Soils and Crops

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Poultry Feeding Problems.

Many farmers have the wrong opinion of dry mash feeding for poultry and believe that it must be an expensive method. At first thought it seems as if the hens would gather about the hopper and eat all the time. But this is the way it works out: The hens occasionally take a bite of the mash. Then they have to drink water. The mash is dry and cannot be gorged down. After a hen has taken a few bites of mash she is ready to hunt around for other food.

The mash is not sufficiently appetizing to keep the hens from searching for other food. Hens that have been without mash might consume much more than usual when it was returned to them. But if the hopper is always full they soon satisfy their appetites and then only eat at intervals. The mash hopper insures every hen an opportunity of obtaining egg-making material at some time during the day.

When hens have mash they do not need so much other grain. Enough protein cannot be given to the hens in the form of hard grain. If they have the mash they can eat the materials needed to produce eggs. The use of mash saves enough hard grain to make its use practical. It also enables the hen to lay eggs and if mash feeding was more expensive than using hard grain, it would still pay to use the mash. The profit with poultry is the difference between egg receipts and feed costs. A cheap ration might bring no profit because of low egg production. A well balanced ration brings eggs and without eggs to sell there is no profit in the hen business, even if the feed cost is close to zero.

When there is plenty of sour milk the beef scrap or other protein in the mash can be cut in two. Some farmers find it a hard problem to feed sour milk in a sanitary manner. If the milk is placed in low dishes it is soon full of litter and very unclean. Dirty milk can be a cause of bowel trouble. It pays to place the milk in crocks on low wooden stands. These crocks can be scalded and kept free from dirt and gummy material. They are rather heavily and not easily tipped over. They are low in height so the hens can drink the milk to the bottom of the dish.

We have used galvanized pails for sour milk but the hens cannot drink to the bottom of the pail. They may roost on the edges and tip pails over. The dry mash from their bills settles in the bottom of the pails along with other dirt and some of the milk may have to be wasted when the pails are rinsed.

Some poultrymen find it a problem to keep hens from wasting every material that is served in a self-feeding hopper. The hens seem to have a mania for pulling out mash, oyster shells or grit until the hopper is emptied in the litter and much of the material wasted. This can be avoided by making a lip with a small piece of board on the front of the hopper. Then the trough of the hopper can be deep enough so the hens have to reach down for the material. If they still waste it, a piece of fine mesh poultry wire can be tacked over the opening so the birds will have to peck through the openings and only be able to obtain the material that they eat.

The clogging of dry mash hoppers is a problem if they have narrow throats. The remedy is to build them wide enough so that the mash will not often clog. Even then it is necessary to watch the hoppers occasionally and see that the mash is feeding down as it is used. A stick several feet long can be kept in a hopper that clogs and be used to break up the mash. That takes time and it pays to build the hoppers so they will seldom fail to let the mash slip down as it is used.

When old and young poultry use the same farm range it is often a problem to keep the chicks growing rapidly. The old birds crowd them from the feed hoppers and frighten them at feeding time. It pays to construct a dry mash hopper inside of an enclosure protected by slats so that the young birds can enter while the old ones are excluded. The chicks soon learn where they can feed unmolested and an improvement will be noted in their growth.

Such an enclosure can also be used for the water dishes and sour milk crocks used by the young growing stock. Of course, it is best to have them on a separate range but these small feeding yards are very useful on the general farm where all the poultry of all ages are allowed to run together.

Some breeders use wet mashes and find trouble in keeping the poultry house clean and the feeding troughs in good condition. We believe that this problem can be avoided and the poultry houses kept more clean and dry if no wet mashes are used. The birds grow and lay on dry mashes and as such mixtures save much labor and seem to keep the birds healthy we can see no necessity of mixing up much moist feed. Of course, when there is an abundance of table scraps they can be made more appetizing to the hens if they are made into a moist mash by the addition of bran or the dry mash mixture used in egg production.

Preparing Market Lambs.

In the mind of the packer's buyer, when he enters a pen of lambs to make a bid on the lot, is the knowledge that the consumer wants a tender, juicy, palatable piece of meat. So according to the quality of the lot, i.e., its fitness to give this kind of meat, he makes his offer.

