

FARMERS AND CO-OPERATION-- SHEEP AS SOIL RENOVATORS

The farmer has his fortune, his comfort, his intelligence, in his own hands everywhere, but more fully in the United States than anywhere else. A large part of the farmers in all countries make poor use of their opportunities. They lack initiative, run in ruts, take up slowly or none at all, with new ideas. They are unprogressive. To this there are exceptions aplenty to prove the possibilities.

Immigrants into a new country are altogether more enterprising and make larger and better farms and communities in a few years than where they came from. Necessity compelled them to plunge in, they had to initiate, the spell of tradition was broken, the habit of enterprise and work got fixed and they kept it up.

Another advance step is that of getting together, getting inspiration and knowledge from contact with each other in affairs of mutual interest. Association is the talker in the farmer's calling more than in any other.

Voluntary association for business, for education, for sociability, is the power to raise the world. After a life-time of political agitation mostly revolutionary, the great Mazzini said, "Italians Associate! Co-operate!"

After seventy years of an agitator's life, much of which had been political, George Jacob Holyoake said, "Of all the reforms I have been connected with, Co-operation is the most important."

The farmer needs Co-operation more than any other class. He needs it for business, for social stimulus, for education in and out of school.

The farmer suffers from segregation, from inertia, from inherited habits, from ignorance. He raises half a crop, he raises to sell but not much to live on, he wastes time and material, he keeps slovenly premises and inferior tools and stock. This does not apply to all farmers, but to a majority. It applies to all countries and more to the old communities than the new.

The farmer needs no legislation, laws neither make nor mar his crops, they affect in no appreciable degree his prices. He does not need more knowledge than he has or than is readily accessible. What he needs is to use well the resources he has and to do the things he knows and says he ought to do. The farmer who will carry out the following simple and practical programme, will revolutionize his own home and fortune and profoundly influence his neighborhood.

Raise all of his living that will grow in his climate. That will leave a very small grocery bill. Raise some more of it than for his own use and sell it. That will pay his store bill. The drain the land subsoil, pulverize, fertilize and cultivate frequently. He will then get two or three times as much crop for very little more work. Keep good breeds of stock, they eat no more, but the cows give twice as much milk, the steers and hogs weigh twice as much, the horses pull twice as big a load and plough twice as much land.

Keep the barn and tools and fences and roads in repair, the barn-yard clean, the drains open. Have a family orchard with all the fruits, have a home acre with big shade trees around it, a grass lawn regularly mowed, with shrubs and rose-bushes and flower-beds and no weeds.

Don't have a big house which takes a lot of money and drudgery to build and to keep up, but make the modest house a beauty within and without.

Then associate with the other farmers. Have a co-operative creamery and keep five or ten cows that will give from four to eight gallons a day of five per cent. butter-fat milk. The best Holsteins of Jerseys will give a gross income of from \$150 to \$200 a year at present butter prices, when perfectly bred, fed, and kept.

Have a co-operative buying and selling association, and creamery, and store. Have a co-operative bank, keeping the local money at home and bringing in cheap money from the city.

It lies entirely with the farmers themselves to: Raise a living at home, double the crop, make the home attractive, Co-operate in all their business.

Already Denmark has done it to the extent of quadrupling her exports of butter, bacon and eggs in 25 years, and changing the poor peasant country into a rich farmer country. Four-fifths of the Danes are now co-operators in farm produce, stores and banks.

Those who have been making a study of soils and how to best keep up and increase their producing capacity agree that cleaning crops, leguminous crops and such grains as are needed upon the farm are the ones that must be grown. It is evident if these are the crops that must be grown that some satisfactory means of disposing of them must be adopted. That way is, by feeding the roughage to stock and selling the product in the form of butter, meat and wool rather than in loads of grain and hay.

