Soils and Crops

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Conservation of Manure.

Barnyard manure is one of the most valuable by-products of the farm. However, its value can easily be and ordinarily is greatly lessened by certain adverse conditions, improper treatments and modes of handling.

The value of manure lies not only in the fertilizing elements which it may contain—materials for which the farmer pays large sums when he buys commercial fertilizer—but also in the large percentage of organic matter and the great mass of bacteria. On the lighter soil types especially, organic matter may be the key to the scheme of improvement. The bacteria are of great value in that they are necessary for decay and resultant beneficial effects. A few ounces of rotting manure may easily contain a billion of these microscopic bits of life.

Carelessness and improper handling result in enormous losses, yet it is still no uncommon sight to see barnyards glutted with manure which has for months been exposed to the damaging action of rains, "fire-fanging," and the type of decay which spells the word loss in big letters. A farmer would not think of allowing a ton of commercial fertilizer to be washed by repeated rains—yet it is no small number who will day after day trample through the barnyard slop and give no thought to more economical, sanitary and efficient methods of handling the farm fertilizer.

Leaching or washing out may cause the loss of large proportions of the phosphoric acid and potash, especially the latter, while improper fermentation generally results in the loss of large quantities of ammonia, the highest priced ingredient of commercial fertilizer. All three losses can be cut to a minimum by either hauling the fertilizer direct to the field as it is made, or by properly storing it in covered pits with tight bottoms. In the latter case, moistening and compacting the manure prevents loss of ammonia by excluding any large amounts of air, and thereby setting up the kind of rotting or decay which does not set free this valuable fertilizing substance.

Poor stall floors and the lack of sufficient bedding of the right sort to act as absorbents, are common causes of loss of liquid manure, which contains even a larger per cent. of nutrients than the solid. Any system which fails to take care of this is incomplete.

Under the adverse conditions of weathering and improper decay, just described, the loss may easily arise to fifty per cent. of the nutrient constituents, and probably much higher with the ammonia and potash, which are most easily lost. Experiments and practical tests have shown that in six months' exposure, horse manure has lost as much as sixty per cent. of its nitrogen, forty per cent. of its phosphoric acid and seventy-six per cent of its potash. Converted to actual dollars, this loss might represent a very large sum on many farms.

"Fire-fanging," an apparent burning of manure, is caused in dry, open heaps by the action of certain fungi. Manure thus attacked soon becomes of little value. Moistening and compacting, the remedies for improper fermentation, will also prevent this action.

It should no longer be necessary to caution farmers against placing manure in small piles in the field, to be scattered by hand later. Loss of ammonia and uneven distribution of plant food are the two main reasons. A manure spreader will pay for itself in a short time where there is any great amount of farm fertilizer to spread. Fineness, even spreading and saving of labor are but a few of its many advantages.

Manure contains a smaller portion of phosphoric acid than of potash or ammonia and is therefore an unbalanced fertilizer. The addition of rock or acid phosphate, at the rate of about forty pounds per ton of manure will greatly increase the effectiveness of manure. Conclusive results have been produced as to this point. The phosphate can be dusted over the manure spreader loads as they are hauled to the field.

Ice Supply on the Farm.

One day last summer I met a farmer who had been to the station with his cream. He had just received his cheque for July and showed his account with the Company for the same month. It credited him with 52 pounds butter fat at 47 cents from first grade cream, and 224 pounds butter fat at 37 cents from second grade cream. When I asked him how he came to have so much sour cream, he said he had no ice and that his well water wouldn't keep his cream sweet, especially over Sunday. Then I asked him why he hadn't put up ice. "Well," he said, "it was too much bother."

A glance at the figures in this man's account will show that he lost $22.40 that month by not having ice.

Outside of its use in the dairy, ice is essential in the farm home for supplying the refrigerator, in which meats, butter and other perishable foods can be kept fresh for a number of days.

