

# Soils and Crops

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## Mash Means Money.

The problem of the poultryman today is to get his birds to eat enough mash. Mash, the high protein carrying part of the ration, should be before the birds at all times. Records of our high-producing birds show that they consumed practically equal parts of mash and scratch by weight. How was this done and how can it be repeated?

The mash should be made as palatable as possible, and the fibre in it should be kept down as low as possible. Adding alfalfa to the ration increases the fibre content very rapidly. The lower the fibre content, the less the amount of energy required to digest a given amount of food and the more food is left for production purposes. A good mash can be made by mixing equal parts by weight of the following feeds: Cornmeal, bran, wheat middlings, ground oats and a high-grade meat scrap. This mash is simple, easy to get and is well balanced.

To get the birds to eat this mash seems to be a problem for some poultrymen. However, if they will cut down the amount of grain they feed in the morning and keep the birds hungry, they will be only too glad to eat mash.

There are several methods of feeding mash. The first and most common way in the commercial flock is in the large V-shaped hoppers, similar to the self-feeders in such common use by hog raisers. Expert poultrymen have found that this type of hopper saves labor, as they can be built large enough to hold from a week's to a month's supply. However, they also found that they are feed wasteful. Birds will sit up on the edge of the hopper and pick out the most tasty particles of mash—the cornmeal and meat scrap—and will leave the bulky, less palatable feed in the hopper or throw it out sideways with their beaks. After some time you will find the feeding part of the hopper filled with dirty bran and the oat hulls, and that the birds aren't eating it. To overcome this you must clean out the hopper before the birds will take to the mash again.

A better type of feeder which has wide use is the V-trough feeder with the top partially covered so that the birds can't throw out the mash and waste it. Also, the birds can't select their food; they just have to pick and take what they get, as the opening is just high enough so the birds can look in. With this feeder you will find scarcely any feed wasted, and you will also find your mash consumption will stay fairly uniform. This type of feeder is very easily constructed, and when completed will have several features not found in the ordinary hopper.

There is a 2 x 2-inch rod directly over the opening in the feeder. This prevents the birds from roosting on it and from getting in and dirtying the feed. Care must be used in selecting this rod so that it will be straight, as it is mounted on nails so that it will turn around and make the birds fly off. If there is a slight bend in the rod it will not turn freely, and the birds will be able to roost on the top of the hopper.

Another feature that we have found to help increase the usefulness of this feeder is to tack a mason's lath along each edge of the top of the trough, so that it is flush with the outside but projects over the inside from one-fourth to one-half inch. This makes

it impossible for the birds to pull and throw any mash out sideways and waste it. We have been able to bring up the mash consumption of some of our flocks practically 100 per cent. by the introduction of this type of feeder. Birds that were only eating one and one-half pounds of mash a month are now eating three, and their production has been constantly on the increase.

We have found that a feeder of this type, eight feet long, filled once a day, will provide ample feeding space for 200 birds, and will hold a day's supply of food. However, the length can be increased or decreased to fit the size of your flock. Of course, these feeders must be filled every day. With this type of feeder you can get increased mash consumption by sprinkling some milk or buttermilk along the top of the mash in the hopper. The birds will taste this and eat considerable more mash.

Men using the large hopper method of feeding can also feed some of the mash mixture dampened with milk or water about noon, in some other container, trough or pan.

There are several other possible types of mash hoppers in use and on the market, but for the man who has a small flock the closed top trough type will give him the most satisfactory results.

## Pigs on Rape.

That at least 500 pounds of gains in pigs may be accredited to the acre of rape forage for a season has been determined in tests at the Ohio Experiment Station. The best results from rape pasture were secured when the pigs were given a full feed of corn, nine parts; tankage, one part, by weight; the amount accredited in this case being 628 pounds to an acre of rape.

It is usually supposed that pigs when fed corn alone on rape pasture would consume more of the forage than when supplemented with tankage. However, the pounds accredited age for pigs on rape pasture with corn alone, but on full feed, was only 459 pounds. With limited feeding however, where only three-fourths feed of corn was given, the gains amounted to 544 pounds for the season. Limited feeding with the standard rate of supplementing corn by nine parts to one of tankage, gave 522 pounds of gain to the acreage of forage.

The pigs used in this experiment averaged about fifty-one pounds each and, of course, the ones receiving corn, 9, tankage, one on pasture, made the highest daily gain, 1.47 pounds. Limited feeding of corn alone on rape forage brought a daily gain of 1.06 pounds. The lot of the same weight fed in dry lot with a ration of corn, 9, tankage, one, made an average gain of only nine-tenths of a pound; hence there is a difference of more than half a pound per day per pig in favor of balanced ration on rape pasture.

