. It is always the fault of the superintendent or manager that things do not move right. I sometimes agree with the employer in this respect, but looking into the matter rightfully, the fault is the fact that the employer has employed the wrong kind of man. In nine cases out of ten, business men will employ some scientific man or engineer who has no practical ability or knowledge at all of farm work and its management; and it is a mystery how some of the managers and superintendents who obtain these positions from men of real business ability put it over them. I have known them to employ men who could not qualify under a real farmer. You can tell nothing

by references; only of character and honesty. I have the ability from actual farm experience to tell what a man knows by just allowing him to talk.

In engaging a superintendent or a manager, the average employer gets a figurehead at a large salary who is obliged to employ different men for each department, and they really do not know how these departments should be run properly. The average farmer being a man of coarse appearance, this man will show in his conversation and prove his ability to be a manager of an estate or a farm and prove to be a clear headed fellow and one who knows his business. Does he generally get the position? The answer is no, or not until the business man has employed the figurehead on his wonderful references and spent a small fortune for experimental purposes which are charged against the farm; this is supposed to be overcome by the next superintendent. Generally this scientific superintendent will start on page one of an implement catalogue and purchase an article listed on each page before figuring whether it is really needed on your particular place.

Now the question arises—what am I going to produce on my place? The answer is “everything, to make it a paying proposition.” Some hobby cattle, chickens, swine, hamper system or something read in some magazine which it has taken years to develop and has been adaptable

for that particular farm. These things you expect your superintendent to do in one year whether adaptable or not. It cannot be done. A farm or estate manager does not have to be a college man to make an estate or farm maintain itself. My experience with some of the agricultural graduates who have not had practical experience, is that they are expensive luxuries and can sink more dollars in a short space of time than by playing the races where you have a chance to win.

I have yet to see the expert scientific farm that is paying \$50 per acre over and above all expenses. This \$50 per acre will cause comment and I have heard people laugh and say—why anybody can make \$50 per acre, but remember the man who is depositing \$2,500 per year for a season's work on a fifty acre farm, is making money; most business men sink that sum but the real farmer is not. It is being done to-day by practical farmers on Long Island, New York and other states but not on scrub oak land boomed by agricultural experiment stations and land promoters to sell land. The largest percentage of products to-day in our markets are produced by the practical farmer.

We will take for example a man who has been brought up on a farm, with cattle, hogs, and is well acquainted with general farming; this man has to earn a living from same. He may not know a balanced ration, yet he will be making

money; getting everything out of his stock. He has got to get it, and he can do it for you. If you have doubts about this just deed your farm over to some good practical farmer, equip him and you will see him riding in his own auto in about two years. The question arises—why can't he do this for his employer? The answer is—the farm has been run by everybody except him. He obeys orders, and the farm is run by the owner, all of his business friends, books, magazines and possibly some New York agriculturist or farm efficiency experts, who have never run a farm in their lives. Take it from me, when engaging a farm expert go to him, and say what you want done and get his price. Then ask him to give you the names of three farms or estates he has put on a paying basis. After investigating and locating such places employ the expert. It seems to me the largest business men, who should know better, fall for this farm efficiency business. There is no agricultural expert to-day who can go to a place and spend a day, or a few hours, and plan or write you a set of plans to make your farm pay. It is necessary to first become acquainted. Conditions have first to be learned. There are estates and farms run to-day by managers under the supervision of owners and specialists that are running behind and still keep running behind. Now who is at fault? I claim that the average practical farm manager and superin-

tendent can run these places on a paying basis if let alone and the place is put entirely up to them, co-working financially with employer. Outside interferences only cause failures and losses and grievances and little is gained but extra expense. A farm cannot be run from a New York office and cannot be run like a factory. Nothing scientific known can control weather elements. You may pipe and irrigate a small garden farm, but in large acreages and general stock farms it generally does not pay. If you take a trip in most any farming section, you will find the business man's farmer is going to show his old neighbor how to farm. In my section I have known farmers to make good sales to these men for good figures, safely figuring on buying the same back for half price, for generally the business man farmer gets tired of sinking money in their places unless they are bought for summer homes or show places. I have often heard and read remarks about the old-fashioned farmer; may I ask who developed this country and made more money than the old-fashioned farmer—even in the New England and other states on farms that are abandoned to-day? There are men in this generation living on the labors of their forefathers who made their money on these farms. These farmers made their money without modern machinery. What could those old fellows do if they were living to-day? Now give the good, broad-minded, practical man a chance and

employ him, for what he knows, and not what his previous employer had to say about him, as long as his character is all right. He might have been an absolute failure, and why—perhaps because he did not have the chance to show his ability, but his employer knocks him because he has obeyed orders and carried the place on his employer's orders; and the employer is still a farmer, still keeps changing managers, losing money, never realizing that the fault rests with himself. The reason is you are not a farmer; wake up, and use your business judgment and common sense.

HAS THE BUSINESS MAN A CHANCE?

In purchasing a farm for a home or estate, it

Swine Prisoners in Stone 500 Feet From the Feeding Point. They are Saying, "If I Could Only Get Out." City Bred Architects are Pigish. Their Mode of Construction is to See How Much Money They Can Spend. No Profit in Swine by This Method.

is generally conceded that the business man gets a place that is down and out, or not in high state of cultivation. This of course he does not mind, as his ideas are to improve the place with ideal buildings to suit his fancy, pleasure and temperament. While it is an easy matter to employ an architect to plan or remodel the mansions, when it comes to the out-buildings for horses, cattle, swine and poultry, the average city bred architect puts the out-buildings in the most absurd places, and the mode of construction is to see how much money can be spent. How should the city bred architect know these things? He has never bred stock and does not know their characteristics, and does not know how to plan to decrease the cost of the maintenance or the natural condition of animals. You go into the finest stables and see valuable horses eating hay out of the air from racks high above their heads and other fancy triflings which leads the stable away from a sanitary standpoint. We all admire these things, but did you ever stop to realize the amount of dust and dirt horses are obliged to inhale and consume and cannot help themselves? Nature meant for horses to eat from the ground. Next thing is the heaves, which is blamed on the hay or superintendent, and which should be charged to the mode of construction. Here is where a practical stockman would save you dollars.

We next go to the dairy barns and find them built in the most elaborate manner; individual

drinking fountains, cement mangers, salt holders, brass railings, everything to make the cost of production beyond question. The buildings are not generally arranged on the efficiency plan; one building to lighten the work of the others. I have seen siloes placed 150 feet from the feeding point and heard owners say—"What will you have to drink, champagne or milk—it costs the same." Here is where a good practical cattle man will save you dollars by looking over your plans and condensing into a model dairy with all sanitary methods and cut the cost of maintenance. Have you ever stopped to consider cows who are obliged to drink contaminated water standing in individual fountain, also licking salt brick and rock salt lying in mangers? Salt absorbs moisture and filth. You try to keep the bacteria test at the lowest point, but are feeding it to the cow. For production of sanitary milk the plainer the construction of the dairy the easier the sanitation.

We next go to the swine houses and find heavy bred swine standing on cement floors. Did you ever realize that Nature never meant for pigs to stand on stone? This one little thing has caused unseen sickness among swine. The question may arise—how I have seen sows standing with sore feet and where there are sores there must be mucus from them. The sow is obliged to nose around in the straw inhaling her own impurities. Next thing is the

cholera or some other disease and the loss of the herd. The owner asks where did it come from? It must be the superintendent's fault. Get back to Nature, using common sense and practical theories. Swine are the cleanest stock if given a chance to be clean, but are generally kept in their own filth. Here is where a practical stock man comes in again. I approve of good two and one-half inch hemlock flooring, cork, brick or block wood paving.

Now to the poultry house; generally an output of at least from \$5,000 to \$10,000 for brooder houses, incubator cellars and buildings, all gone before you have a chick. You buy stock and expect to get the interest on the investment from the poor little hen, because you have read of the wonderful results from chickens in the poultry papers. You must stop to consider that these articles are written for the benefit of their advertisers and to get your money; for without advertising the papers cannot exist. Poultry houses can be built neat, plain and sanitary; no glass is required; the average height of the back should not be over four and one-half feet; the idea is to keep away from a wind break; on the four or four and one-half feet basis in the back, seven feet in the front, the wind strikes the roof and goes right along. Here is where one little practical theory will get you eggs, and there are many others.

CHAPTER III

THE SOIL

All owners and farmers want to build up their soils for the least amount of expense. They get books on soils, farm papers and read up on the soil matter, and strike a snag: There is not a book that applies to any one particular farm. You read magazine articles about analysis of soils, and you call a specialist and he gives you an analysis of your soil. It lacks humus or nitrogen and it always goes back to the same answer; you need stable manure to get your land quick; your practical farmer told you that you needed no specialist; now the specialist will tell you the chemical your land contains, and by adding the necessary chemicals lacking that will produce your crops. We say the land has nitrogen and phosphoric acid; all you have to do is to add potash, which you apply. The crop comes up and grows like a sick child fed on the wrong kind of milk. Now where does the fault lie? You have done your part, it must be the superintendent not following the specialist's orders. Now it is not the fault of the specialist or the superintendent. Your land contained nitrogen and phosphoric acid and analyzed same, but it was not available or soluble to plant life; you fed the ground but not the plant; you can analyze nitrogen from

shoe leather and potash from wood, but it will not grow anything unless in available form. To grow your crop it is necessary to have organic matter, potash and nitrogen and phosphoric acid, applied in available form. Then you will grow crops, providing you are blessed with the necessary rains or irrigation. A plant is a living thing, like a child, and has to have food and water, otherwise it will be stunted and starved. To learn these things you have got to read articles from the farmers' standpoint, and there are very few papers that publish articles written by the farmers that are down to the earth. These articles are farm fiction that jolly the estate owners along for the benefit of their advertisers. When reading these articles just stop and think.

PRACTICAL NATURAL RESOURCES VS. THEORETICAL METHODS

To build from Nature's resources you read articles from scientists about plowing under cover crops, such as rye, clover or vetch. The scientist leaves the impression that you can produce the same as from stable manure; it is a mistaken idea to expect the same results from two bushels of rye sown to the acre at the cost of \$2.00 as from twenty tons of manure at \$1.80 per ton, or \$36.00 per acre. I am coming to the natural resources you have at most places

right at your back door. Generally every farm has a woods; if you cannot afford manure, go into the woods and take six inches of the virgin soil, which is composed of decayed leaves, worms and branches, and broadcast on your land and add one ton of lime to sweeten the top dressing, which will bring out all chemical available to plant life. Plow in and you have your humus. You will have to add potash, phosphoric acid and nitrogen. This mixture will grow anything. There are concerns selling this dried muck and organic matter to owners of estates. The owners having the same in their woods should be spreading their level land all winter and cultivating the woods at the same time. Trees like cultivation even in the woods. Do not make a mistake and think that lime is a fertilizer, as lime itself will grow nothing. The only resources that lime contains is the power to sweeten the soil and it proves valuable only where the land contains humus or organic vegetation which has become sour and dead by making them available to plant life. If you have no woods, it will take longer to build up your place, from Nature's resources, by the following methods: Plant rye in the fall according to the climate of your locality; when eighteen inches high, the following spring, plow under, using a chain, extending from the end of the plow evenner to the beam over the mould board, dragging in the furrow to lay down your

rye. Harrow, replant, with a mixture of oats and peas; when twelve inches high plow in, using the same method. Harrow and replant with soy beans. When beans blossom, plow in, using the same method. Harrow and replant with Hungarian millet or cow horn turnips; when the millet comes to a head or the turnips cover the ground, plow in. It will take one season's work and you will have a humus bed of decayed organic vegetation. This can be sown in wheat and timothy hay, clover, added on top in the spring; after harvesting the wheat, you will mow hay for five years by adding a top dressing of ground bone, or, in fact, plant anything the following spring by rotation method, using commercial fertilizer.