If there is a good proportion of wethers in the lot he will pay more because he knows they will yield a higher percentage of the choice cuts. They will be better developed than the ram lambs just where the meat is of most value. The backs will be better covered and the loins will be fuller. In ram lambs the development will be in the neck and shoulders and this is cheaper meat than the back and loin cuts. In addition the flavor of the meat from ram lambs puts it at a distinct disadvantage as compared with that of the wethers.

By the use of pure-bred rams there has been an admitted improvement effected in the quality of lambs offered on the public stockyards within the past ten years. Some districts have reached a higher standard of excellency than others. This is very clearly brought out by an analysis of the receipts at two stockyards over a period of two weeks this fall. Of the lambs offered at one yard 55 per cent. were graded "common," while at another yard only 5.5 per cent. were placed in that class. Breeding to a very large extent is responsible for the difference. The producers have profited by reason of the increase in price which the good lambs command, as instanced by the difference of $2.40 per cwt. in favor of the lambs classed "good" for the period.

There is, however, as yet a great neglect on the part of sheep raisers in the matter of docking and castrating of male lambs. The former practice adds much to the uniform appearance of a load of lambs and at the same time minimizes the danger of lambs becoming infested with maggots due to dirty wool.

One has only to watch a number of lambs gathered together to see what happens where castration is neglected. If in the field the ram lambs, in addition to not feeding themselves, constantly disturb the others and the consequence is they merely hold their own in weight where they do not fail. The same restlessness is observed in the shipping car or in the alley at the yards. The shrinkage in transit is great. As the season advances this condition becomes aggravated and the breeder who wishes to keep his lambs for a later market finds it unprofitable to do so because of the unsatisfactory gains they make. He is the loser in two ways: first, because the lambs have not made economical gains, and, secondly, because lacking quality, they bring a lower price.

How I Solved the Pasture Problem.

For the past four years we have had a long dry spell every summer. My pasture—mostly ravine and rough ground, has dried up until the little grass left was fairly brittle and looked dead. What to do for green feed for cows during that period was the question. I solved that problem this year.

I had a piece of yellow clay ground too poor for corn, and no manure to spare for that piece I had a quantity of soy-beans and some kaffir-corn seed. I plowed the piece the last of May, harrowed it once, sowed the soy-beans broadcast, broadcasted the kaffir corn over the same ground, sowed a small quantity of pulverized sheep manure fertilizer, harrowed the ground again and waited for results. I thought I might get a little green feed and at least get a growth for turning under later on.

That stuff came up and grew amazingly. I began feeding from it about the middle of July, mowing off just the amount needed for a day or two at a time. I fed green feed from that piece until the last of September when the fall rains had made the pasture good again. The stock ate it clean, stalks and all.

I had only enough soy-beans for about half the piece so had kaffir corn alone on the other half. The first of October I cut the remaining kaffir corn by hand and shocked it. There were twenty-four big shocks of feed. The kaffir had grown to about four feet tall at that time and headed out with an abundance of ripe grain. I am feeding it now to the cow and notice that she gives more milk.

I learned some lessons through this experiment. Here they are for your benefit:

First, I used Ita San soy-beans and they ripened too soon and shed their leaves. I shall use a much later variety next year as the object is not seed but forage. The stock, though, ate the dry beans stems, pods and all. Also I shall try sorghum instead of kaffir corn in the combination on a small piece but shall stick to kaffir for the main piece. I have an idea sorghum will make a heavier forage and cure easier.

I might mention that where I mowed first, the kaffir grew again and got nearly two feet high by frost, so I got my cover crop after all. Caution: this second growth of kaffir or sorghum must not be fed and stock must not be allowed to run on it as it generates a deadly poison after frost.

Here are the big advantages: Plenty of green feed to tide over the period of dry pasture; easily put in with the minimum of labor; no cultivating to do; any left over after pasture becomes good again and may be cut, cured and stored for winter feed. It makes the best feed for cows as the grain is right with it. My hogs eat it green or dry, stalks and all. More green feed and more cured dry feed to the acre than any other one plant or combination of plants I ever knew of.

Poultry

The marketing of thin chickens is not conserving our meat supply, nor is it the most profitable method to producers. Present prices of market poultry admit of the liberal use of feeds, and the marketing of well-fleshed birds.