These tests show that it pays best to feed supplements of corn on rape pasture. When hogs are being raised for breeding stock, it will be cheaper to grow the hogs on a limited ration on rape pasture as the concentration required per 100 pounds gain are less. However, it pays to use some tankage in the ration. In this experiment the pigs fed corn alone while on rape pasture required 325 pounds of concentrates to every 100 pounds of gain made.

# Poultry

One of the important factors in the success with hatching eggs during the spring is the care of the breeding stock during the winter. Hens that are forced for eggs in the winter cannot produce the most hatchable eggs in the spring. Birds that are too fat will produce eggs lacking in fertility. If they are enclosed in small yards and do not have sufficient exercise it will injure the hatchability of the eggs.

Green food is a tonic to the hens during the winter and helps to keep them in condition to produce fertile eggs during the season of incubation. Exercise in a deep straw litter helps to keep them in good physical condition. Year-old and two-year-old hens produce the best and most vigorous chicks. They are naturally apt to take a rest during the winter after the previous summer's laying and that rest gives their systems a chance to recuperate and they have the vitality to produce hatching eggs with a strong spark of life. The pullets which have been fed for eggs during the winter cannot produce hatching eggs that are as valuable for that purpose as the eggs laid by the hens. That is why it pays to keep both hens and pullets. The hens are to be the breeding stock which rests in the winter, while the pullets are to be the producers, which bring in the winter egg money.

Many failures with poultry result from poor hatches and the mortality among weak chicks. Usually the incubator receives most of the blame. And the real reason is often a lack of vigor in the breeding stock. One of the poultryman's aims must be to

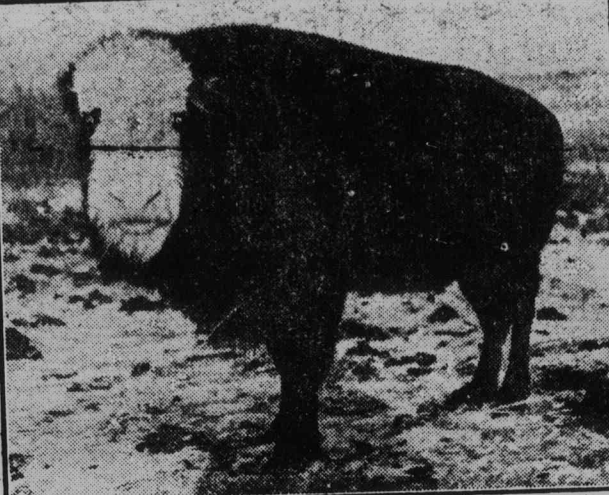
keep the breeders vigorous during the winter and thus begin the plans for the spring hatching season long before spring arrives.

# The Dairy

Many pigs and calves are lost each year, especially in the winter, because the breeding stock was kept confined too closely and not allowed to exercise freely. Animals seldom refuse to go out when given the opportunity; if they do, they need to be forced. They will maintain a better appetite, their health will be better, and the air and sunshine is highly beneficial. Some farmers force the breeding stock to take daily exercise, making them go certain distances to get feed or water. The little lot back of the barns makes a good winter range and yard for breeding stock.

Clean milk can be secured with milking-machines if proper precautions are taken. These precautions are such that they are within the limits of the ability of every dairyman. The all-important principle which must be kept in mind is strict attention to details. No matter if a few essential rules in the care of the machines are carried out to the letter, if one should be occasionally neglected the results are sure to be irregular. That is why some of the dissatisfied users of milking-machines have sounds for complaints. The fault is with the users. If the machines are properly taken care of they will give satisfaction in producing clean milk.

An optimist is a man who can eat a bowl of soup at a church supper and then say, "Well, maybe the center was in some other dish."



FOR GREATER BEEF PRODUCTION

Picture is of a "Trialla" a cross between a buffalo and a domestic cow. It is claimed by live stock men making breeding experiments that about 250 pounds more prime meat can be obtained on the shoulders of the animal by this cross breeding.