FERTILIZER

There are firms who make commercial fertilizers—do not be prejudiced against them as they employ chemists to study out available formulas for plant life. These fertilizers contain tankage as a filler, which makes the composition a balanced plant ration and necessary to plant life. It is a mistake to broadcast raw chemicals on the land not containing humus, for in time it will rack the land and act like whiskey fed to a baby, paralyze it. Remember: Nature always provides her own resources for

maintenance, but cannot apply it herself; it is up to the man.

HUMUS AND SOIL FERTILITY

Humus is decayed vegetable matter in the soil and is a very important constituent in rendering soils fertile. There are a number of reasons for this, prominent among which are the following: First, the organic matter containing the essential plant food elements, and as it decays these elements are changed into forms available to plants. In other words, the plant food is put in condition to be used again. Second, as the organic matter decays certain acids are produced and these, acting upon the insoluble mineral constituents in the soil, dissolve and render them available to plants. Third, many of the changes in the soil are brought about by bacterial action, and decaying organic matter furnishes food for the bacteria, so they can grow and multiply and thus render more mineral plant food elements soluble in the soil water.

Plants cannot take up solid foods from the soil; before they can appropriate food it must first be gotten in solution like sugar goes into solution when put into water.

Then there are other ways in which humus benefits the soil. It renders the soil dark in color, and a dark soil absorbs more heat than a light-colored one; that is of considerable ad-

vantage in the early spring. A soil filled with organic matter is also capable of holding more moisture than one that is deficient in this constituent. In a dry year this may mean the difference between a fair crop and a complete failure. Now this humus does not necessarily have to be stable manure for you can decay or make this humus without it passing through an animal by plowing under green crops, but this organic matter will lack nitrogen, which is obtained in manure through the urine, but scientists tell us this can be taken from the air through clover, but my own experience in obtaining it through this form was: I plowed under 5 acres of the prettiest clover in blossom; this was so sweet that you could lay right down in it and the fragrance would put you to sleep. My grandmother walked down on the farm and asked me what on earth I was doing. I said plowing under nitrogen. She said, better get your mowing machine and put your nitrogen in the barn. By better experience I found she was right. I would have gained more nitrogen feeding this nice clover to my cows and buying my nitrogen in a bag and apply it myself, and know it was there, and you don't get a starved out crop.

CHAPTER IV

OFFICE ORDERS, THE KIND SOME-
TIMES GIVEN TO SUPERINTENDENTS

*If Your Man Does Not Know These Things He
is no Man to Employ*

FARM MEMORANDA

THIS is the 11th of October; we must expect a hard freeze in about two weeks and have about six weeks before the ground will freeze up and make further work impossible in many lines. There are a number of things that I want to have finished before that time and the only way I know of to insure their being done is to make a list of them and then a schedule of the way they are to be done. The list will probably omit many essential matters; these must not be left undone for that reason but you should supplement the list wherever necessary.

I have not attempted to make the list in the order of importance of the things to be done or in the order in which the things should be done, but only in the way they have occurred to me.

1. *Ploughing, harrowing, etc.* This should be started after the first rain and a man kept constantly at it until the ground freezes. I would like to have every field south of the house ploughed and harrowed; that is, all four fields. I would like, before it is planted, to extend the field furthest from the house by taking out some

of the locusts, but I do not think that this can be done this fall. If necessary, the field that had corn and potatoes in this year may be left to the last, but those in heavy sod, like the timothy field No. 1, should be started at once.

2. The lawn should be ploughed up. After this has been ploughed, muck from the ponds should be hauled and put on it. This muck should be put half an inch thick all over and in those spots where the soil is poorest about two or two and a half inches thick. As the muck is acid, we should add about 3,000 pounds of lime. This muck and lime should be thoroughly harrowed in.

3. Mulch the rhododendrons. You can use leaves and the wire which this year was used to train peas on, for this purpose. Before mulching, the rhododendrons should be thoroughly weeded.

4. Prepare root cellar.

5. A considerable amount of work in the garden. In detail she will direct this but in general it will be to grub out and spade in back of the present garden, take out locust tree in south end and the flowers now in border rearranged as she may direct.

6. Finish the work begun on the knoll.

7. Cultivate the white pines on the hill back of the laundry yard.

8. Protect the cedars.

9. Get in the corn.

To get this all done and yet keep up with the other work on the place will necessitate careful planning. I offer the following as suggestions only and will be glad to have your ideas on any and all of it.

One man should be kept on farm work and nothing else. Cutting corn should first of all be finished and then just as fast as it is in condition, the corn should be carried in. Put the corn stalks in the old barn and the corn in the crib. This may necessitate putting some of the tools now on the floor of the barn underneath, but if the same are well greased no damage will result. The work of this man is all important and he should have assistance on the corn so that there will be no question that he can start in ploughing immediately after the first rain.

You and the other man had better first of all complete some sort of a root cellar. This you should be able to do in three or four days at the longest. You should then devote your own principal energies to transplanting such of the flowers as are to be moved and putting the vegetable garden in shape for the winter; i.e., tying down the raspberry bushes, setting out strawberry runners, banking the celery and the like. The other man you can keep working about the garden where he will be immediately under you; perhaps you will be able to start him grubbing out the knoll.

As I told you, we allow the place \$225 a month and all expenses have to come out of this amount. Your pay roll for the month will probably be about \$165; you may save \$10 on this but you cannot count on it. That leaves \$45 for feed bills and all other expenses such as the purchase of a corn cutting machine, etc. Besides some time, between now and next spring, you must get enough ahead to pay for seeds and fertilizer for the gardens, both vegetable and flower. You will see that you will have to exercise the greatest care to get through. I think that if you calculate it all out carefully you will find that it will pay; in case you find after the first rain that your corn is not all in, hire another man so that the ploughing will not be delayed.

OTHER SUGGESTIONS

How much hay and straw can you sell? Bear in mind that you do not have to depend on the hay entirely for feeding for you can use at least half the ration of corn stalks. You can also use these for bedding instead of straw. It would seem to me that there should be a considerable amount of straw and hay to be sold.

In this connection I might suggest what seems to me to be a good ration to feed the milking cows;

ONE COW

15 lbs. of corn stover
 15 lbs. timothy hay
 3 lbs. corn meal
 3 lbs. wheat bran
 5 lbs. of a mixture of two parts gluten meal and one part wheat.

All of the above entails a great deal of work and unless you have a regular schedule, carefully laid out in advance, it will be very hard to get through. The way for you to do will be to take one evening each week and lay out the work for each of you three for the next week. Every day should be scheduled. For instance:

<i>Time</i>	<i>John</i>	<i>Billy</i>	<i>Mike</i>
6 A. M.	Milk. Feed chickens and other stock.	Clean stables, kennels and chicken house. Put cows in fed; then pasture.	Help with chores until horses are plough.
8—12 A. M.	Get vegetables, water flowers in house, cold frames etc.; start pump if necessary. Work in garden.	Grubbing and other work with you.	Same as above
12—1 P. M.	Dinner. Special work like root cellar, mulching trees, etc.	Work with you.	Same as above
4:50—5 P. M.	Get cows and milk; feed animals.	Evening chores	Put up tools and horses.

I am afraid that if you hire dagoes from the padrone you will only get eight hours a day out of them because they have to come and go so far. They really regard the time going and coming a part of the day's work; all this depends on the kind of a man you can get, however. I call this magazine dope that makes good men leave their positions.

Can a manager who receives these orders and follows them make good? The writer says no, but he carries out the orders with no heart in his work, for he knows he is doing wrong. He speaks to his employer, and the employer immediately says to him: "This is my place, and I am running it; if you cannot follow orders get out." The orders are followed; things go backward instead of forward and the owner gets dissatisfied with his manager and dismisses him. Does he give this man a reference? Some do and others say, call them up. When called up, his last employer will state that he is an incompetent man; cannot handle help; was a good worker but was impertinent because he talked back trying to show him light on a farm subject which the employer had not enough skill to see. What you are doing is keeping a competent man out of employment—a man that knows more farming and managing than his previous employer will ever know. Have you a right to judge this man's ability,

he being an absolute failure following your orders, making the work twice as hard for him, as he was working against the grain? Have you ever asked him what he knows about the brokerage business, if you are a broker? He will immediately answer you, "I am a farmer and that is out of my line." In this class of help it differs from commercial classes; you should apply broad-mindedness; do not consider the length of time a man has worked for his last employer, if he has a good character reference. Some employers send their secretaries to look at the last place the man has worked; if it looks fine there must be some reason he left to get another position; possibly to better himself; if the place looks poor he cannot be any good, but this does not signify anything, for you know not what conditions that man had to work under; he hasn't had the tools or help when needed, or anything that he really required—the time was past and the place got the best of him; he could not catch up. He is a failure to his employer and a failure to the eyes of the next door neighbor and the community, and has difficulty in obtaining another position through no fault of his own. The writer has employed men that were failures on neighboring farms, but a neighboring farmer will never knock a man for the work he has done for him, but will always say to try him out. I have personally tried out these men, some of

them drinking men, and they proved to be the best men I have ever employed, and I can say some of them quit drinking because they were treated for once as men, and the systematic management of the place fascinated them. Beware of the man with a pocket full of references of high sounding reading, as generally you will get misled; also a long reference, as generally they have worked on places where they have had soft berths and not the hard knocks of the game; in fact, references amount to nothing; it is the man.

WHAT CONSTITUTES A GOOD SUPERINTENDENT

A man that knows what to do and when to do it; a man that can keep the respect of his men and keep good fellowship; a man that can overcome obstacles with the least amount of expense; a man that knows his place; a man that does not know it all; a man that is not overbearing; last, if not least, a man with diplomacy; one that can manage a place for his employer the way his employer wants it run, at the same time not allowing his employer to think that he is running the place; this man is a winner. Employers like to think they are running their farms whether they are or not; they pay the bills.

If you expect your superintendent to make good he must control his help; on all successful

places the superintendents employ and pay all their help; they know the kind of men wanted and where they have to use them; if they do not employ their men they cannot expect to get the good out of them. The first thing the help will throw at the superintendent if he is employed by the employer or secretary is, "Who is hiring me?—what have you got to say about it? Go to hell!" And the superintendent cannot discharge him or pay him off until he is reported to the owner or secretary. The best superintendent fails under these circumstances and is forever branded as a failure and kept out of another position through nothing but the narrow-mindedness and ignorance of his employer.

RED TAPE AND FARMING DON'T GO

One thing that will not wait is planting time; to raise successful crops you have to be master of your farm; just let your farm master you once and you are gone; fertilizers, seeds and all things ordered by your superintendent, working foreman or farmer should not be held up for at least two weeks by your secretary or yourself. If you have not confidence in your superintendent to act as your agent you should not employ the man. Crops for success must be planted on time, so that they can have their proper chance in starting and

make way for succeeding crops. Once you get behind you can never catch up; do not blame it on your superintendent, but see that he has the material on time when he wants to use it. Farming is not like a factory; you cannot work nights to rush orders. Successful farmers cart their material when the ground is hard and have everything on the place before the ground opens up; put everything right straight up to your superintendent and he will do the rest.