To know how much ice to put up, the following is a safe rule to follow: If engaged in the city milk trade the farmer should put up two tons of ice per cow, if supplying cream, one ton per cow is sufficient, and four tons for household use.

In putting up ice, one foot below the ice, one foot along each side, and two feet above should be allowed for the sawdust. If the weather is cold, it is a good plan to pack damp snow between the cakes. This prevents the air from melting the ice.

Ice may be stored in the corner of a woodshed or outbuilding, but it is better to have a building especially built for the purpose, because the dampness is apt to rot sills and walls.

In building, two things are essential, drainage and ventilation. Unless the soil is sandy, a few inches of gravel under the ice, with a drain to carry off the water is necessary. By having openings in the gables a draught can be secured which will carry away the warm air under the roof. Plans and suggestions for farm ice houses can be obtained free from the Central Experimental Farm, Ottawa, or from your nearest Experimental Station.

As ice often comes into direct contact with food and drink, it is important to secure it as clean as possible. It should never be taken from streams or ponds into which there is any drainage from houses or barns. Disease germs lying dormant in the ice may become very active if they get into man's food.

Good, clear ice, free from snow, harvested before it begins to melt, is the best.

Ice is free for the taking and requires only a little labor in harvesting, therefore, why shouldn't it be used on every farm, when it gives such good returns, not only as cash, but in convenience to the household.

A Few Suggestions to Poultry Shippers.

Receivers of poultry in the consuming centres are having their usual trouble with dressed poultry. This is caused mainly by a discoloration of the poultry due to improper preparation. When shipments in this condition are received the commission house has great difficulty in disposing of the product and then only at a reduced price. This usually brings a complaint from the shipper because of the low price, which is often unjustiled.

It is by far preferable to ship poultry alive, for then, if it should arrive at a time of the week which would necessitate its being kept over a few days, it could be done without detriment. It can also be prepared just before sale by the butcher so that it will have a fresh and clean appearance.

But if it is desired that dressed poultry be shipped, the following suggestions can be followed to advantage: After killing and bleeding, dip the fowl in boiling water to loosen the feathers. Then following the lay of the feathers, wipe them off; do not pull them off for that breaks the skin, and any break in the skin will produce a green spot in a few days.

After the feathers are off dip the fowl in boiling water several times again, holding it in a second or two. This is to sear over the outer skin slightly and to make it cling to the inner skin. Immediately after put the body in running cold water, or ice water, and leave it there for at least four hours. This is to take out all of the animal heat and besides will give the fowl a nice plump appearance. It is very essential to have the fowl properly chilled before shipping.

Another essential to consider, especially in the shipment of dressed poultry, is the time of shipment. Poultry can be sold to advantage if it arrives at the market not later than Thursday morning. If it arrives Friday night or Saturday morning, it comes after all the butchers have been supplied for the Sunday trade. As it is difficult to keep dressed poultry over several days the commission man then has to force a sale at a sacrifice price which causes extra work for him and invariably results in a kick from the shipper.

Chickens are more susceptible to discoloration in keeping after being dressed than turkeys, geese or ducks. Therefore, they should be shipped alive, or greater care should be used in dressing them.

The largest duck farm in the world is located at Speonk, Long Island. It is claimed that 130,000 ducks are quartered on it.

It is a maxim universally agreed upon in agriculture that nothing must be done too late; and again, that everything must be done at its proper season; while there is a third precept which reminds us that opportunities lost can never be regained.

A professional cistern cleaner says that at least once a year each housewife should put a cupful of common baking soda into her cistern. It not only kills all insect life that may be within the water, but renders it softer and better for all purposes, even for drinking. It will make cleaning unnecessary, unless trash has been dropped into the cistern.

How to Tan Farm Hides.