The best birds to flesh or fatten are those of the heavier breeds, such as Wyandottes, Rhode Island Reds and Plymouth Rocks. The light breeds, such as Leghorns, seldom pay to fatten unless they are very thin in flesh.

The birds intended for fattening should be placed in a pen, or in a slatted coop. The process is not difficult if you will pay attention to a few points that are essential.

Feed very lightly for the first day that birds are in the pen, but be sure to give them a drink (milk is best). Then feed gradually whatever birds will eat and leave no waste feed in the trough. Generally the most profitable gains are made during the first fourteen to sixteen days' feeding. Such birds will not be very fat, but may be fat enough to cook and eat well. Some markets demand fatter birds.

The most profitable gains are made on those birds which weigh from three and one-half to four and one-half pounds when put up to fatten.

The grains fed should be finely ground and, if possible, should be mixed with sour milk, to a consistency of pancake batter. The more milk a chicken will take the more it will gain. Milk appear to have no good substitute for fattening chickens. If you cannot get milk, then add ten to fifteen per cent. of meat meal to the ration, and mix with water. The addition of a little green food daily will help matters. Many people get better results by feeding a little salt. About one-half pound to one hundred pounds of dry grain is sufficient. This mixes best by being dissolved in water and adding a little at each feed. Be careful not to use too much.

The best grains available now are a mixture of ground barley, cornmeal, finely ground buckwheat, and shorts. Oats are good if part of the hull is sifted out, as are also ground brewers' grains, and shorts mixed with double the quantity of sour milk. In general, feed nearly one-third shorts and whatever finely ground grains you may have about a farm.

The essentials are to select healthy birds, keep pen clean and free from vermin. If chickens do not eat all feed in fifteen minutes, remove what is left from pen, and mix ground grain with sour milk if possible.

Scientific Beekeeping.

For the advancement of beekeeping in Canada, says the late F. W. L. Sladen, in his last annual report as Dominion Apiarist, covering the year ending March 31, 1921, the great need is to educate beekeepers to replace with modern methods of management the old neglectful methods that continued to levy toll of loss, particularly in winter, from brood diseases and from old and failing drone-breeding and lost queens. Information on these matters it might be suggested, has been secured and made public by demonstration and experiment at sixteen Dominion Experimental Farms scattered throughout the country, and, it may be added, by the distribution of bulletins and such reports as the one referred to. Many of the experimental problems in Canadian beekeeping relate to the simplifying of methods so as to enable the keeper to care for a larger number of colonies in a given time. In Canada a great deal of time is spent in handling bees to prevent their swarming. Long, warm, sunny days, such as we have had this year, and the heavy honey flows, develop a stronger tendency to swarm, and the swarming season lasts longer than it does in the south. In most parts of this country the swarming season continues far into the main honey flow, rendering manipulative work for the prevention of swarming particularly exacting because of the necessity of removing and afterwards replacing the supers containing the honey, in order to reach the brood chamber to carry out swarm control operations therein. The need is a reasonably certain method of preventing swarming and requiring but little labor, and that limited to certain days, making it possible for the bee-keeper to do similar work in out-apiaries in the intervening days. Successful manipulation is retarded when the old queen is left in the hive. The greater productivity of a young queen makes the colony more profitable in the succeeding year. Young queens, which can be raised from selected stock, also improve the strain of bees.

How to Grow Mushrooms Successfully.

Mushrooms are much appreciated by epicures and would be by many other people who realize the succulence and delicacy of mushrooms on toast or with steaks, if they could more easily be procured, and yet they can be freely and cheaply grown. All that is required is a little knowledge and a little trouble. In a circular published by the Dominion Experimental Farms, the Plant Pathologist, Mr. F. L. Drayton, points out that they can be grown in a cellar, an out-building or barn in which the temperature can be kept fairly uniform at between 45 and 65 deg. F., and under greenhouse benches. A little stable manure where wheat or oat straw has been used for bedding will promote the growth. The leaflet explains how the manure is to be treated and made use of. The manure can be placed on the floor and ridged up against the wall or spread on shelves, a sample of which he gives in diagram. Bricks of spawn which must be broken up into ten or twelve pieces can be obtained from any reliable dealer in seeds at 35c or so per brick. Some "don'ts" are given in the circular, such as: don't use old manure mixed with shavings or sawdust; don't cure the manure too late, that is, when frosty weather has set in; don't plant the spawn until the temperature has been at 65 deg. for three or four days; don't overwater, and don't cover the bed with soil until the spawn has started to make a mould-like growth.