Now to the superintendent or manager who has the confidence of their employers. There is one thing meaner than a skunk under the barn, and that is a grafting superintendent or manager. It may be irritable to work under orders of your employer's secretary, but your very employer may have been bit by a snake in the grass. There is nothing worse than the betrayal of confidences. Then again, the manager or secretary who has not the ability to buy their equipment direct from the manufacturer at the lowest price and buy through an agency, is losing money for his employer. While the writer handles equipment, it has been his object to reduce expense and buy just what is adaptable for the places. There are secretaries buying articles through agencies and often getting feed and grain that cannot be used, but the superintendent or workmen do not dare to report to their employer for fear of losing their jobs.

The best way to detect a grafting employee is to ask the men how much board they are paying, the wages they are getting, and order something from an implement house and return the implements and have the credit bill sent to you. The writer has no sympathy with a grafter.

CHAPTER V

FAILURES AND THEIR CAUSES

Why doesn't the farm maintain itself? A question trying to be thought out by a great many men. Generally I have answered that the overhead expenses and money invested in your particular place far exceeds what it can ever produce, regardless of what you raise. Your anxiety to make it pay causes you to keep changing managers and jumping from one thing to another, never actually planning a season's work as farmers do, regardless of

Unthinking Friends Always Ready to Eat Your Hard Earned Grub.

what their friends say or do. You listen to too many people and do not give a manager a fair chance. The having of many friends often bankrupts young starters with moderate means. It costs money and time to entertain; breaking in a day's work to hack to the station, and many a farmer starting has been put to the wall by unthinking friends. If your friends come use them; you cannot be a success and entertain at the same time. Your kind and unthinking friends will walk around your place and pat you on the back and say everything is fine, swing in the hammock all day in the shade, but are always ready at meal times to fill in on your good hard earned meals, going away delighted and tell some more of your friends of their

ARRIVAL.

Boarder—"I am looking for a man by the name of Sprague."
Farmer—"I be that party. Heave yourself in."

DECIDING.

Boarder—"How is the board at your place?"

Farmer—"I am known to be the best grubber in these here diggins. Don't I look it?"

Boarder—"Yes, but other things don't."

Getting Your Trunk Back to the Station.

"\$2.00, please."

delightful time. Next week more friends, and so on, until you are keeping a free boarding house and you working your heart out. If you are going to keep these friends, better be a

boarding house farmer—the kind that raises a small garden, keeps a few hens, a cow, takes boarders in the summer months, has a thin horse and a rattling depot wagon; is big, jolly and fat. Their principal work is taking out parties on straw rides, fishing trips and charging \$1.00 to take your trunk to the house and \$2.00 to get it back to the depot; they have good natured, lean, worn out wives, whose main struggle is to save enough money to exist in the winter months and have one dress a year. Who is running this farm? Why, the wife. Another successful farmer. Now I say the wife is running that farm, but did you ever stop to think that the farmer's wife is the pivot of his success? Without house management a farmer cannot succeed; just let him have a wife whose interests are not with him and he fails. I have heard remarks about the independent farmers, but for that independence some one has to suffer and generally it is the wife. This has been so since the developing of the country—to prove this you can go into any country cemetery and you will find on almost every headstone where this one and that one had buried two or three wives, and some old farmers are living with the fourth, and you can invariably trace it to the farmer. I haven't the least doubt that these wives simply worked themselves to death with hard work and rearing of large families. Times have changed now, but nevertheless the work

You Can Walk and Drive Around a Nice Building and Starve to Death.
They Bring You in no Income. Get Your Soil Right, the Build-
ings Will Follow. Could This Man Live if He Sunk All
His Money in Buildings? No!

in a farm house is beyond conception and the farmer's wife should have every work saving device as her husband has for outside work, but he generally gets his first; the board and feeding of a lot of farm help is no snap; I have often heard owners say—we pay \$5.00 per week, you should make money at that, but every dollar a farmer's wife makes is taken out of herself. I have heard lectures at granges by women on house management, but if those lecturers had to do the real work of some of the farmer's wives, there would be less talk. House management is one grand thing—it should work with regulation with the outside work on set time. The small duties of the farmer's wife is getting up in the morning 5 A.M., getting breakfast, washing dishes, feeding chickens, getting children to school, making beds, sweeping; then sitting down to about one-half bushel of second size potatoes, then getting dinner, have dinner, then mend clothes, skim cream, make butter, get supper ready; eat; wash dishes; put children to bed. Nine P.M.—then if she is able, may possibly sit down and try to read some farm or story paper until her head drops; then retires with a life partner who has worked in the sweltering sun and oftentimes forgets to take a bath; this goes on day in and day out and without an ambitious, interested

woman who is a good manager, farming could not exist.

Other causes are the lack of using fertilizer to grow the crops; the average business man wants something for nothing. Do not expect to get it from the air; it costs money, for every \$50 put in, you should take \$100 from an acre, or average same within four years, for if you do not put it in do not expect to get it out. Care should be taken in selecting seed; do not go to a seed house and expect to get catalogue results; go to the most successful farmer in your locality, see where he buys his seeds; if he has good corn seed get your seed there; remember acclimated seeds always give best results. By all means do not try varieties of seeds requiring rich soils on poor land; do not plunge in farm machinery; find out what you need and buy accordingly; as soon as you stop the leaks you are a success. Do not spend too much money in buildings; while they look nice, remember, they will bring you in no income; fix up the old buildings, do the best you can and put in every available dollar in your soil and you will find if you get your soil right the buildings will follow. You can walk around your nice buildings and starve to death, if you haven't enough money to maintain yourself; do not buy stock too expensive to kill or sell at reasonable figures, for in a short time you will find your farm over-stocked, or you will find your stock

eating you out of a home. Now because your stock comes from some great sire or dam with pedigrees, do not think customers will fall over themselves buying stock from you at big figures; it takes years of experience to build up a trade in any one breed.

Do not expect to get acreage results from experimental reports, as generally the experiment is done in small plots with water convenient; in all acreages you have to depend upon the rains and have blights, worms and unseen obstacles to prevent you from getting those yields. If you keep your ground thrifty

THREE ACRES OF POTATOES.

The man who wouldn't allow his manager to pay fair wages.

This man is a failure to himself, his employer and the neighborhood through no fault of his own.

Does it pay?

and well cultivated you will have no trouble in having a good yield, but not the kind that is read in experimental reports. Rain is necessary, but too much rain is a hindrance. When you have your crops started and it rains for a solid week you will find the weeds far ahead of your cultivation. That is the time you want help; the more the better; clean up your crop as soon as possible, but do not work it in the mud. Once the weed gets the better and the crop is stunted, nothing known in science can

The Farm That Paid \$10.00 per Day per Man for 16 Days. It Paid! Potatoes, Cucumbers and Sweet Corn. Not Scientific, but Just Good Common Sense Farming. If You Don't Get the Weeds, the Weeds Get You.

make it recover. You either have to get the weeds or the weeds get you. If the word science is ever misplaced, it is in farming, but the word progressiveness should be used, as all farming has progressed with every other industry.

There was once a farmer who had a dream—a fairy came to him and said if he cleaned his cows better he would make \$5,000 per year on his stock. The next morning he looked at his stock and thought of his dream. “I don’t believe I could do it, it only means more work for me to get my stock cleaned better.” He didn’t do it. This man has mortgaged his farm. That is the beginning; you can guess his end. Moral: LAZY.

CHAPTER VI

HELP

THIS is the hardest thing on the farm and the most expensive; every dollar has to be taken out of the soil and a cheap man is not worth

What the Writer Is Doing for Agriculture. Transforming City Boys Into Farmers From the Ground Up Method. These Young Men Have Made Good. Will You Give One a Chance?

his hire; it makes it still harder because the average class of young men taking agricultural courses will never make farmers in their natural lives. You can take a trip to any county or farming section—can you find one out of every twenty-five successful farmers a college graduate or a scientific farmer? If these young men had about two years' good hard, practical experience under a good farmer and can stand the hard knocks they are good, but they invariably quit the game. In my eighteen years of experience I have seen about twelve make good and I have interviewed them by the hundreds, but do not dare take the chances of placing them for they do not make good. They all want to be superintendents, but couldn't superintend a row of beans in their grandmother's back yard. This is why the foreign element make the most successful farmers in existence to-day. The average American-born young man doesn't like hard work.

When you get a good man, appreciate him; he is human and a hard worker, and when employing a farmer, either manager or farm hand, by the month, do not think you own him; you cannot make a servant out of a good farmer. Do not expect to get a good farm or estate manager for \$60 per month and wife to board help, do laundry work, make butter, etc., for any good man does not have to have his wife work. The investment on your place may be

\$100,000 or less—can you expect a man to run a place representing a large sum for a salary of that kind? What would you pay your secretary representing the same investment? We will say \$5,000 per year. You can get five hundred secretaries to every one good farm manager; you cannot buy brains at that figure and it takes brains. Do not expect brains for laborers' wages. Also you shouldn't turn down a man with a family, for all good men have families. It is God's blessing. Comfort makes contentment, and your farmer or farm hand needs comforts, but is generally put in barracks, over cow stables, in out-houses, in fact any place is good enough for the farmer or farm hand. These men work all day and must be fed according to their work—good hearty, solid food, three times a day on time. You cannot keep them fed on cereals, lettuce, salads and soups, but plain bread and butter and potatoes, meat and stews—it doesn't have to be the highest priced meats either. If a man is not properly fed you cannot expect him to work, and the meals must be on time. From 5:30 or 6:00 A.M.; 12 M., and 6:30 P.M. After that a man's time should be his own, but when a man is treated right you will find him with you at any hour night or day, but if not treated right he will leave you without notice, as he knows his ability, and a good man can get a position at any time and be treated as a man.

If you cannot keep your help there must be a reason. Just sit down and think it over. It is a mistaken idea to think a working man can live and work on the same food as the mistress or be portioned out just so much of this and that with the idea—"why that's enough for any man." Also men will not wait for their meals on Sunday morning. You expect them to get up and do their chores and they wait around until 9 o'clock for their breakfast and this being late, you decide to have two meals on Sunday. You positively cannot keep help this way, and the idea of filling a man up on salt pork, corn beef, ham, mackerel and oatmeal until he gets so much salt in his mouth that when he takes a drink of water he imagines he is diving in the ocean, is wrong. You kick if your man gets pickled, but you pickle your man. Oatmeal will not last a working man two hours, but will fill him up temporarily. Good solid food must be fed; without it your man will get famished and leave you. Some egg a man to death; nothing but eggs until the man's stomach is so upset that he dare not look a hen in the face.

I have had employers come to me for men and want a man for practically nothing, stating they have a fine out-house or room over a hot kitchen, in the barn or hennery. In fact, their idea seems to be that the man is the same as an animal; he couldn't possibly have a nice

clean room in the house, but the dog can sleep in the library. Then people cannot imagine why they cannot keep help and why it is scarce. Some of the farmers are suffering now, owing to their treatment of farm help in the past, when they could go to Castle Garden and get green foreigners, practically the scum of the earth, take them home, put them anywhere and treat them like animals. The times have changed and each branch of farming is specialized such as Farmers, Teamsters, Milkers, Dairymen, Gardeners, Herdsmen, etc. But the farmer, a combination man, is invaluable, and can command his value. The board causes more changing than any one thing; a man will not stay if he is not fed right for his work.