First, remove hair. To do this, mix for an average-sized hide about a half-peck air-slaked lime in half-barrel of water and stir briskly. Then immerse the hide and let remain from three to five days, stirring two or three times daily. Try from time to time to remove the hair with any blunt tool, such as the back of a case-knife; remove all the hair, then rinse in clear water. Then make a solution of three pounds of crushed alum, half-pound of salt-petre, and one or two pounds salt. Put these into enough water to fully cover the hide. Let remain two weeks, stirring, once or twice daily. At the end of two weeks the hide will be tanned. Tack the hide out on a smooth place, such as a barn door, stretching in all directions. Get out all the wrinkles and when nearly dry rub it with tallow, and, if at hand, good cod-oil, rubbing it in well. Then roll it up for a few days, keep in a warm place, not hot, away from the sun. Soften by rubbing well, and if necessary, use more tallow. This makes a light-colored leather. If it is to be blacked, do it before any tallow is put on. Use four ounces nutgalls, eight ounces copperas, dissolved in one quart of vinegar or cider, soaking the hide over night or twenty-four hours if necessary. This method can also be used for cowhides and calfskins.

Tanning Hides With Hair On.

Make a mixture of three pounds of carbonate of soda; three ounces each of nitrate of potash, common salt, prussiate of potash, sugar of lead and pulverized copperas; nine gallons of water.

Place the hide in this solution for two hours, remove carefully and rinse in cold water. If the hide is stiff, dip it repeatedly in this mixture: One gallon of soft soap, one quart of fish-oil, one ounce of borax, four ounces of salt, four ounces of alcohol and two quarts of hot water. This method is especially for hides to be used as rugs.

To tan any kind of skin with hair or wool on, or without: Take one pound of alum, one pound of Glauber salts, one-half pound of salt, one-quarter pound of saltpetre. Dissolve in warm water. Soak, work and dress. I once used skunk skins to make a robe, with success.

Sheepskins With Wool On or Off.

Remove all fat meat from the skin by scraping with a blunt-edged knife. Soak the pelt in a bath composed of one pound of alum and a quart of salt, with enough water added to cover the pelt. Pu the vessel away in a warm place and turn the skin in the liquid daily. After a week, remove the skin and dry it. When partly dry, rub and stretch the skin to complete drying.

If you want sheepskin for leather, remove the wool before putting into the alum and salt bath. To remove wool, place pelt with flesh side up and sprinkle with quicklime. Moisten the lime and leave for twenty-four hours, after which the wool can be pulled. The lime can be put on wool side of pelt, but injures the wool more than if placed on flesh side.

Tanning for Robes and Rugs.

To tan hides with hair on for robes, mats, or rugs, wash the skin and remove all fleshy matter by scraping. Then wash hair side with warm water and soap and rinse. Take one-fourth pound each of salt and pulverized alum, one-half ounce of borax, and dissolve in hot water. Add enough rye meal to make a thick paste and spread on flesh side of skin. Then fold lengthwise, flesh side in. Let remain two weeks in an airy and shady place, then unfold, shake well, wash flesh side in water, and scrape with a dull scraper. Pull and stretch and work until dry. The amounts mentioned are enough for sheep skin; for larger skins use more in proportion. Farmers can make good robes from sheepskins treated as above and sewed together.

In fattening chickens a low grade of wheat flour is a very economic feed, surpassing oatmeal in this respect. Crate fattening is liable to be disastrous both for the hen and her owner. Flock fattening is best.

The Noon-Hour Lunch at School

There are many mothers in the land who pack dainty and wholesome lunches for their children, but there are also many busy and work-harassed mothers, or perhaps a few careless mothers, who deem any lunch satisfactory if it satisfies the child's appetite, even though it is unwholesome and not at all well balanced.

Whichever may be the case, the child's dinner can not be complete without an appetizing hot dish or drink for lunch during the long winter day. Fortunate indeed, is the child who carries to school a Thermos bottle filled with hot milk or cocoa, but all can not afford even these little necessities.

Last year the teacher in our district school noticed that the children did not study well after the noon hour. A little keen observation showed her the reason. Their food was heavy and unbalanced, and at best was nothing but a cold lunch; of course, the result was a sluggish brain, as might be expected. So our teacher began to make plans. After she had them all completed, she laid them before the parents, who heartily approved.