One man who has been working on this very problem showed recently how he had found that the cows required more work than could be comfortably handled, but that sheep did not require so much time and yet furnished work during the winter when time could be given them. Under this system the best care could be given to the growing of cultivated crops and the cutting of clover hay for winter. He also pointed out that to avoid worms in sheep it was necessary to change pasture every year and that while fencing was more expensive, this method of carrying on work had been extremely beneficial, not alone in keeping sheep free from worms, but also in increasing the yield of grain, because the weeds had been kept down in all the fields and manure constantly added.

In the fall the lambs on his farm are turned into the stubble field in which, either rape or clover had been sown in the spring and at the same time are gradually worked into the cornfield. The practice is hard on all the weeds that are trying to mature seeds. The lambs make short work of them and the weeds are soon seen in the form of mutton. Thus the fertility, instead of being removed from the soil by the weeds to produce weeds, is all left evenly scattered on the land in grain and corn field.

Lambs are fattened to some extent in the corn field. About one acre for thirty lambs is allowed, where the corn is real heavy. An additional feed that may be required to finish the lambs is given with clover hay in the feed lot.

The ewes may be kept on clover hay alone, and if good corn clover is procurable, a little of this may also be used. Clover hay, however, is a feed that is hard to improve upon as a feed for sheep. It is a crop that is highly susceptible to the sheep and the land too. This shows that the crops that make for good sheep make for improved soil conditions.

Not a year passes, not a day fades into night, but what there is a chance to improve somewhere. The success of any line of work depends upon you and you alone. Others may help, but it's up to the individual to make the improvement. This is an age of advancement all along the line, and farm life and farm work is no exception. To improve means to be up-to-date, or, as a progressive farmer put it the other day at an institute, "The successful farmer is the fellow who is up-to-the-minute."

The only way to improve is to get into training and keep in training by betting things with yourself. Learn all you can and improve your chances. Plan the work; set the head rule the hand. Select the life you are best suited for and stick to it. Set your aim high and creep up to it inch by inch. Remember that is something you can do just a little better than your neighbor, and he has you bested in some lines. It is not always best to avoid the line of least resistance. Success means fighting your own battles.

Above all get into the class known as producers, success in which means improvement. Be one who helps others, who builds, who wins. Above all else seek improvement. It's up to you.

DAIRYING HOW TO SECURE GOOD PRODUCERS FOR THE DAIRY

Get a Good Bull Calf If It Does Cost Something.

MONEY IS WELL SPENT.

BY E. L. VINCENT.

We all want better cows, and we want them more than we realize many times. Most of us are working ourselves most to death to take care of a lot of cows that never begin to pay us back for their feed and care. Too bad! But we need not do it any longer. How can we help it? We haven't the money, so we think to get high-toned cows. Nobody has ever brought us any up to date. What can we do about it? Well, we have some cows. They give us the needed starter. But a starter we must have. It might be worse if some-



CHAMPION GALLOWAY COW AT RECENT INTERNATIONAL SHOW.

The fine quality and finish of the black hornless Galloway are well illustrated in this picture of the champion cow at the International Stock Show, Chicago. She was owned and exhibited by Straub Bros., of Nebraska.

one would give us a good "hint" with the toe of his boot. We need to be routed out of our rut somehow.

But provided we have received the desired "hint," what then? Then get a good bull calf—the very best you can find anywhere in the neighborhood. If you can lay your hands on a full bred calf so much the better. If you can't, do the next best thing. Breed that bull when he is least thing, not before, to the best cows you have. Be sure you know which these best cows are. Test them when they are young. Don't guess at anything now, for you are doing one of the most important acts of your life. You want to know what you are doing at every step.

Save the most likely looking calves when they come. To be sure that they are just the ones to bring you the fortune you want to win may not always be possible. We are all liable to make mistakes. But most farmers are pretty good judges of a good calf. If the calf is all right, treat him right. That is, feed him the best you can. When cold weather comes on, get him in out of the storm, bed him down, keep him in a good comfortable stall and carry him down as you would a horse that you expected would take the premium some day.