Do not turn down an inexperienced man, for he makes the best help if he wants to work. It may take yourself or foreman a little time to break him in, but when shown he makes no mistakes and does his work your way and will generally make good for you. The man who knows how to do everything has worked for Tom, Dick and Harry and carries all kinds of references with him; this man you often get cheated in because he knows their ways and slips over his work carelessly. Do not turn a man down for what his last employer may say about him, if he is of good character. He may make the best man you ever had, but just could not get along with his last employer and his last

employer thinks up his faults and knocks him for his own grievance at losing a good man. The average business man who employs this kind of help is narrow-minded and often loses a good man. A farmer cares nothing for reference—it's what a man does for him; if he cannot do it he gets fired quick. College boys

The Inexperienced City Boy Transformed. Do Not Turn Down an Inexperienced Man.

are generally expensive help, for when they come to your place full of theories and find you are not equipped with the latest machinery they simply cannot work, as at college they had everything to work with. A successful farmer is the man who stops the leaks without spending money. They have often come to me and said,

The Inexperienced City Boy Learning Farming From the Ground Up.

“I cannot work for that farmer—he has nothing to work with,” but if this young man sticks it out he will find that that shrewd farmer has a fat bank account, and they will learn more real farming in six months and how to overcome difficulties than they ever learned at college and be a success, but they don’t stick. If a man should start an office or school to teach agriculture and take the money from the same class of young men which I have met they would be arrested for swindling. Take the average farm boy who takes these courses; it either spoils him completely or makes him. After graduation one of these boys came home; his father asked him what he learned. He said he could play ball, tennis, foot-ball and fence. The father was glad that he learned something, so he said he could come and help him dig post-holes and fence in the ten acre lot behind the house, but the boy said, “Oh, no, father, I fence with foils.” His father said, “You do, eh; you come with me and I will teach you how to fence with a crow bar and spade.”

This was a spoiled boy, and you generally find them working in the general store or some city position, as their course in college has made them beyond the farm. I don’t blame these boys and do not see why their fathers send them to college to learn a profession only to work for wages or manage their own farm, working in the sun, mingling with laborers all

their lives, having nothing but hard work staring them in the face. If a boy is to be sent to college for training better train him in a profession which he can follow and be dressed like a gentleman at the same time. Now these young men get their diplomas but what part of a dollar do they represent but to work for wages? They may possibly take a position paying \$50 per month and board, but the outlook is that more have to work for \$30, as in the agricultural field you cannot go out and hang up your shingle, as do our professors, doctors, lawyers, architects, engineers, etc., and become prominent leading business men of the world. The animal husbandry course has produced some good feeders of cattle who get good money, but they have to be thorough cattlemen and like their work. Their future is nothing but following up the cow tail, and a hard life making records for some millionaire or superintendent who gets the credits of the records and the feeder is never mentioned.

To start farming it takes capital and stock to the amount of at least \$1,000, and this has got to be handled properly or go under. How many professional farmers do you hear of retiring, such as there is in our professions, unless they get government appointments or lecture on the subject, making money on the outside? These men are doing wonderful things on paper, but what are they doing for

the down to the earth farmer? Ask a farmer. It's a hard thing for any young man to take a course and graduate and then start out in a field that doesn't pay the salaries or incomes worthy of a profession. Now, is it a profession? My personal experience and eighteen years of observation lead me to believe that farming is a gift—it has got to be in the man, and if it is in the man he will make money. The idea of there not being money in farming is

Hilling the Ground for All Its Worth. If You Think the Good Farmer Is Not Making Money You are Mistaken. Potatoes, Sweet Corn and Cucumbers on the Same Ground.

wrong, for without farming this world could not exist. You think the good farmers are working for love; you are mistaken. If there was any possibility of a farmer figuring on market conditions he could make a fortune in short order. If you like to see a business man make a fool of himself, just sell him a farm.

As to orphan asylum boys, I consider it cruelty to children to farm out these small boys, as most farmers expect them to do a man's work; get them up in the morning early, keep them busy until school time; hurry them to school at the last minute and they are oftentimes late; come home and are put to work after school; all for board and clothes, people never realizing that they are children. If you take a boy give him an interest in a dog, calf or garden spot that belongs to him and everything to make it his own, and encourage him in every way, to make the farm interesting to him. When his calves mature pay him so much a quart for his milk, but he should take care of his own stock. Do this and the boys will stay home and take pride in their work, for they have an object. You can lead a horse to water, but you cannot make him drink.

Now if these young boys grow up, or in fact, for any young man, what better opportunity is there in life than to work on a farm? What business could a young man start at where he could save more money, be healthy and get a

start in life than on a farm if he is ambitious, honest and saving? We will take for an instance a young man started at \$30.00 per month and board. This is \$360.00 net. He spends \$9.00 per month for clothes, shoes and pleasure, or \$108.00 per year. This leaves him \$252.00 per year, or \$1,008.00 in four years. What position in the city could any man take and have the same amount in four years at \$15.00 per week? This is why the foreigners are so advanced to-day. They will come to work for you as a farm hand, and the first thing you know they own a farm, earned by thrift. A good example for the American boy. It is a mistake to look upon a farm hand as a degenerate, for these very degenerates become the chief factors of the keystone of industries.

CHAPTER VII

FIGURING

A GREAT many articles have been written on this subject, some by professors and others by men who actually maintain themselves on what they have raised, but any one can sit down and plan and figure out the profits they can make on a farm, on paper: what it costs to prepare, fertilize, and reap, and figure on the market value. But if you put those figures on a shingle, when it comes to harvest your crops, you will find the figures are washed away, because you cannot figure on the market for any perishable product, or the weather elements; only irrigation or intensive farming can overcome these, for you have got to have water, but the market figures cannot be overcome. Farm statistics really amount to nothing; they are based on experiments entirely different from what you meet in everyday farming.

PLANNING

Make three sets of plans—clear, cloudy and rainy day. Do no rainy day work when it is not raining, if there is inside work to do; do no wet land work when the land is dry, if there is dry land work to be done. Never cultivate wet land; for wet days it is better to clean your

harness, fix your tools, and you will generally find inside work staring you in the face, as a farm hand does not like to get wet. Remember they have only one or two changes of clothes and are not allowed to go into the kitchen and sit by the fire and keep warm. Work which cannot be done when the ground is frozen should take the place of work that can be done in the winter time. In rush seasons put nothing off for to-morrow that can be done to-day, but do nothing to-day that can be put off until to-morrow. Prepare a deep and thoroughly pulverized seed bed, well drained; break up in the fall if possible and cross plow in the spring to the depth of eight to twelve inches according to the soil, with instruments that do not bring up too much subsoil to the surface. I have seen a great many articles about subsoiling, but have never seen a good row of any one plant sown in a dead furrow that was not properly filled in; but for drainage the breaking of a hard pan subsoil has been beneficial to crops in places where water lodges. Use seeds of the very best variety, intelligently selected and carefully stored; do not let the seed catalogue reports excite your imagination. In cultivated crops give the rows and the plants in the rows a space suited to the plant, the soil and climate. Use thorough tillage during the growing period of the crop. Secure high contents of humus in the soil by the use

of legumes, barnyard manure, farm refuse and commercial fertilizer; carry out a systematic crop rotation with the winter cover crop if possible; accomplish more work in a day by using more horse power and better implements; increase the farm stock to the extent of utilizing all waste product and idle lands of the farm. Most farms carry more stock than they can feed. Produce all the food required for the men and animals on the farm if possible; keep an account of each farm product, in order to know from which the gain or loss arises, and by all means take stock of everything on your place once a year; put it down in your stock book, its cost and the place it is kept, from a curry comb to your harvester. If your man takes a wrench, hoe or seeder, charge them to him if he does not bring them back and put them in their places; have a place for everything and everything in its place; it is just the same as money. Do not buy machinery to stand out under a tree—better to hire the machine from your neighbor or hire the work done. There are too many farms with dollars lying all over the place for the elements to rust and wear, and when you go to use a machine in a critical time it breaks down and it takes a long time to get your castings from the factory and you lose half your crop.

Don't be like the farmer who, when his man asked him where his mowing machine was,

scratched his head and said: "Let me see; where I finished up last year." Or the man

Don't Buy Machinery and Let It Lie Under a Tree.

who decided to cart his manure every day, backed his wagon up to the manure pile, but

when he wanted to use the wagon again could not find it, as it had been covered up with manure.

A Place for Everything and Everything in Its Place. It's Just the Same as Money. Small Expense Shed, 25x30.

Now do not let the tractor bee buzz in your bonnet. While tractors are wonderful good things for some farms, you must first figure if it will be adaptable to yours. For vast acreages they are good, but on small field farms with rolling hills they are valueless, as it takes a great while to plow out corners and sometimes gets stalled in mellow ground. Remember you are not going to get a \$30.00 farm hand to run your tractor. He must be a thorough man who will keep all oil bearings clean. In my own travels I have generally found tractors

standing rusting under sheds for the want of some one to run them, or on account of not being adaptable to the place, having been purchased on the impulse of the advertising. If you must have one, buy the kind you can back up into the corners. Just because a man uses a tractor and modern machinery it does not make him a scientific farmer any more than the grocer who delivers his groceries with an automobile. He is progressive.

CHAPTER VIII

HAY

Timothy hay should be cut when in blossom. Better to start a little previous than have it over-ripe and woody; it is just something to fill up a horse, but loses its value in feed. When timothy and clover are sown together the clover should be cut in bud or full blossom; do not do as many farmers do, wait until they see the timothy heads come through their clover, for you will have rusty clover hay and lose half of the leaves, and this hay will give heaves to any horse. I approve of mowing clover in the late afternoon; mow what you can get in the next afternoon; the overnight wilt preserves the juices in your clover before the sun does the drying out process. Keep your tedder working in the forenoon; take up a handful of clover, wring it; if there is not much moisture when wrung tight get it in, as it will dry in the handling; salt it down with coarse salt about a quart to the load, broadcast over the mow; if stored this way the blossoms will never lose their fragrant smell and can be fed to anything.

The Weight of Hay.—In estimating the weight of hay, allow 540 cubic feet for a ton, if on the wagon or newly stored, but if well

settled in mow or stack, allow 512 cubic feet. Two hundred and seventy cubic feet of baled hay will weigh a ton. Some say 400 cubic feet of hay will weigh a ton.

ALFALFA

In sowing alfalfa you must have manure and inoculation on some soils. Prepare the ground and spread with manure about September the first; broadcast one ton of lime to the acre; sow in rye and clover. About May the 15th next spring, plow this under and roll the ground; every two or three weeks harrow with a disc harrow at each weed germination until July 25th, ready to be sown on August the first; it is best to inoculate your seed with a chemical inoculation which you can get from various firms; use as directed. I have had very good success in the growing of alfalfa. The best way to mix the chemical is in a galvanized tub; then spread on a sheet to dry; when dry put it in small bags and strike the bag against anything flat which will separate the seed which has a tendency to stick together after inoculation. This seed must be kept in the dark after inoculation. Sow with a sixteen foot barrow seeder, the only seeder that I have ever found to sow accurately. You will find the clover and the rye will help inoculation; it can be grown most any place if properly handled.

Harvest your alfalfa when you see new shoots branching out from the bottom whether in blossom or not; by this method you can get possibly four cuttings a year. Follow the same method as curing clover, but if the weather is cloudy better put in stacks and cap in the field until it sweats out. Alfalfa will not grow on any ground where water will lodge; drain your alfalfa field.

CORN

Corn should be planted from May the 5th to June the 10th, according to climate; should be kept absolutely clean; if it cannot be kept clean

A Sullivan Crew Ready for Work. Farmers From the Ground Up. Each One Has a Bank Account. "Go to it, boys!"

in rows better to plant in hills, so it will enable you to sow a cover crop between the rows of the last cultivation. A great many people leave corn until it is past ripe, but the proper time to cut your corn is when the grain sets starchy or has a slight glaze. Just take your finger nail and press it in the grain; if the milk comes out it is not ready. A good farmer can tell by the looks of the stalk and silk. By all means try and have it husked and cribbed by Thanksgiving.