A little equipment consisting of the following, was donated or bought: A second-hand table, a second-hand cupboard, a two-burner kerosene stove, an eight-quart kettle, a tin dishpan, a quart cup, a soup ladle and enough soup bowls and teaspoons to go round. The dish towels were hand-hemmed by the sewing class, as were the hot-pan holders.

The next thing was to decide who was to do the cooking. It was a small school and had but few older pupils. The older boys were appointed to empty dish water, get in water and help serve. There were two fourth class girls and two third class girls. One girl from each class was put on the same committee. Committee No. 1, under the strict supervision of the teacher, cooked for one week, and committee No. 2 did the dishwashing. The next week they changed about so that each committee had a chance to show its culinary skill. The teacher helped serve and taught the children how to do the cooking.

Close account was kept of everything, and at the end of the month a statement was sent to each parent. The total expense for each month was divided by the number of pupils; thus settling the expenditures to the satisfaction of everyone.

It was not long before the teacher began to notice a change for the better, by the added zest and aptitude of the children for their after-dinner studies.

The week's menu for twenty children was as follows:

Monday—Rice boiled in milk.
Tuesday—Bean soup.
Wednesday—Milk toast.
Thursday—Cocoa.
Friday—Potato soup.

The potatoes for potato soup were prepared the previous night or in the morning before school, and left in cold water. The recipes we used follow:

Rice Boiled in Milk.

Wash one quart of rice through several waters or until water is clear. At ten o'clock put it on to boil in four quarts of salted water. At 11.45 add a quart of whole sweet milk and one-half cup of fresh butter. This will need occasional stirring but is well worth the trouble involved.

Bean Soup.

Put one quart of navy beans, with one level teaspoon of soda, on to boil at 8.45 o'clock. When they start to boil, drain and add fresh water. Put on to cook again. If a soup bone is to be used, it should be put in at once and if not, two squares of sweet milk and one-half cup of fresh butter should be added at 11.30. Salt to taste.

Milk Toast.

We found it handiest to let each pupil bring its "quota" of toast from home, ready made. Four quarts of whole milk should be put on to heat at 11.30 o'clock. When it boils, add salt to taste and pour over the toast. Leave closely covered until ready to serve. This proved a favorite dish.

Cocoa.

At 11.30 o'clock put on three quarts of whole milk and three quarts of water to heat. Mix one teacup of cocoa and one and one-half cups of sugar to a paste with water. Stir the paste in to the hot milk and water. Let come to a boil and stir well before serving.

Potato Soup.

At 11.00 o'clock put two quarts of peeled and diced potatoes on to cook in four quarts of salted water. Let it boil until 11.30 o'clock. Then add two quarts of whole milk and one-half cup of fresh butter.

The New Roof Is Fine---But The Foundation Is Rotten

—Baltimore Sun.

THE SUNDAY SCHOOL

FEBRUARY 5

Elijah Taken Up Into Heaven, 2 Kings 2: 5-11. Golden Text—Rev. 2: 10 (Rev. Ver.)

Time—In the reign of either Ahaziah or Jehoram, about B.C. 854-853.

Place—The plain of the Jordan.

Connecting Links—At Mount Horeb Elijah had been commanded to anoint Elisha to succeed him 1 Kings 19-16. It is to be presumed that Elisha had previously attached himself to Elijah as a disciple, learning his methods of work, receiving his inspiration and attending to his personal wants, 1 Kings 19: 21. The time has now come for Elijah to leave his work to his successor. As there was probably a Life of Elijah, separate from our book of Kings and one of its sources (1 Kings, chs. 17-19, 21; 2 Kings, ch. 1), so, no doubt there was also a life of Elisha, preserved in the prophetic circles over which he was head, and this would comprise 2 Kings chs. 2, 4-7; 8: 1-15; 13: 14-21. We are now about to enter upon a study of Elisha's life.