Keep as many of these choice calves as you can. But not so many but that you can feed and otherwise do for them as you should. Lack of care cannot be made up for in any other way. Remember that, and act accordingly. In a few years you will have some nice cows of your own growing. They have not cost you much aside from your own care and feed. This puts you on the road to success.

Keep this up. Every year choose the best. Every year do your very best to make the best better. When you can, buy here and there a calf that seems better than any you have in your own herd. You can often find men who have calves they would part with for a reasonable figure. What if they cost you a few dollars more? It will be worth it. You will admit this when you are a little older.

NEST BOXES FOR EARLY HATCHING.

It is necessary in order to hatch out early chicks successfully to have the hatching done indoors, and this upon the farm must be mostly accomplished within the winter poultry house, during early spring weather, as the hens have been engaged laying in the winter house nests, and when becoming broody, will set more comfortably upon the nests where they have been accustomed to laying their eggs.

These nests must be cleaned up well and overhauled in order that during this period of early incubation, they will not become lousy and vermin infested and bring the brood hens from their nests, or drive off a badly infested hatch of chicks. We always remove all material from the nest as soon as the hen has decided to settle down to business, and into the bottom of the nest sprinkle a gallon of stove ashes well deodorized with kerosene and crude carbolic acid.

Then we form a mat of several old newspapers, saturate them well with disinfectant and place them into the bottom of the box. Upon this mat we place a sprinkling of ashes and a good quantity of soft straw, excoriated or other good nesting material, forming the nest into a roomy shape and lay the eggs quietly under the hen. In a nest of this kind the hen can be relied upon to sit and hatch through, without becoming infested with mites or lice and will brood off a brood of chicks that will not give the owner any concern, as to their health and vigor, for they will be free from the worst enemy of the early hatched chick which must spend much of its early life within doors owing to storms and rough weather. This we and is a little extra work, but pays us well for our labor.—Geo. W. Brown, Hancock Co., Ohio.

THE HORSE THE LARGE VS. SMALL ANIMAL ON THE FARM

Young Farmers Advised to Begin Life With Team of Ample Size.

THEY WASTE LESS TISSUE.

BY B. W. McKEEN.

The advent of the horse as a farm team is well within memory. In former times he was used only for road work and for some of the lighter operations of the farm. But the common use of farm machinery has placed the ox at a disadvantage and established a field for the horse, where he is of great use. The first pair of farm horses I ever purchased weighed twenty-two hundred and fifty pounds. They were considered of large for that time and many were inclined to think them too heavy or general farm work. They proved to be well adapted to our work and spent a



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life of usefulness with us. The next pair were slightly heavier, but were found to be more useful. Still it was necessary to have four horses when breaking willows, and a cart full of manure or potatoes, or large loads of hay taxed their strength to the limit.

In 1901 another change was made and this time a pair of well built, but fifteen hundred pound horses were brought to the farm. These horses have been used since then with the greatest of satisfaction. They carry the breaking plough through our heavy sod with ease. They handle the constant loads upon cart or hay rack without exertion and are always at their ease, with plenty of power to spare. They carry the mower steadily, cut a large area every hour, and are quick enough for them to follow upon smoothing harrow or corn cultivator. As they are never overworked, they are not working upon their nerve, and using curbs and build the tissues wasted by undue exertion. I am keeping careful accounts of their grain rations; feeding them myself, and am surprised to find that they thrive upon as small a ration as did our smaller horses. They consume slightly more hay, but not enough to materially affect the amount of keeping them. I conclude that it takes no more energy to do a given amount of work with a large horse than with a small one, and which system is not so severely taxed, there is less waste of tissue, consequently less food is required to replace it. Then, as they have no curbs, and are themselves, they are never ill at ease, but always take their work quietly.

I was much pleased when circumstances made it necessary to draw a very large load of hay over somewhat rough portion of the fields to observe the ease with which they did the job, carrying the load slowly over the uneven ground, and appearing to appreciate the necessity for great ease as much as did their driver. These horses have muscles, making foods and make a slower growth.