To Measure Corn in the Crib.—Find the length, breadth and depth of the body of corn, in feet, and multiply these three dimensions together; then multiply the product by .63. This will give the heaped bushels of ears. Sometimes one and one-half bushels of ears are allowed for a bushel of shelled corn, and sometimes two bushels; the amount depending upon the shape of the ear, the size of the cob, etc.

QUANTITY OF SEED TO PLANT PER ACRE
FOR VARIOUS CROPS.

Alfalfa	20 to 25 lbs.
Barley	1½ to 2 bu.
Beans—	
(1) Bush Beans	1 to 1½ bu.
(2) Pole Beans	½ bu.
(3) Velvet Beans	1 to 1½ pks.
(4) Soy Beans (Drilled)	½ bu.
Bermuda Grass Seed	5 to 6 lbs.
Blue Grass	10 to 15 lbs.
Buckwheat	½ bu.
Cantaloupes	2 to 3 lbs.
Carrots	3 lbs.

Clover—

(1) Bur Clover (Clean)	10 to 12 lbs.
(2) Bur Clover (in bur)	50 to 60 lbs.
(3) Crimson Clover	20 lbs.
(4) Red Clover	12 to 15 lbs.
(5) White Clover	3 to 4 lbs.
Chufas	1 to 1½ bu.
Cowpeas	1 to 1½ bu.
Corn	1 to 2 gal.
Broom Corn	1 to 1½ bu.
Cucumber	2 lbs.
Essex Rape	6 to 8 lbs.
Garden Beets	8 lbs.
German Millet	25 lbs.
Hairy Vetch with oats, rye or wheat	25 to 30 lbs.
Herds Grass	8 to 12 lbs.
Jerusalem Artichokes	6 bu.
Kale or Borecole	3 lbs.
Kaffir Corn or Sorghum (drill)	12 to 15 lbs.
Kaffir Corn or Sorghum (broadcast)	40 to 50 lbs.
Lespedeza or Japan Clover	20 lbs.
Lettuce	2 to 3 lbs.
Millet	1 to 1½ bu.
Mustard	2 lbs.
Mangel and Sugar Beets	10 to 12 lbs.
Oats	2 to 3 bu.
Onions	4 to 5 lbs.
Onion Sets	8 to 10 bu.
Okra	8 to 10 lbs.
Orchard	15 to 25 lbs.
Parsnips	5 to 7 lbs.
Parsley	3 lbs.
Pearl or Cat-tail Millet	8 to 10 lbs.
Peanuts (in shell)	2 to 2½ bu.
Peas, Garden or English	2 bu.
Potatoes	8 to 10 bu.
Pumpkins	3 lbs.
Radish	10 to 12 lbs.
Rice	1 bu.
Rye	1¾ bu.
Sunflower	4 to 5 qts.

Spinach	8 to 10 lbs.
Summer or Bush Squash.....	2 to 3 lbs.
Sweet and Roasting Ear Corn	6 qts.
Teosinte	2 to 3 lbs.
Turnip	2 to 3 lbs.
Timothy	10 to 15 lbs.
Vetch, Winter or Hairy	40 to 50 lbs.
Watermelon	1½ to 4 lbs.
Wheat	2 bu.

For Sowing in Beds to be Transplanted

Cabbage	6 to 8 oz.
Cauliflower	6 oz.

CHAPTER IX

HORSES

HORSES for farming purposes must be good for three things—big enough to work, not too big to go on the road; should be of clean legged type with small hoofs, weighing about fourteen to sixteen hundred; a good looker when harnessed to the surrey or in all harness; one that can cultivate between narrow rows without damage to crops; that picks up his feet at the end. Such a horse in a year's time will save

A Typical Farm Horse. You Cannot Hook Him Wrong.

you dollars. By all means do not have a big, clumsy horse; he will do lots of damage and is a slow mover and you will lose time. Do not buy a truck horse for farming purposes—he is not in his place.

Cows

There is nothing known in farming that will pay immediately on investment more than good cows; they pay returns at once, and with reasonable care, you can sell them for beef after

The Farmer's Insurance.

their milking period is over, or for breeding purposes if well bred, heavy milking cows for at least one-half the purchase price. They may talk about disease in cows but the majority of cows are the healthiest animals in existence and do not die off as frequently as horses. It may seem singular, but in the writer's past eighteen years' experience with cattle, he has never seen a cow die from natural causes. He has never read of any one instance where any disease has actually been proven that came from the cow, but diseases have been traced to the milk through the cow, which has been obliged to drink stagnant or contaminated water or fed and handled by a man with infectious disease, but the germs have no effect on the cow itself—it should be charged to the handling of the cattle.

Bovine tuberculosis is one of the largest obstacles which confronts the dairy farmer of today and robs him of millions of dollars annually. It is a sad fact that there are but few farmers who can readily distinguish the apparent signs of this disease at the time of purchasing an animal unless such animal is in the last throes of the disease.

While we haven't an infallible method of determining whether the animal is infected or not, the tuberculine test will, in most cases, tell us before any outward signs have developed, but the most practical way of determining at

time of purchase is by giving each animal a thorough physical examination, which will cause one to reject animals which he would otherwise have purchased.

To physically examine cows the following parts should be carefully examined: The respiratory system, the udder, the superficial lymph glands, the reproductive organs and the digestive system.

At first the cow should be given a general examination, noting her general condition in relation to her age, care and amount of milk produced. Note condition of animal in walking or standing; see if the skin is loose and elastic as it should be. Feel the extremities such as horns, ears, limbs and teats. If they are cold the animal is not normal. Look for the bright, healthy eye and alert look, which is one of the best indications of health.

The respiratory system is the seat of the most trouble, and the next thing to examine. See that there is not an increased frequency in breathing. A cow that breathes sixty times a minute when not excited or exercised is not breathing normally. Listen for rattling sounds in lungs and throat and see that discharge from the nose is not above normal. Pinching the upper part of the windpipe is one of the best tests for tuberculosis. If a low, moist cough can easily be induced it is a pretty sure sign of its presence. This should not be confused with

the hacking cough of the healthy animal which sometimes follows the operation, especially with old cows.

In the United States the laws on the milk question are the most strict, principally in the state of New York. If a cow has a cough, that does not signify that the cow has tuberculosis, for they oftentimes cough after drinking and eating of bulk food.

The udder is the next part to examine. Regard any animal as suspicious that has unnatural swellings not due to injury, or one that has feverish quarters, or gives stringy milk (garget).

Tuberculosis of the udder usually starts in the left hind quarter, so that quarter should be given the most attention. Knead it and feel for nodular growths.

The superficial lymph glands are frequently affected in an infected animal. Feel glands on each side that are under jaw in back of jaw. There are four groups, but are not easily found unless affected and swollen.

The reproductive organs are the next to be examined as well as can be from outward appearances. Presence of the disease is shown by flabby, swollen condition of the vulva, a slight greyish discharge from the vagina, sinking of the broad ligaments. The lips of the vulva should be opened and color noted, which should

not be inflamed, but a healthy pink and free from excess mucus.

Tuberculosis of the digestive tract is quite rare, but when animals are so affected, absence of appetite and diarrhœa when non-laxative foods are given.

Tubercular animals are not necessarily a menace to the herd as long as they are not spreaders, but it is impossible to tell a spreader by her outward appearance. It is necessary to inject a sample of the sputum under the skin of a guinea pig and note its action. This procedure cannot readily be done by the average farmer, so it is advisable to make a deal with Jake, the bologna man, while the dealing is good, or Jake may have the whole herd.

While the farmer does not get enough for his milk from the dealer, he is generally using too much acreage for the milk he is producing, and the laws that control milk make it still more expensive to produce. While some of the laws seem ridiculous, the conditions under which some milk is produced are such as to warrant the passing of such laws, but this does not necessarily mean an expensive equipment. The honest, naturally clean farmer these laws will not affect, but the farmer who delivers his milk to the platform and on his return home fills the cans up with garbage, skim milk or whey deserves no mercy. This man's milk is rejected and he simply takes it to some cheese factory

and sells it. This fellow should be put out of business.

While the laws governing milk are fair, the rules of medical societies go to extremes for the producing of certified milk. In some instances a man with a mustache cannot milk in a certified dairy. Why not shave off his eyebrows, eyelashes, hair on his arms, etc.? Also, better look at his teeth and have them removed. God made hair grow on a man's face and never meant it to kill the man or anything. There would be more certified dairies but the good, broad-minded farmer cannot tolerate petticoat inspections. It is worse than chowder without any clams. Now milk is produced in the country where there's sunlight, which is a destroyer of bacteria. Milk is one of the best bacteria growing mediums, therefore should be handled carefully after it leaves the farm. It comes to a city with dirty streets, sewers, gutters, manholes, excavations, garbage cans, ash cans, cuspidors, kitchen sinks and some dirty bath rooms. A nest of bacteria caps are taken off and the milk is let stand on kitchen tables, sometimes put in pails or cups; in fact handled carelessly by the consumers. If any sickness occurs the milk is blamed the first thing.

You can go in almost any bath room and find tooth brushes exposed to the odors, and if the hair on a man's lip is alive, how about the hair on the tooth brush that is swabbed around

your nice clean, sanitary mouth? But in some cases the brush is cleaner than the mouth. Also drinking glasses which stand there for everyone to use, and the only washing it ever gets is a rinse of water. Now, Mr. Germ Bug, put these things in your pipe and don't let your pipe go out. Why not help the farmer and have an inspection of toilets and bath rooms, especially in the congested districts, or in fact your own home, and help stamp out these unseen little germs and diseases which are wiping out our children. Now, Health Officer, clean up a few things around home, and don't be too

Hugging a Milk Maid. Who Said I Kill Babies?

ready to look for diseases when you send your sick patients to recover, where they can get some farmer's good milk. The country Health Officer only sends his patients to the city, when necessary to a hospital, for recovery or to be butchered or killed.

It is conceded in the keeping of cows that it is necessary to have large acreage, but the most successful dairy of ten head of cows can be kept on a twenty-acre place and fed practically all from feed raised on the place. Some grain will have to be bought to balance the ration to increase the milk production, but cows milking from forty to sixty pounds per day can be kept profitably on twenty acres. Dairy men are making money with grades, but real money is in the best of stock, but you will have to milk three times a day every eight hours; you can increase the milk production of any cow by following the three times a day method. The writer knows of thirteen cows, milking eleven, forty-quart cans per day, or four hundred and forty quarts, and is ready to take any one and show him this stock.

The system of keeping cows on twenty acres is to alternate your fields—five acres of clover or alfalfa; five acres of ensilage corn in hills or rows; one acre rye; two acres of oats and peas; two acres of fodder corn, cut and fed in the stable, green. When oats are all used, re-plant Hungarian millet and feed green. By al-

ternating these fields throughout the summer you can get your supply of green food for your cow. For winter feed plant three acres of mangel beet, thirty-two inches in rows; one and one-half acres of carrots (long orange) planted in beds, fourteen inches apart and worked by hand; add three ounces of purple top white turnip seed to every pound of carrot seed; this germinates in 48 hours and you can immediately work your carrots before the weeds germinate, as the turnips will row the carrots for you and

When You Come to a Farm Section and Everything Looks Prosperous, Look for Cows.

you pull these for feed and feed after milking. Cows like these sweet turnips, and you do not have much carrot thinning to do. By purchasing some brewers grains and cottonseed meal for protein you can raise cheap milk. Do not let your cows out in day time, exercise them in the evening when the flies sleep.

By feeding all feeds in the stable, you are controlling the milk production of your herd; control the flies and you control bacteria. Exercise in the evening on small farm; on large farms pasture at night. When you come to a farming section where everything looks prosperous, look for cows, you will generally find them.