# Horse Sense

When the horse is obliged to stand idle outdoors in cold weather for any length of time it should be well blanketed. This is particularly true of clipped horses. Some horses are blanketed continually to keep them clean, and to make their coats glossy. This is wrong practice, for, in the first place, the dirt in a horse's coat originates for the most part in his skin, hence the blanket cannot keep it out; in the second place, the blanket does not make a true gloss on the coat, but only a temporary one, which is soon lost when the horse goes out in the cold. Liberal use of the curry comb and brush are the best means of obtaining a clean and glossy coat.

## Hatching Brown-Shell Eggs

Selecting eggs for setting or hatching is one of the most important phases of the poultry business, for the quality, size and egg-producing abilities of our next laying flock depend on this selection. It is equal in importance to the selection of our breeding heifers or our breeding sows, ewes or mares.

In this respect the brown-shelled egg-laying breeds have a distinct advantage over the breeds that produce white-shelled eggs, for the tint and richness of the brown color can aid us in making wise and profitable selections.

Most farmers, and many poultrymen, select the darkest, richest brown-colored eggs for setting, believing that they have secured the eggs from their best layers and from their truest breed-type hens. However, the opposite is the correct method. We find that a hen that has laid heavily all through the winter, produces eggs, in the spring, that are not so highly colored. Indeed, many of her eggs are only tinted or speckled. The strain of manufacturing a large number of eggs has told on her, and the coloring matter which goes into her

eggs has been heavily drawn on and therefore is reduced. The eggs from those of our flock who have spent the winter loafing and eating our profits will start laying fairly well in the spring, and their eggs are the best colored. But we do not want to raise our chickens from loafers.

Select the lighter-colored eggs. They are from the highest producers we have, and it is from such stock that we want our next heavy-laying pullets to come.

## Government Stock in the Show Ring.

Everybody will agree with the Dominion Animal Husbandman, who writes an interesting article in the Agricultural Gazette of Canada for November on "Federal Exhibits in the Show Ring," that the exhibition of good stock of any breed, whoever the owner may be, is the most potent kind of advertising for that breed, and that Canadian interests could in no wise suffer by a creditable showing of Government stock at the greatest stock shows in the world. The article referred to is a sort of defence of the action taken by the Experimental Farm system in making entries at various fairs, local and provincial. Exception to this course has been advanced on the ground that it is a case of the people competing against the people. On the other hand it is desirable that farmers and the public generally should know what is being done with the money provided by them. As Mr. George B. Rothwell, the Dominion Husbandman, suggests, if the entries can top the classes there is the best kind of evidence right in the spotlight of publicity that the public are at least being supplied with a run for their money. Mr. Rothwell lays down certain restrictions under which such exhibits should be made. He also details certain successes that have already been achieved in the show ring by the Experimental Farm system.

## Better Farmhouse Floors

BY D. WILLIAMSON.

"I'm going to build a farmhouse," you say, or "I'm going to remodel this old farmhouse."

Very good; you get your plans, pore over catalogues, consult with your contractor, then set to work. The walls are to be hollow tile, we'll say; the roof, asbestos shingle; electric lights are to be put in; a vacuum-cleaning system installed. "Oh, I'm going to have everything right up to the very last minute!" you tell your neighbors.

But, hold on; how about the floors? Are you going to use the same old sort that your grandfather put down when he built? No, I don't believe you are; I'm sure you want better floors to match all the other good things. And so I have a notion you'll be interested, if I tell you what I've learned about modern floors from practical experience.

Hardwood floors, properly laid, are a splendid investment, save a lot of housework, and with good care are almost everlasting. In a new house I always lay a good level floor of cheap pine boards; then, the very last thing, when all other work is done, I cover this with building paper, and lay the hardwood floor. At present prices of lumber, the thin flooring (three-eighths or half an inch) is the thing to use; but be sure that the ends as well as the edges are tongued and grooved, else it won't lie level. As for the material, that depends on circumstances; I have used both white oak and hard maple, with excellent results. There is very little choice, when all things are considered. The oak has rather the prettier grain, especially if quarter-sawn; but it is more expensive. The cheaper grades of maple have ugly streaks and marks; but they wear just as well on a kitchen floor as the more costly. And there are other kinds of hardwood that will give good service and satisfaction.

In an old house the floors have usually sagged, so you will need to lay nailings-strips of different thickness to level up the new flooring. Therefore, very thin flooring will spring and bend when walked on, since it is not lying flat on the rough floor;

three-fourths-inch is the least I can recommend for that purpose.

I generally scrape my floors, but this is not absolutely necessary, and is quite expensive if properly done. Planing a hardwood floor, however, is the worst thing you can do; even a very sharp plane-bit will tear the surface, whereas a scraper leaves it satin-smooth. Professional floor-scrappers wear rubber shoes, or go in stocking-feet, so as not to mar the unfinished floor with shoe-nails.