He who receives a good turn should never forget it; he who does one should never remember it.—Charron.

Nobody knows what vitamines are, but to get them into your system is easy as ABC. Simply see that milk and green vegetables are plentiful in the diet.

John Dill is in a pretty pickle and folks are treating him cool as a cucumber. He got an agency for life insurance and sold all his friends such big policies that they can't get any fun out of life and keep up their premiums at the same time.

THE SUNDAY SCHOOL

NOVEMBER 20.

Paul Before the King, Acts 26: 19-32.. Golden Text—1 Cor. 15: 20 (Rev. Ver.)

Time and Place—A.D. 59, Caesarea, The Roman Province of Judea, on the coast of the Mediterranean, northwest of Jerusalem.

Connecting Links—When Festus succeeded Felix, as governor of Ceasarea, he found Paul a prisoner. The new governor, three days after assuming the duties of his post, made a visit to Jerusalem. There the Jews tried to induce him to have Paul brought to Jerusalem for trial, planning to waylay and kill him on the road. Festus, however, suspecting their design, courteously refused the request on the ground that there was no time. He told them that he would return to Caesarea in a little more than a week's time, when the accusers of the notable prisoner might appear before him. A speedy trial was promised them. This trial took place, but when Festus proposed that the case should be referred for decision to the Sanhedrin, with whom he himself would sit, Paul, standing on his rights as a Roman citizen, appealed to Caesar at Rome. This appeal brought the trial to a speedy close, ch. 25: 1-11. King Herod Agrippa III, the son and successor of Herod Agrippa II, the grandson of Herod the Great, who had killed James and imprisoned Peter (ch. 12: 1-6), came with his widowed sister Bernice, to visit Festus. The governor told his visitors about the prisoner, Paul, and Agrippa expressed a desire to hear him. Accordingly, it was arranged that Paul should appear before the royal party. The lesson occurs in the account given of this appearance, ch. 25: 13 to 26: 32.

I. Paul's Defence, 19-23.

Vs. 19, 20. **Whereupon**; Rev. Ver., "wherefore," because of the wonderful revelation of which an account is given in vs. 12-18. **I was not disobedient.** There had been a time when Paul's life was full of opposition to Jesus and his followers. But that time was past. **Unto the heavenly vision**; which he had beheld on the road to Damascus, ch. 9: 1-9. The word "vision" is not to be understood as signifying anything unreal. It was an objective revelation of divine things, as was proved by Paul's blindness. **Shewed**; Rev. Ver., "declared." The word signifies the delivery of a message. Saul was henceforth God's evangelist. **At Jerusalem**; with such boldness that the Jews sought to kill him. **At all coasts** (Rev. Ver., "country") **of Judea.** Wherever Paul went he was always the ambassador of Christ. **Then to the Gentiles.** Paul's gospel was for all men of every race and color. **Repent**; turn their backs on sin. **Turn to God**; in trust and obedience. **Doing works worthy of repentance** (Rev. Ver.); making their lives square with their profession.

Vs. 21-23. **For these causes**; "because I preached to Jews and Gentiles alike, proclaiming one Gospel to both, and placing both on an equality before God" (Expositor's Greek Testament). **The Jews seized me** (Rev. Ver.). The words describe a violent arrest. **Went about**; planned an attempt. **To kill me**; literally "lay hands upon me," and so to kill me. (Compare ch. 21: 17-34). **Having therefore obtained help of God.** The "therefore" implies that against such attempts the helps which alone could deliver him was divine. The word for "help" means the succor of an ally. **Continue** (Rev. Ver. "stand") **unto this day**; in spite of all attempts to cast him down, made by both Jews and Gentiles, during his missionary journeys. **Witnessing**; Rev. Ver., "testifying." **Both to small and great**; the lowly and the influential. He was now standing before two of the "great." **The prophets and Moses**; the whole old Testament scriptures. **Christ**; the Old Testament Messiah. **Should suffer.** It was an idea abhorrent to the Jews that the Messiah should suffer, and especially that he should be crucified. They thought of a victorious and triumphant Messiah. **Should ("the first . . rise from the dead.** It was the resurrection which showed the suffering and triumphant Messiah to be one. **Light unto the people**; the Jews. **The Gentiles**; contrary to the Jewish belief, other nations would share equally with them in the blessings of God's Kingdom.