If the milk producers could consolidate, the city milk dealer would pay him his price or go without milk; let the producer just stop the milk supply for two days in any one city and he will find the uproar it will cause. Why should the producer be dictated to? Put up a cheap, plain sanitary dairy, cutting out all frills; the least obstruction the easier the sanitation. I have seen plans in dairies where you have to walk miles to feed your cows; get plans from some good substantial cattle man who has worked among his cattle; do not be like the man who gave his milk to an asylum because it cost him 15 cents a quart to raise it.

Keep your five acres of ensilage clean; use flat cultivation in hills or rows; you should have

at least twenty ton to the acre of corn suitable to your climate conditions; harrow out corn stubble and sow in wheat or rye to be cut green in the spring. Sow clover in the spring when the ground cracks, after mowing your rye or wheat for fodder; here you have your crop of clover for your winter feed. Your previous five acres being turned under in the fall for your next crop of corn; the cows will furnish you the necessary manure for your farm; use lime ten hundred pounds to the acre well harrowed in on all your lands. Rotate your land, first one side then the other; alternate your beet and carrot grounds yearly; first carrots and then beets, as this ground must be kept free from weeds. Use one thousand pounds commercial fertilizer in a row for beets; sow your fertilizer on top of your carrot rows, broadcast. It is necessary to use fertilizer to quicken the crop; it keeps the carrots and beets from getting rooty, which will happen in too rich, manured land. Store your beets in a good root cellar or pit, twisting off the tops, do not cut; your carrots must be thrown in the field in small heaps and covered with tops; it is better for them to sweat out before storing; in pitting them dig a pit not more than eighteen inches wide, three to four feet in depth, right across your lot and cover with straw. After coneing it up put one foot of soil on top and leave a handful of straw sticking out of the

top every fifteen feet for ventilation. To prepare root food for cattle it is necessary to wash them for large herds.

I have found the barrel system the best in use. This can be worked either by hand or by gas power. A simple method easily done, but keep your water free from mud. All roots should be cut in small pieces or mulched in a root cutter.

In some instances I have seen cut roots lodge in a cow's throat; the method I have used in such cases is by hose, putting it right down the cow's throat, with pressure, or striking the cow on the outside with a flat board to crush the obstruction; anything to stop strangulation,

The Man That Shouts Loudest That There Is No Money in Farming. This Is What He Calls Ensilage Corn.

but a mouth gaggett should be kept in every stable. By the use of this it enables you to put your arm down the throat to take away the obstruction.

Corn fodder cut up in small lengths is good feed, but better when shredded, if the crop is properly cured, free from mould. In storing shredded corn stalks in buildings it generally, in most instances, has a mouldy smell which is not liked by the cattle and really spoils the feed; it is better to stack all stalks whether whole or

By Gosh—20 Tons to the Acre on 500 Pounds Commercial Fertilizer—10 Tons to the Cow. Now, Boy, Will It Pay?

Method of Washing Roots.

shredded out-doors. The proper way to store shredded stalks is to build a crib of trees from the woods, about eight inches at the bottom to twenty feet high—space off six feet apart as long as you want your stack; width about twelve feet; stay your up-rights, line this with any old boards you have, leaving one end open for your shredder to blow your stalks in; pack and tread well right up to the end to the opening to the height required; put on a top of standing stalks, ridging it up to the center, to the extreme out side; take long poles and wire or rope together both ends, and put over the top, one running on one side and the other reverse; this will stay the top through all weathers.

COWS FOR TEST WORK

In selecting a cow for test work she should be big, strong and powerful, well veined, the more wells the better; should be started at least six weeks before calving and fed up to her capacity, the feeder knowing just what she will consume before coming fresh; the cow being seasoned to her feed and they will have no ill effects. I have seen the best records made by this method of feeding; when starting the test ten days after freshing you will have the cow up to the limit and do not have to feed her to it. One week before calving a cow should be fed laxative foods. Milking should be done

four times a day, every six hours on the set time; if you vary the time you will spoil your record; the temperature of the stable must be kept as even as possible. By all means do not let a noisy man or a man that will abuse your cows in your stable; keep her mild, gentle and contented and she will do the rest.

I do not approve of paying a fancy price for a cow that has made big records, for she will generally fall down with you on her second test and be good for breeding purposes only on her past records, providing she has not been forced. Buy them for their confirmation; if you do not know a cow, employ some one that does, for you cannot buy a cow because she has a nice head; always look over her business end and figure \$5.00 per quart when fresh and you are buying safe; always look for a long veined cow.

BALANCED RATIONS

There are all kinds of different methods of balanced rations; in my experience with cattle I have found no one balanced ration suitable for test work that is better than another; for test work it is the individual you have to feed. One cow will differ from another and has to be fed accordingly; their temperature should be taken twice a day, all water measured, food weighed; cow weighed each week and kept free from excitement and milked by one man. For

butter fat records the temperature must be kept up by stimulating food; in some cases it is not the cow but the record regardless of how you get it. The following rations I have tried out with good results, as a general herd food, for cows weighing one thousand pounds, giving twenty to twenty-five pounds of milk daily, on two milkings, but an increase of flow could be added to any cow of this type by using the three day milking method, every eight hours and increase the profits on your herd. For every additional three pounds of milk add one pound of the grain mixture.

NO. 1

- 35 pounds Silage (medium ripe)
- 10 pounds Mixed Hay
- 2 pounds Wheat Bran
- 2 pounds Cornmeal
- 2 pounds Cottonseed Meal
- 2 pounds Gluten Feed

NO. 2

- 35 pounds Silage (well ripened)
- 12 pounds Mixed Hay
- 2 pounds Wheat Bran
- 2 pounds Cornmeal
- 2 pounds Dried Brewers Grains
- 1 pound Cottonseed Meal

NO. 3

- 40 pounds Corn Silage (well ripened)
- 15 pounds Clover Hay
- 3 pounds Cornmeal
- 1 pound Cottonseed Meal

NO. 4

- 15 pounds Corn Stover
- 12 pounds Mixed Hay
- 2 pounds Wheat Bran

2 pounds Dried Brewers Grains
 2 pounds Corn-and-Cob Meal
 1 pound Oilmeal
 1 pound Cottonseed Meal

NO. 5

13 pounds Timothy Hay
 8 pounds Alfalfa Hay
 2 pounds Wheat Middlings
 2 pounds Hominy Chop
 3 pounds Dried Beet Pulp
 1 pound Cottonseed Meal

Substitute clover or alfalfa on all occasions;
 there is practically nothing in timothy hay.

SILLO

Nothing can equal this for cheap production
 of milk.

FARMER'S METHOD OF RAISING THE CALF

Every breeder or herdsman have their own method, but I have had the best of results by the following: take your calf right from its mother, after one nursing to clear the system; feed in the pail about one pint sweet milk every two hours; let the calf suck your finger in the pail and pull it out; the calf will soon drink. Care should be taken not to over-feed as it will cause stomach disorders; better feed with care and avoid trouble; put a small bunch of hay before your calf in a rack; it will soon begin to nibble. After a few days when the calf drinks well, give half whole and half skimmed milk, gradually decreasing your whole milk until you

are feeding skimmed milk; put a small handful of oat meal and bran in the milk. Have a small clean box in your calf pen with ground oats, corn meal and bran with a pinch of salt, rub a little of this mixture over the calf's nose and the calf will soon begin to eat the grain.

I feed skimmed milk for one year twice a day, always keeping in mind you want bone, muscle and size; do not stunt your calf for it will never recover. Before raising any heifer, regardless of its breeding, always look at the teats and see if they are well spread apart and evenly set; if they are drawn together better let your neighbor raise it under condition that you will buy it back when fresh if you desire, or fatten and sell to the butcher. Blooded stock must be killed on your place; there are too many cows that milk out of their rear udders and practically nothing from her four teats.

SWINE

There is money in swine and it can be raised very profitably by the following method: Good, warm, clean breeding houses; pens should be at least ten by ten, with a two by four joist extended around all sides, or pipe method, up from the floor eight inches and twelve inches from your side walls so your brood sows cannot lay against the wall. Have good clean shavings or clipped straw and you will lose no

Mortgage Lifters. What Can Be Done With Grades.

pigs by being laid or trampled upon; keep your sows gentle so you can handle them; by all means do not disturb your sows when farrowing, it has caused more young sows to eat their pigs than any one thing; once the habit you better kill the sow; better darken your pen. For maintaining twelve good brood sows you may take any one ten acre rough field, alternating it in four fields, two and one-half acres to the field, allowing a runway up the center, so sows can come to their feeding quarters. Have this well fenced by a good strong swine fence made for that purpose, leaving a gate opening in each field, this allowing you to pasture any field that is ready.

In field No. 1, plant rye in the fall; start to pasture about May 10th; lot No. 2, oats and peas; lot No. 3, soy beans; lot No. 4, rape and clover; pasture this, alternating fields as they are eaten off; re-plowing lot one to Hungarian millet; what you don't use, mow and put in your barn for winter feed. The little pigs should be fed in an off-set away from their mothers; the idea is to force the young stock to weigh one hundred pounds dressed in the quickest possible time, which should be no longer than three and a half months; kill and market same or sell on hoof regardless of market price, but keep your sows continually bred; ring your sows so they will not root. Give them one feed of grain a day. For winter,

feed five acres of corn, five acres of rye; ground rye and cob meal; no better feed, and cheapest in existence that I have ever raised; get one field in alfalfa as soon as you can.

To force young pigs use ground oats one-half, one-quarter corn meal, one-quarter middlings; you will have bone, frame and size; this has got them there for me and should for any one who tries the method; keep them fed so after eating that they lie down and sleep. In selecting young pigs for breeding purposes, carefully examine their breasts and count their teats; do not breed a sow with four teats; the more the better and you will gradually establish a line of long breasted sows; have nice long bodies, oval rumps, short legs as possible, broad shoulders, short nosed and pricked ears, and you will have some breeder. Keep your pen, when shut up, free from dampness as many brood sows get rheumatism.

FORAGE CROPS FOR SWINE

Dwarf Essex Rape.—In sections where alfalfa winter kills, and, providing it is desired to seed a crop that can be utilized the first year, there is nothing that compares with Dwarf Essex rape. It can be seeded any time from the first of March to the first of August, and providing reasonable judgment, is used in pasturing the crop, it will supply green forage well

into October. From six to eight pounds of seed per acre is all that is required and the cost is but 6 cents per pound. It is by all odds the cheapest crop to seed and is adapted to practically all conditions. The animals should not be turned in, however, until the plants are 10 or 11 inches high, and at no time should they be permitted to crop the plants down short, unless it is late in October when it is desired to clean up the field.

Dwarf Essex rape and soy beans with sweet clover make one of the best combinations, and the following mixture per acre, can be used to advantage: Soy beans, 1 bushel; Dwarf Essex rape, 6 pounds; sweet clover, ten pounds. The rape and sweet clover are mixed together, and distributed by means of a press drill, while the soy beans are put on by means of an ordinary grain drill run in the opposite direction from which the rape and soy beans were drilled. This insures an even distribution of the seed, hence a good stand.

Red Clover.—An abundance of lime practically insures a satisfactory crop of red clover. Fall seedings do the best and the red clover can be safely pastured the first year. Oftentimes it will not last more than two years, but as a source of protein it compares quite favorably with alfalfa and there is nothing more palatable than the juicy leaves of this legume. It certainly should have a place in the rotation on

every pig farm. Pigs in clover soon make hogs for the butcher, providing ear corn supplements such forage.