After scraping I always fill the pores of oak with some good paste grain; pine, maple, or any close-grained wood will not need this; then, for any hardwood, I put on two coats of shellac, sandpapering each coat lightly. When the shellac is dry, I smear on some floor wax, and polish with a weighted brush that comes for the purpose. Every so often, when the floor looks dull, some more wax is rubbed on and polished; if this is carefully done every few weeks, your floors will never show a sign of wear, and will never need refinishing. Soft-wood floors can not be satisfactorily waxed; they must be varnished and kept varnished.

But there is another modern material which I have used with splendid results—composition flooring. A special cement (there are quite a number of good sorts on the market) is spread down and smoothed like a concrete sidewalk; any good cement-worker can do this. The base-board and entire floor are all in one piece; there are no joints to hold dust and dirt. I have laid this material over concrete, new board floors, old board floors, etc., and it has always worked well. The usual thickness is about three-eighths of an inch. On a wooden floor we usually nail down chicken wire to reinforce it; on concrete this is necessary. Some of the manufacturers claim that their product does not need the chicken wire under any circumstances. Composition flooring comes in various different colors, and is waxed like hardwood; the only objection that I know of is that it is a bit slippery when highly polished.

## The Welfare of the Home

What is the Very Best Inheritance That We Can Leave Our Children?

Someone has said that boys are assets and girls liabilities. For many centuries and in many lands this has been the general sentiment and the care and training of each has had this mistaken idea for a basis. Step by step, with unyielding persistence, the girls have made progress, and now in the twentieth century they can claim equality with their brothers. Our country is not rich because of its houses and lands, mines, stocks and bonds, but because of its boys and girls. Knowing then the value of these same boys and girls, how are we rearing them, training them and guiding them? How are we fitting them for their greatest usefulness? Never before in the history of the world has there been so much serious thought and earnest effort in the development of these human plants.

Luther Burbank, the great horticulturalist, says that the best place to bring up a boy or girl or a plant is in the country, the nearer to nature the better. So farm children start with no handicap. They have without money and without price, sunshine, fresh air and blue sky, and while with these only they can hardly be self-supporting, without these they will not need support long. On the farm, the child learns to work, unless he happens to be a most skillful shirker and even then he is apt to take a few moral lessons in doing things. The moral value of work is unquestioned. Steady, persistent work has done more to keep the world clean and wholesome than any other force in it. Children on the farm learn many kinds of work. They learn to meet every-day emergencies intelligently and to adjust themselves readily to changing conditions. They have fewer temptations. There are fewer opportunities for careless and unnecessary spending and the habit of right saving is one of the sines of character. Farm life is not artificial; there is time for realities only. In business, the young man and woman from the farm is at a premium, because the employer knows that on the farm they

have been learning some earnest lessons. They have gone to bed early, begun the new day early and have been thinking of other things than just to have a good time. In business, the thing today that is in demand is character coupled with intelligence. And this, more than any other place in the world, the life on the farm should produce. These are some of the advantages to be gained from country living. They are great advantages.

Now what are the limitations? Why is it that a steady stream of the best blood of the land has been pouring into the towns and cities for years? Why is it that boys and girls look away from the farm with longing eyes and hungry hearts? Why is it that, too often, their interest in farm life is dead before they enter the teen age? These are important questions to ask ourselves. We have held farmers institutes. We have studied many problems—all earnest and profitable. We know how to give our bean crop intelligent care; how to train and guard our young cattle; our cows have recommended food and balanced rations. No chances are taken to mar their future usefulness. We have thrown a searchlight on all subjects but the most vital one of all, the Home. We take the best farm magazines. How many do we take which teach us how to rear our children? This father and mother business is the greatest, the most complex, the most subtle and the most worthy in the whole world. Too many of us have begun it without preparation and continued it with great indifference.

What is the best inheritance we can leave our boy and girl? Twenty acres? Forty acres? Two hundred acres? No, decidedly not! What we should give them and the best that we can leave them—a clean healthy body, an intelligent mind and a pure soul. With this, they have every chance for success and happiness. Without them, they will be shipwrecked early in the strenuous voyage of life.

## Silent Service.

In the excitement and worry of mother's sudden illness the dinner dishes had been forgotten. Eleanor thought of them with a sudden pang as she paced the corridor of the great hospital, waiting for the doctor's verdict, two hours later. She did not leave the hospital until a quiet, calm-eyed nurse had assured her that her mother was better; that she would live.