II. Festus' Interruption, 24-26.

V. 24. **Beside thyself.** Ramsay paraphrases, "Paul, Paul, you are a great philosopher, but have no common sense." To Festus the idea of a resurrection was absurd, and equally ridiculous did it appear to him that "one who was dead" (ch. 25: 19) should bring light not only to Jews, but also to Gentiles, Romans like himself. (Compare chs. 2: 13; 17: 32.) **Much learning**; study of the Old Testament scriptures. Festus may have heard that Paul was distinguished among the Jews for his scholarship. **Turn thee to madness** (Rev. Ver.); as we say, "His head is turned."

V. 25. **Most noble Festus.** Paul is never provoked out of his fine courtesy. He shows himself a marvel of Christian courtesy and self-command. **Words of truth**; and not the wild imaginings of a mind diseased. **Soberness**; sound sense.

V. 26. **The king knoweth.** Agrippa, at one time, as we have seen, was in charge, under the Romans, of the temple at Jerusalem; he was well acquainted, therefore, with the religion of the Jews and their expectation of a Messiah. Besides, he must have heard something of the Christians, since his father had beheaded James with a sword and had cast Peter into prison (see ch. 12: 1-4). **These things**; the report of the death and resurrection of Jesus. **Not done in a corner**; but in Jerusalem, the Jewish capital, in the glare of public knowledge.

III. Agrippa's Decision, 27 32.

Vs. 27-29. **Thou believest**; "the prophets," and therefore he ought to believe in Jesus who fulfilled the teaching of the prophets. **With but little persuasion**, etc., (Rev. Ver.). It was as if he had said, "You think, do you, that with a little speech-making you can make so great a man as I become one of that fanatical sect of Christians," for such they seemed to the scornful king. **I would to God.** I desire with all my heart. **Such as I am**; with my present blessings as a Christian and my sure hope of future glory. **Except these bonds**; the chains which bound him to his keeper in prison, and which now hung heavily about the apostle.

Vs. 30-32. **Nothing worthy of death.** Luke is careful to explain that both the Roman Festus (ch. 25: 18) and the Jewish Agrippa found Paul to be innocent. This was a great testimony to his hero. **Set at liberty**, etc., but his continued imprisonment was to become the means of his being carried to Rome, whither he longed to go with the gospel message.

Application.

What about us? We have had our heavenly vision. We know about that perfect one toward whose achievement we should all seek to approximate. Are we able to say I was not disobedient to the heavenly vision? This grand surrender of our all to Jesus will do as much for us as it did for Paul. We too need some kind of an experience that will make us cease from crying, "Who shall deliver me from the body of this death," and make us begin to say as with a shout of joy, "Thanks be to God, which giveth us the victory through our Lord Jesus Christ." Many other visions rise to lure us,—visions of pleasure, possession, power; but their lure leads to death. There is only one vision worth trusting fully. As the mighty Tennyson would put it:

"After it, follow it
Follow the gleam,—"

the gleam of all that Jesus ever was, —the gleam of all that we can ever be through Him.

Water for Farm Homes

"Say, Martha, listen to this." It was Frank Anderson who spoke. He had left the boys to finish washing the automobile before the evening meal was ready while he came in to read a letter from his brother who lived in Eastern Ontario. "Bill tells me of a neighbor's wife who has walked 5 710 miles and carried 2,000 tons of water."

"Bill must be improving in his figures," was the casual rejoinder of Mrs. Anderson.

"I judge these are not Bill's figures. It seems that a survey of farm homes is being made in his county. During this survey extension men from the university who are doing the work found this woman, now sixty-five years old, who for the past fifty years has been carrying the water needed by her household from a well located six feet below the level of the kitchen floor and one hundred and forty feet away from the house. And now, after a half century they have learned that it will require an expenditure of only $18 to pipe the water right into the poor woman's kitchen."