Soy Beans.—In the southern states the soy bean is rapidly gaining a foothold in their crop rotations and it is gradually pushing its way northward. It is an expensive and troublesome crop to harvest for seed, but this difficulty vanishes where pigs are utilized as bean harvesters. In combination with rape it makes a most excellent forage crop, and with favorable season conditions it is doubtful if any combination that might be suggested would excel in usefulness, these companion crops. The pigs will naturally eat the soy beans first, but careful observation goes to show that the porkers always top out their meals with a few rape leaves. The sweet clover may be omitted and the mixture recommended is as follows: Soy beans (Ito San Variety), 1 bushel; Dwarf Essex rape, eight pounds. The animals may be turned in when the rape plants are ten to eleven inches high, or if it is desired to fatten the animals it would be well to delay foraging until the beans are all in pod. If ear corn is used as a supplement for fattening animals, foraging in a field where this mixture is utilized, the gains will not only be rapid, but economical, and the profits will astonish the conservative farmer.

Oats and Canada Field Peas.—Oats and Canada field peas may be seeded early in the spring,

and can be pastured safely about thirty-five days after planting, providing season conditions are favorable. It would be well, however, to add six pounds of rape per acre to a mixture of a bushel of oats and a bushel of Canada field peas per acre, for the oats and peas are gone, the rape plants would take re-off for a week or ten days the rape would furnish green forage throughout the balance of the season. What is termed a "shot gun" combination is as follows: Oats, thirty pounds; Canada field peas, fifty pounds; Dwarf Essex rape, five pounds; sweet clover, eight pounds; red clover, five pounds. There is nothing that is more useful for brood sows in the early spring than the practice of permitting them to forage at leisure in green rye or wheat fields. This winter grain can be seeded in the fall after the forage crops have been killed by frost and in case barn yard manure is spread on the green rye or wheat during the winter months, it will take root early in the spring and supply an abundance of green forage. There is some question about the actual amount of nutriment the pigs are able to find in green rye or wheat, but there is no question about its usefulness as a succulent feed. It can be plowed under as a green manure crop if it grows past the foraging capacity of the pigs, and any one of the forage crops above mentioned may be seeded to advantage.

TO KEEP HOGS HEALTHY

No one should attempt to raise hogs unless he is willing to give them good feed, good care, and protect them in every way possible from disease. Worms, hog cholera, lice and canker sore mouth kill large numbers of hogs, especially little pigs. To prevent worms keep the following charcoal mixture before the pigs all the time:

Charcoal	1 bushel
Hardwood ashes	1 bushel
Salt	8 pounds
Air-slaked lime	8 pounds
Sulphur	4 pounds
Pulverized Copperas	2 pounds

First mix the lime, salt and sulphur thoroughly, and then mix in the charcoal and ashes. Dissolve the copperas in two quarts of hot water and sprinkle it over the whole mass, mixing thoroughly. Store this in a barrel under shelter, and keep some of it in an open shallow box where the hogs can get it as they wish.

Have a rubbing post with bags saturated with a solution of good disinfectant. The man who fails with hogs is the one who says—anything is good enough for the hogs, but the successful man will say—nothing is too good for the hogs.

CHAPTER X

POULTRY

A LITTLE game all by itself; some succeed but others fail, but it is conceded to be a sick man's game. This is a big mistake, for every dollar you get out of the hen you have to earn; this is why there are a great many failures. There are business men who have sons that they do not know what to do with, so they buy them a chicken farm. They go to a poultry supply house and some good salesman sells them every-

Blue Ribbon Winners Taken From Life. Owned, Bred, Conditioned and Shown by the Writer. These Kind Can Win Anywhere.

thing in the catalogue; they have visions of supplying hotels, restaurants and private trade at fancy prices; they put up houses, some good, others on theory; buy hens or pullets, crowd them in the houses, throw them grain morning and night and expect them to bring results, never realizing the care poultry has got to have to make it pay. Some have visions of blue ribbons; pay big prices for strings of show birds; come to the shows and win, but the breeder who sold them has no fear, as he knows the purchaser cannot breed or condition them, and you never hear of them again, for they do not come back, but take large space in poultry magazines, state their winnings and finally disappear entirely off the map. The boy was no good before his father bought him the chicken farm and is no good after, for he didn't mean to work anyway. If you are not looking for work keep out of the poultry business; it is night and day. There are two kinds of poultry business: one for the show room and the other commercial. Do not think for an instant that a man who can condition and breed show birds would be a success commercially, for the show game is a millionaire's hobby and the owner must expect to pay for that hobby and the man who can put birds across and win. The only men who make big money at the show game are the old breeders, and it has taken them years to do it. The commercial man is a man who can get the most

dollars and cents out of his poultry; a good producer of eggs, good feeder and grower of broilers, roasters and capons; this man has hard, thoughtful work; he may be seen going around scratching his head, and his employer immediately concedes he doesn't work. This man is thinking, his brains are working, contriving a way to get everything out of his poultry with the least expense; now this man may be a good producer, but can he sell his goods? Generally he cannot, for the best poultrymen are poor salesmen; you cannot expect any man to produce and sell at the same time. He cannot leave his poultry, for if he does they immediately go bad on him, so don't expect a poultryman to be a show-man, commercial man and a salesman combined. If your poultry man raises the product, you will have no trouble finding a salesman to sell the product. Don't worry about selling until you have something to sell. There are a very few commercial poultry farms that are really making money on egg production, but there are plants doing custom hatching which do a fair business, but seldom show a bona fide profit, as the advertising for the sale of these chicks takes most of the profit. But a man as an individual who goes into the enterprise himself and works himself, using all labor saving devices, can generally make it pay, but must give it his utmost care. Companies and private

individuals who are obliged to have their work done, seldom make it pay. The causes of these failures is that one man cannot take care of and keep properly the number of chickens to overcome his salary and current expenses, so the owner can make an interest on his investment. Poultry can never pay big salaries, as the largest percentage of the eggs come from the farmers, as a side line; where milk, swine and poultry are raised, a man cannot fail if managed properly; this combination farming cannot be beat; you cannot get the same results from one thousand hens as you can from a hundred; figuring on this basis will not work out. The writer would never encourage any one to go in the poultry business as a business, regardless of flattering reports, as they are not substantial; there are only odd places here and there that are really making a success of the same. It is conceded that fruit trees are good in a poultry yard, but from personal observation it is no place for fruit trees, as the ground becomes hard, lacks moisture and fruit dries right on the trees; for good fruit trees must have cultivation.

FRUIT AND ORCHARDS

THIS style of farming sometimes is the most disastrous, as no one can figure on a perishable crop; if you have cold storage you can possibly

make a success, but that success depends entirely on your market conditions. When fruit is abundant you cannot give it away; when scarce you should be able to store same with the best results; fruit with mixed farming will pay, but for a man with small capital to risk fruit alone is taking big chances; one storm and late frost have ruined many a promising crop. After one storm you will find your ground covered with your fruit and the profit on your crop faded away and the expense of spraying and care has all been for nothing. Without money keep out of fruit farming.

CHAPTER XI

INTENSIVE FARMING ON A SMALL ACREAGE

A good many people can make themselves a nice yearly income from two acres of ground, if intensive gardening is practiced, but this depends upon the location of the plot; this land should be spaced in plots and nothing but small garden truck grown, fourteen inches apart—such as the following: Lettuce, carrots, beets, leeks, onions and Swiss chard, and all small varieties of vegetables. You must have irrigation over the entire plots to make this pay, either by overhead or by hose leading from a direct outlet; in the fall, after clearing all crops from the land it should be put in cold frames, growing the same product as in the summer; must be near a small village where you can get all the manure required for the carting, but you will have to keep one horse working winter and summer doing this carting. Also a strawberry plot and about sixty head of chickens for laying purposes; you will soon create a demand for your product and customers will come to your place for everything you can produce. All running vines, such as tomatoes and cucumbers, should be trellised, running north and south; sweet corn, tomatoes, egg plants and peppers should be started in paper pots, in your hot beds, which could be made of card-board and

A Sullivan Garden on Two Acres of Ground. This Man Needs no Reference.
Would You Employ Him Without One? No!

transplanted as soon as the weather is settled to insure an early crop. Every available space must be used. Possibly one ton of commercial fertilizer will be required; the method of using this fertilizer, broadcasting on top of the ground after planting, allowing the rains, dews and natural gravity to carry it to the roots; while the manure alone will give you results, the object is to get your crops quick and another one on the ground. There is an opening for a garden spot of this kind in almost every village, and it will be a credit to the village as well as a profitable business for any man to go into it, but it means work. There are many men who could have just such places, but are working in factories and clerkships, never realizing the value to be obtained from a two acre home, thus decreasing the high cost of living by selling direct to the consumer. There are small garden farms located near cities and large villages that run their produce into the near-by market; the Italians and Germans are the leaders in this particular line of truck, and are using the ash dumps in adjacent cities and getting good results. Why not you?

WHAT CONSTITUTES A GARDENER

A gardener is a man who loves his garden, and any weeds that grow hurt him; the best gardener will fail if he is expected to fix locks,

Intensive Gardening. The People Who Feed the Country.

mend baby carriages, beat rugs, wash windows and is taken away from his work; many men can be useful but you must not condemn them if their garden is a failure, if by their good nature and usefulness they are kept out of their garden. Let your gardener make his own selection of seed; leave the garden entirely up to him—he will have seeds that rotate themselves, giving you a supply of vegetables throughout the season. Naturally you walk in your garden and you see weeds and you call your gardener and say, “John, there are weeds in the garden; you cannot be a very good gardener.” The gardener will tell you: “Why, Mrs. or Mr., I beat the rugs, run to the store, etc. I do not get time to do anything.” He gets angry and talks back, but will then stop and think and consider his family, and works night and day to catch up. The next week you call some expert to trim the vines and trees as you have lost a little faith in your gardener on account of the weeds; the expert starts to trim the vines, whether the season is late or not because he does not wish to lose the job. You order your gardener to help him. He says, “Why should I help him; I am your gardener?” as he knows the man is butchering the vines and every clip hurts him. Some of the vines die and, you call him and ask him why they are dying, and he starts to tell you it was too late to prune and gets angrier by the minute be-

cause you doubt him and finally will say: "To hell with your job." What you have done—you have broken the heart of a good gardener who knew his business; the question is now do you give him a reference? No; you state that he has a high temper, impertinent, cannot work with other men and this man is kept out of work because his employer knocks him; gets shabby and finally puts his family in a furnished room and hires out single to some broad-minded farmer and sends so much money each week to his family; after a year's work gets a fine reference from this farmer and starts to build up his lost gardener's reputation. Now, Master or Mistress, have you done justice or injustice to your gardener? There are some gardeners, good on flowers, vegetables and greenhouses; the combination is good but they are generally better on one particular line, i.e., excellent in greenhouse, flowers and propagation; fair on outside perennials and annuals and poor on vegetables; a man good on all the combination is invaluable and worth any price; it's a gift of Nature.

GARDEN SCHEDULE.