When the intimation came to Elijah that he was to die, he was living with a band of prophets at Gilgal between Bethel and Shechem. He was directed to journey to a spot east of the Jordan and near Nebo where Moses had fallen asleep. Elisha, his faithful disciple, set out with him, but wishing to spare him the pain of witnessing the translation of his master, Elijah tried to dissuade him. The younger prophet, however, could not be turned aside. The two prophets then journeyed to Bethel where there was another circle of prophets. Elijah doubtless wished to encourage them in their faith and work and to take a last tender leave of them. The band of prophets in Bethel, having a presentiment of Elijah's near death questioned Elisha regarding it, but he curtly rebuked their idle curiosity on so solemn a matter. Another opportunity was afforded Elisha to turn back but this being refused, they journeyed on to the prophetic band at Jericho.

I. Elisha's Sorrows, 5-8.

V. 5. Jericho would be the last town visited before they entered upon the bleak region east of the Jordan which was to be the scene of Elijah's death. It was fitting that Elijah should be strengthened in spirit by a band of prophets in Jericho before proceeding on his journey. **Sons of the prophets.** The fathers of these prophets were not necessarily prophets. It was not a hereditary caste. This Hebrew term means simply "members of the prophetic guild." From the first prophecy tended to draw its members together in societies (see Sam. 10: 10; 19: 20). By the time of Elisha, the prophets appear to have a strict organization and lived together in communities near the great sanctuaries and recognized a common head or chief prophet. Their life together tended to produce unity in their work and to increase the inspiration by which they did their work. In short, they formed a sort of school. **Knowest thou, etc.?** Being prophets, they understood what Elijah and Elisha were about on this journey, but the curt answer which Elisha gave them implies that they were merely retailing bad news without much sympathy.

V. 6. **I will not leave thee.** Still another chance was given to Elisha to turn back (see vs. 2 and 4), but without avail. Not only might he have felt that he might be of some comfort to Elijah before his death, but the last moments with his great master were too precious to lose. He would cling to him to the very end.

V. 7. **Fifty . . . prophets;** presumably from those in Jericho. Moved by the desire to see the wonder that was to happen, they followed Elijah and Elisha at a distance, and stood on the banks of the river watching the two disappear on the other side. They did not witness Elijah's translation.

V. 8. **His mantle.** The mantle was the distinctive garb of the prophet. It was made of hair (see ch. 1: 8 and Zech. 13: 4). John the Baptist seems to have worn this distinctively prophetic dress (see Matt. 3 :4). Elijah's mantle was, like the rod of Moses and Aaron endowed with wonder-working power. **Smote the waters;** as Moses smote the Red Sea, Ex. 14: 16. **They were divided hither and thither;** into two walls of water with a dry space between. At the entrance of Israel into the land, the Jordan had divided in a similar manner, Josh. 3: 14-17.

II. Elijah's Promise 9, 10.

V. 9. **When they were gone over;** into the land of Moab, on the eastern side of Jordan. They may have journeyed on to the wild region of Nebo, where Moses had met his death, Deut. 34: 5, 6. "As Elijah went to Horeb for inspiration in his time of spiritual stress, so he is drawn in the final crisis of his life to the mountain region in which Moses was summoned to die, away from the face of man." **Ask what I shall do, etc.** Elijah wished to show, before his death, some mark of favor to his disciple and successor. It is doubtful if Elijah had in view the imparting of any spiritual gift. He meant to bestow merely some token of love and remembrance. **A double portion of thy spirit.** The first-born Jewish son received a portion twice as great as the other sons (see Deut. 21: 17). Elisha requested that he might be considered the first-born among Elijah's spiritual sons, that is, the chief among the prophets. His prayer was not that he might be twice as great a prophet as Elijah, but rather that he might prove a worthy successor to him.

V. 10. **A hard thing.** Spiritual gifts are the hardest to communicate. Only God can give them. Nevertheless, Elijah assured him that if he had the steadfastness to remain with him in the last moments and to behold the messengers of death, his request would be granted.