It was after five o'clock when she walked in at the front door of her house, and again she thought of that table of unwashed dishes. How good the girls had been to her, and how sweet and sympathetic they were! They had volunteered to do anything in the world for her that they could. Phoebe was the only one among them who had not seemed eager and anxious to help. She was disappointed in Phoebe.

She opened the door of the living room and stared; everything was in perfect order—the curtains at just the right angle, and not a speck of dust anywhere. She walked on through to the dining room. Again she stared. The table from which they had so hurriedly risen to take mother to the hospital had no unwashed dishes upon it. It was set with a spotless cloth; the silver and the glasses shone. There were clean napkins, and a bowl of nasturtiums glowed in the centre of the table.

She walked through the dining room into the kitchen. The fire burned brightly; something was cooking on the range; and there by the table sat a little, quiet, brown-eyed girl, in a simple blue house dress and a big apron, slicing potatoes.

"Why, Phoebe May," cried Eleanor, "is it you?"

"Yes; I stayed after the others went away," said Phoebe, smiling. "I know how hard it would be for you to come back to unwashed dishes and have to get supper. I made a custard, and, if you like, we can have biscuits. I have the potatoes nearly ready to go on, and I found some cold meat in the refrigerator."

Eleanor sat down. How tired she was! And yet what a stay and a prop was all this cleanliness and order—and Phoebe's smile! In a flash some lines of Lucy Larcom's came into her mind:

If but one friend has crossed thy way Only once in thy mortal day, If only one life's best surprise Has opened to thy human eyes, Ingrate thou wert indeed if thou Didst not in that rare presence bow And on earth's holy ground, unshod, Speak softer the dear name of God.

Fears rushed to her eyes. "Phoebe," she cried, "did you do all this?"

Phoebe smiled again. "Why not? I am your friend, you know, and friendship stands for something." She paused, then continued: "I'm not beautiful like Nina and Gladys. I can't sing as Kate sings. I can't make bright, funny little speeches as Margaret does. But I can wash dishes and put things in order for you. I don't expect you to love me as you do the others. I'm so insignificant and plain and commonplace, but, oh, I love you!"

For a moment Eleanor did not reply. She had had her dark hour, but it had not been the other girls that had led her out upon the sunny slope of hope and courage. It had been plain, silent little Phoebe. She put both arms round the slender figure enveloped by the big gingham apron. "So many dishes, and you washed them for me!" she said brokenly.

## High Speed for Grindstones is Dangerous.

I had a power grindstone that was run from a three-inch pulley on a line-shaft. This gave me just the right speed for ordinary purposes, but as I was in a hurry, and my ax was full of nicks, I moved the grindstone to a twelve-inch pulley on the same shaft. I knew this would give me more speed and thus I could grind the ax down faster.

I started grinding and was well pleased with the effect. The nicks were being quickly ground away. The red-hot bits of steel flew into the air like fire from a Roman candle.

All at once the ax flew from my hands. There was a crash, and I found myself on my back on the floor. I thought I had run the stone at too high a speed, and it had broken, hurling a part of it through the side of the building, tearing a hole large enough for me to walk through. The ax, which was caught by the flying stone, crashed through the side of a power washer that stood a short distance away.

A piece of flying stone struck me in the stomach, knocking me to the floor; but I was not in the circle of the stone's motion, I escaped practically unhurt. The damage done to the building, washer and grindstone cost me more than \$50, and I had to go to a neighbor's to finish grinding my ax.

I learned a little lesson that I am not likely to forget. Grindstones were not made to run at high speed; from sixty to 100 revolutions a minute is plenty fast enough. I find it pays to run the grindstones by power, as it saves one man's time in the busy season; but in the future I will be careful about running the stone too fast.

## Beat the High Cost of Machinery.

Do you have any machinery out in the weather? Drop the work you had planned for to-day and put it under cover. This part of the equipment for farming costs more to-day than ever before in history. This makes necessary greater care if we will avoid excessive cost. The machines which we buy to-day are much more intricate and complicated and thus more damaged by weathering than those of previous years. One-eighth of the total investment saved each year your machinery is properly cared for, is a very conservative estimate. The added satisfaction and saving in operating light-fitting, smooth-running machinery needs no argument for its proof. No machine can stand out in the weather and then operate efficiently the following season.

If you despise a man's creed and are not far from hating him