VARIETY OF VEGETABLE	TIME TO SOW		BEST GERMINATING TEMPERATURE	TIME REQUIRED FOR MATURITY FROM DATE SOWN	PLANTING DISTANCE		AMOUNT OF SEED, ETC., REQUIRED
	UNDER GLASS	OPEN GROUND			APART IN ROWS	ROWS APART	
ASPARAGUS, Seeds		April & May	60°	20 to 28	3 to 4 years		
BEANS, Dwarf, Bush		May to Aug.	75°	6 to 10	45 to 75 days		2 oz. for 100 ft. row, 1 qt. for 100 ft. row, 1 qt. for 100 ft. row, 2 oz. for 100 ft. row.
BEETS, Pole and Lima		May to June	80°	6 to 10	65 to 100		
BORECOLE (Kale)—		April to Aug.	60°	7 to 10	60 to 75		
for spring use.		Aug. & Sept.	70°	6 to 10	85 to 120		
BRETT'S SPROUTS		April to July	70°	6 to 10	100 to 120		
CABBAGE, Early		April to July	70°	6 to 10	100 to 125		
..... Late		May & June	70°	6 to 10	120 to 180		
CARROT, Early		April	60°	10 to 15	65 to 85		
..... Late		May to July	60°	10 to 15	100 to 120		
CAULIFLOWER, Early		April to June	70°	6 to 10	100 to 115		
..... Late		May to June	70°	6 to 10	125 to 150		
CELERY		April	60°	13 to 20	125 to 150		
CORN SUGAR		May to July	75°	8 to 10	60 to 100		
CUCUMBER			80°	6 to 8	60 to 85		
EGG PLANT		March	80°	10 to 14	125 to 160		
..... Early		April to July	70°	6 to 10	65 to 85		
..... Late		April to May	70°	6 to 10	120 to 150		
LEEK, RABI		February	60°	6 to 10	75 to 100		
LETTUCE		April to Aug.	85°	6 to 10	90 to 120		
MELON, MUSK		May to June	80°	8 to 10	120 to 150		
ONION, WATER		April & May	60°	6 to 10	120 to 150		
ONION, Seed		February	60°	18 to 24	90 to 100		
PARSLEY			60°	12 to 18	100 to 150		
PARSNIP		April to July	70°	5 to 10	50 to 75		
PEAS, Wrinkled		April to Aug.	65°	5 to 10	50 to 65		
..... Smooth		April to Aug.	65°	5 to 10	50 to 65		
PEPPERS		March	80°	10 to 12	125 to 150		
PUMPKINS		May to June	80°	4 to 6	25 to 50		
RADISH		April to May	60°	4 to 6	25 to 50		
SALSFY		April to Sept.	60°	6 to 12	125 to 160		
SPINACH		May to July	80°	6 to 10	60 to 75		
SQUASH		May to June	80°	6 to 10	125 to 150		
TOMATO		Feb. & Apr.	80°	4 to 7	60 to 75		
TURNIP		April to Sept.	70°	6 to 10	125 to 150		

MARKETS

A great many comments and illusions have been made over the hamper system of selling produce from the irrigated and intensive garden farms. This system is very seldom a success; on odd occasions you may find a man with a few customers, mostly friends. Look at it logically—the people who can afford to buy hampers are generally away in the country in the summer or dine out in the winter; the moneyed class have their own gardener who sends the goods from their own place. This class who stay in town and have chefs and cooks let them select their own vegetables, as a good cook does not like to have things handed to him, never knowing where he stands or what kind of vegetables he is going to have; then, again, the gardener has trouble to get a regulation of vegetables and generally fills up the hamper with the most plentiful things, possibly something the customers care less for. The poorer class buy from hand to mouth. When you look it square in the face, you see the problem will not work out. The market gardener has to lift the produce quick and it requires a great many distributors. That's one reason a public market never succeeds; the farmer cannot take the time and stand in the market to hand out his load to the public, as he would have his load all picked over and one-half destroyed by being

handled; he has no way of delivering a basket of potatoes if he sold them. This knocks the direct to the consumer idea flat, but the stands could be let to the farmers, they disposing of their own goods. There are farmers who have tried to rent stands in the public market and couldn't do so; it seems there is a certain clique that get these stands; the market is supposed to be open for the public to buy direct from the farmer. The farmer is solicited to patronize the market, but when he tries to rent a stand he is shut out; he can stand there with a wagon and have his load picked to pieces and one-half ruined for him to take home; it never will be done by the real farmer.

CHAPTER XII

WHAT CONSTITUTES A WORKING MANAGER

A working manager is a man who works on your farm leading his men, the same as is done with the general farmer. Men of this type can do this on small farms, but on large farms where a great many men are required they have all they can do to handle the men properly. Do not expect your working manager to be your bookkeeper, for if this kind of a man works with his men, it is next to impossible for him to keep books, except to put down the current expenses, etc. Do not expect him to sit up nights keeping books after his day's work, as it would soon finish him. If you expect your manager to work, keep the books yourself.

WHAT CONSTITUTES A HERDSMAN

A herdsman is a man who understands all feeding of the cow for advanced registry test work, balancing the ration to the individual, getting the most out of food consumed, both in fat and milk, and a good milker. No herdsman will let anyone but himself milk a cow that is on test work. He also must understand the Babcock test.

WHAT CONSTITUTES A DAIRYMAN

A dairyman consists of a good butter and cheese maker; on small places some milk and care for all stock; on large places they do nothing but the butter and cheese work. He must be a good, clean man, not only in personal appearance but in habits, as nothing will spoil butter quicker than carelessness and dirt. He should be able to feed, balance rations and understand the Babcock test work.

WHAT CONSTITUTES A MILKER

Must be a good, dry hand milker, able to handle about eight cows an hour; understand the grooming and washing of cows and keeping the stable in a sanitary condition—a thorough cow man. He must be a quiet, clean fellow, who does not abuse the cows; no cigarettes.

WHAT CONSTITUTES A FARMER

A man who can do anything on a farm, generally called a farm-hand; he must be able to milk, plow, know how to do all farm work. Now this man is no farm-hand—a man that can do these required things is a farmer, generally called a farm-hand to cheapen his ability. This class of combination man is invaluable on any

farm and should be the highest paid man, but is generally offered the lowest possible figure for his work. It is an unjustifiable mistake—he is worth more than any teamster, milker, poultry-man or gardener, as you cannot place him wrong. Why call him a farm-hand? A farm-hand is nothing more than a laborer or a harvest-hand, called in our state laws an agricultural hand.

WHAT CONSTITUTES A FARM TEAMSTER

A farm teamster is a man who cares for his team and handles all farm machinery without instruction. Is good on estates, under superintendents, who are not up in farm machinery work, but to the farmer is valueless. Farm teamsters never make farmers or get beyond their calling, as they detest cattle, and on all good farms you will find cattle.

CONCLUSION

It is the tendency of the government magazines and societies to improve the agricultural conditions of farmers. These societies consist of the most prominent millionaires in the country—the point of view is to show the farmer how to produce more crops or a system of loaning money. You never hear of a millionaire farmer failing, as he can always retire

The Farmer, the Most Abused Man in the World. Everyone Trying to Show Him How to Run His Business. The Chief Factor of the Keystone of Industries.

honorably. He starts his place with great ambition to have a commercial enterprise and possibly sends his son to take an agricultural course for future protection. He equips his place with every desirable thing and is going to

“show” the world. After a year or two he finds his enterprise is costing him a small fortune to maintain. He starts to think of a way out of it, for he cannot sell and come out whole. Now the easiest way is to donate it to his state for a college experimental station or farm school for the taxpayers to maintain, and is forever heralded as a man who has done wonderful things for agriculture, and possibly gets a government appointment in the Department of Agriculture or on some commission; but the poor devil who starts farming on small capital, puts his very life into his work, pays for his experience, and through unseen obstacles his money fails him on the eve of success, this man is heralded as a failure; but his experience qualifies him to be the most successful superintendent or farmer for some estate owner. The poor man’s loss is the rich man’s gain. If this man should get his second start he will succeed.

The government has passed a law for farmers’ loan banks, for the solvent farmer. Now I say that the farmer who has to go to any organization or government for money to run his farm had better sell his farm at once. A solvent farmer in any locality can get all the money he needs right at home. The government or an organization will not loan to a man who is not solvent. What the farmer can get: Fertilizer, machinery, manure and seed on time,

but is charged 5 per cent. for time price. He can win this 5 per cent. if paid within the time limit. I have known companies to extend credit to farmers for two years when they have had bad seasons. These men have paid their bills and flourished and did not own their farms. The solvent man can borrow money on notes if necessary and extend credit on these notes when due and is not obliged to mortgage his place. You read about co-operation to sell; there never can or will be co-operation in farming, unless it's a United States co-operation of all farms, as there is generally an over-production of farm products in the United States. What I mean by over-production is that different states cannot use their own production and are obliged to ship interstate. For instance, some of the New York City milk comes from Vermont, New Hampshire and all outside States; how can the New York State milk producers co-operate? You cannot co-operate on anything that is not staple, and farm produce is not staple; it cannot be manufactured. Farming is nothing but a gamble and you cannot figure on a gamble. It depends entirely on nature seasons. If the season is a poor one the farmer has no trouble to get good prices, if he gets a crop; if medium he gets fair returns; if a good growing season there is an over-production and he loses. If you cannot control production you cannot co-operate, and

you can never tell which product there is going to be a scarcity of. Most of these societies are composed of the most of the prominent men of the country who are not producing farmers. The producing farmer is not represented even in our state affairs; the men being appointed are either men representing publishing houses or men with technical farm education. Why not have the leading farmers of each county select their own farmer representative in all these hearings? The man who is actually farming for his maintenance, this is the man that can tell you real farming.

Now there are three kinds of farmers in most every section you enter—*First*, the producing successful farmer; he is up to the minute—seems to get his crops when others fail and makes money at every turn of his hand; is always on the job; owns his auto and is termed the independent farmer. *Second*, is the farmer who just makes a comfortable living; keeps his children looking good; gives them a fair education and is considered a good substantial man in his neighborhood, but doesn't get rich; through some unseen thing, it may be a little carelessness, laziness or lack of good judgment, or not getting up in the morning; termed the existing farmer. *Third*, is the experimenter, the farmer or business man book farmer who is always running to a book, experimenting and jumping from one thing to another on some

experiment he has read about or heard of which has been a success and adapted and made money on the farm it was experimented on. This man hasn't one settled idea; keeps changing his crops every year or settles on one crop; puts all his eggs in one basket and fails for he doesn't follow a rotation and says: "H——, there is no money in farming." No living man can please or work for this man; it's just this fellow who has thrown a forecast over the country, creating the impression that farmers lack brains. It's an unjustified mistake and unfair to the producing farmers, who are the very Keystone of Industries and Backbone of the Nation.

They laugh about the farmer
And picture him with whiskers, too,
But the man of the land is one grand man,
For his hand is feeding you.

AGRICULTURE

To the readers of this book the writer will endeavor to explain to them the importance and the nobleness of the farmers of the world. This world is supposed to be started with a garden; this may be true and it may be a fable, but we will say it is true; we certainly know this world was inhabited by white men; these men had intellect; they caught wild beasts and birds of different species and domesticated them; they found grain and natural vegetation in a wild

state; by collecting these things together and breeding and planting and cultivating them they formed tribes, for they found the ground would yield an abundance if these were cultivated and cared for, thus showing them the way to sustain their bodies and develop their brains, and then forming into tribes, known as the wise men of their day. The men of the present are the leaders in industries created through agriculture, hence the development of the world.

These are proven facts—when this country was discovered it was inhabited by red men; they lived on their ability to hunt and kill game, given them by natural instinct; they had no industries, no money and were obliged to seek new hunting grounds as soon as game got scarce or fight his neighboring tribe for the possession of theirs or starve. The white man landed and started farming and showed these people they could colonize in one spot and live, hence the trade with the red men for whiskey and food stuffs and created an industry in the trade of furs. This went on and as farms were started throughout the country the railroads started, first with caravans and then the men of scientific thought and genius developed the railroads; to this generation wherever farming starts industries follow; hence the interest the railroads take in the development of agriculture which made the world, stopped barbarism, civilized people and developed christianity.

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