III. Elijah's Departure, 11.

V. 11. **As they journeyed on a storm gathered.** In the whirlwind that swept through the lonely valley, Elijah was carried off to his heavenly rest. **A chariot of fire, etc.** In the Old Testament Jehovah is represented as living in a bright fiery element where He is surrounded with a heavenly army which, though invisible to mortal eyes, is composed of this fiery substance (see ch. 6: 17; Ps. 68: 17, and Hab. 3: 8).

Application.

One of Immanuel Kant's greatest arguments for immortality was: "The unfinished tasks of earth." Elijah was called away just when he seemed to be needed most. Many men have felt that more years were needed in which to round out their life work. Yet we know that no man is indispensable. In Westminster Abbey there is a monument erected to the memory of John Wesley. On it are inscribed these words: "God takes away his workmen, but He carries on his work."

The Salvation Army uses the word "promoted" in speaking of the death of one of their number. That word carries with it the thought of further service. It is difficult if not impossible for us to think of Elijah as doing nothing. The reward for work well done will surely be more work. In the story of the talents Jesus taught that the men who had used their talents in their master's service were rewarded with greater tasks. "Thou has been faithful over a few things, I will make thee ruler over many things."

How They Make Roosters Crow in the Movies.

This tale is about a rooster. On several occasions during the filming of rural pictures, in which "barnyard atmosphere" is an essential effect in the pictures, directors and their slaves have been confronted with one of the most troublesome problems that could possibly be conceived by the people who strive to make the public laugh.

No doubt you have sat in a theatre seat and watched a rooster crow on the silver sheet. You probably smiled and gave the matter no serious consideration. Or perhaps you said: "Simple enough," and let it go at that.

But just try to make one of the stubborn fowls crow. You would, without a doubt, wish that such crazy creations never existed. It is with this difficult feature that members of the movie profession have to deal. In most cases they have to resort to a dummy for the purpose of producing a desired effect in pictures, and dummies are easily detected. The substitution of dummies for the real thing in pictures only causes picture patrons to turn up their noses in scorn and wonder what the manufacturers of screen stories take them for. One director of comedies was recently humiliated by several letters, which asked him if he thought he was really getting away with the idea of putting one over on the public. Why, a new-born baby could distinguish a dummy rooster from the real one. Where did he get the idea that movie fans were absolutely dumb?

The gentleman in question is one who has an international reputation for handling animals and fowls in pictures. He has frequently been styled, "the man who makes animals act." Evidently he realized that there could be nothing that could take the place of a natural actor, whether human or animal. He began a puzzling study of what he called "chickneology." For several days he wondered how he could make his rooster crow in his next picture. Every means that he resorted to proved useless.

The cameras were set and the cameraman wasted many thousand feet of film waiting for the rooster to crow. But to no avail. It was absolutely useless. It couldn't be done. The director had given up the idea entirely, when one morning he saw his troublesome rooster walk proudly out of the coop in which he had been enclosed. Some sympathetic fellow had felt sorry for the fowl and unfastened the door for the abused rooster to seek freedom.

The director watched the rooster strut from the coop and stop, stretch his wings and crow as if his very life depended on it. Now why in the world wouldn't the rooster do that for him? The proud king of fowls was put into the coop and kept for several hours, then turned loose again. The same procedure was followed several times. Invariably the rooster would crow after being imprisoned for several hours.

The psychology of making the rooster crow was finally determined by the fact that the coop had a low roof. The rooster while in it could not hold his proud head up. When liberated after a few hours of being in the coop he naturally had to stretch, and then his stretching was followed by the familiar sound which every one knows—the song of a rooster.

This means of making a rooster crow in a picture has been a great help to directors who like to make everything appear natural. When a picture is filmed that requires a rooster in the act of crowing, the fowl is procured and placed in a coop constructed so that he can not raise his head. When the time is ready for his part in the picture, he is placed before the camera and there he never fails to please the director with his "Cock-a-doodle-doo."