"Strange, isn't it—only yesterday at the community club this matter came up for discussion. Mrs. Chapman gave a ten-minute talk on the farm home water supply. Evidently she had informed herself on the subject for among other interesting things she included a statement on the number of homes having running water. According to data gathered by government men only one home in every five has running water, while sixty-eight per cent. of the women carry the water needed in their homes from wells outside. I presume Bill's neighbor is one of these women, although she carried the water farther than the majority, for Mrs. Chapman said that these wells are located an average distance of forty-one feet from the kitchen."

Before Mrs. Anderson had finished this speech her husband had fished out his much used pencil and began figuring on the corner of a newspaper. After a few moments he lifted his head and replied, "Mrs. Chapman hit it just about right, for this community, at least. In the six sections where I know all the farmers, about twenty per cent. have running water in their homes."

And along this line be it said that the percentage of farm homes with an easily available water supply is bound to increase rapidly. This twenty per cent. is leavening the whole farm population. With a better knowledge of farm engineering these people have come to know that the installation of running water is possible under almost every condition and in a great majority of homes no difficult problems are involved.

The percentage will grow also because running water is the key to the introduction of many of the conveniences which farm folks are now seeking. The advent of the bathtub, the indoor toilet the kitchen sink, the hot water heater, all more or less dependent upon running water, will not only relieve the women folks of the farm from much drudgery, but will also give them a sense of living up to the possibilities of the times. And this sense of pride is even a more important factor in the routine work of the woman's life than it is in the more varied work of men.

Think It—And It's So!

Few of us realize how much our lives are influenced both by outside "suggestion" and auto-suggestion.

We are, for instance, feeling out of sorts, and a friend tells us we are "really looking very ill." This makes us feel worse at once, and we hastily send for a doctor. He feels our pulse, looks at our tongue, and says:

"Overwork, my dear sir. Take this tonic and a few days' rest. Ill? No, of course you are not going to be ill. But you must certainly take great care."

There are doctors, although I honestly believe they are in the minority, who look grave over very small matters that they almost suggest illness to you; but the average physician usually cheers you up by his healthy suggestions, for nowadays most physicians realize the power of mind over body.

Most forms of faith-healing are merely valuable lessons in auto-suggestion. The sick are told to "deny pain" "to remember they are well all the time," "to realize health," "to express life," to "hold the thought of perfect wholeness," and so on and so forth. Now, what do we get out of all or any of those suggestions? A sweeping away of small ailments, of morbid fears, and the egotism of invalidism.

It is marvellous how it will help us to throw off the little ailments that now fill us with undue fear, ailments that really do not matter. It is also wonderful how the thought that we are going to be prosperous, and are likely to succeed, will fill us with the courage and perseverance that will eventually lead us to the success we long for.

Then auto-suggestion eliminates many of our little worries.

I know a woman who, whenever she feels overwhelmed with small and irritating cares, takes five minutes alone, closing her eyes, and saying over and over again to herself, "I am peace and love—I am perfectly quiet inside," and gradually she feels a sense of rest and patience erasing all her petty irritations.

In using auto-suggestion we use a law that enables us to become a positive, instead of a negative, force. We are, to a far greater extent than many of us imagine, the controllers of our circumstances and environment.

Auto-suggestion will help us to make the ideal real. It will enable us to a great extent to change our fate. Before denying this, let us at least try it. Let us drop our pessimism and our whining, and talk health and prosperity, faith and courage and love and joy, and see the effect, not only on ourselves, but on those around us.

We are living in an age of grumbling and fault-finding. Of course, we all loudly acclaim that it is the result of the Great War—everything is the war. But is it? If it is, we must wait patiently until our soul-wounds are healed. If, on the other hand, the pessimism and gloom come from the murky atmosphere of our own inner consciousness, we can mitigate, if not cure them, by healthy auto-suggestion. It is at least worth a trial.

We can begin with a few simple self-suggestions, such as:

"There is nothing to fear but fear."

"I am happy, and I will succeed."

"I will only look for the good in everyone I meet."

We might finish up by saying to ourselves, "I am—on the whole—a very good sort, and I cannot be the only nice person about, so I will begin to look out for the good in the others."