The pens must be kept as clean as possible. If success is looked for, this requirement can not be overlooked without serious loss. Exercise may be given in various ways, or the pens may be given access to the out door yards. I often throw tough strips of meat, strips of cabbage, even of white paper into the pens. A chicken never stops to see what he is running with when he is trying to keep the prize away from others, and leg exercise is what is needed. I keep the pens well littered with hay chaff, which I make into a pile three or four times a day. The chicks will level it as speedily as they can. When they are over a month old you can begin to hang cabbage heads in the pens, just high enough to make them jump well to get a bite. Study the antics of your broods if you expect them to fit the egg basket for you later on. Thoughtful, conscientious work is the price which you must pay for success in any business.

could be prevented by following practices in feeding similar to those mentioned under indigestion. Much being indigestible, Timothy hay, or clover hay, or any other balanced ration, with regular watering and sunlight, ever be, would avoid the lymphangitis, a disease in which the small vessels accompanying the veins are affected, sometimes known as "Monday morning" disease, could be prevented by moderate feeding and reduction of nutrimental food when the animal was not fit for work. Bran mash on Saturday night, and again on Sunday, or perhaps Monday morning, was a preventive. If the case became habitual, four drachms of saltpetre could be put in the Saturday night's mash.

COMMON AILMENTS OF HORSES.

During the Provincial Winter Fair, at Guelph, "Some Common Ailments of Horses" was the subject of profane discussion. Dr. L. Standish, of Waterloo, opened the discussion with a few general comments summed up as follows: Acute indigestion was commonly caused by excessive quantities of food. Digestion being aided by secreted fluids, the excess of food prevented these fluids performing their function. The lack of proper digestion gave the horse distress. Chronic indigestion was due to derangement of the mouth, preventing complete mastication, or to derangement of glands in the mouth, stomach and intestines. It could also be produced by excessive non-nutritious food. It was not the quantity of food consumed, but rather the quality assimilated, that kept the horse in condition. The food given should be regulated by existing conditions. If a horse had been ill for a time, smaller quantities were advisable until he regained his appetite. Animals should not be fed excessively when not working. Hay should not be left in the manger in front of a horse all the time. Flatulent and spasmodic colic were due to much the same causes. The ailments

POULTRY GOOD METHODS TO FOLLOW WITH THE CHICKENS

How to Keep Them From Getting a Chill, Their Feeding, Etc.

CONSCIENTIOUS WORK PAYS.

BY A. W. STRATTON.

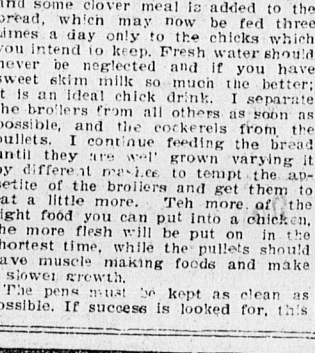
The main requirements are to keep them from getting chilled, to feed them just enough of the right food, to keep them clean, and to give them plenty of exercise. To begin with the first. Many people are too afraid of keeping their chickens warm. Did you ever see a hen with a brood of chicks on a hot summer night? Are the chicks cuddled closely under her wings, or do they break out a circle around her? Our brooders are 2 x 3 feet, with hovers two feet square over the heating pipes. We have made covers to supplement the hovers in cold weather, just the size of the brooders. The tops are of canvas instead of the heavy paper that is so often stopped. They each have a small door and two small panes of glass in front, the door being left open after the chicks are a month old. If the centre of the brooder gets too warm the chicks will be found with their heads sticking through the curtains every time, but if too cold they will crowd in the centre for the sake of the heat. It is better to have a brooder that is too warm under this arrangement than to have the heat get down.

The second requirement is harder to meet. I have had good success in feeding in the following way: I give dry rolled oats and warmed water for the first three days, and then the sweet feed. I always keep a box of broken charcoal before my flocks from birth onwards, and consider it one secret of success. I give a quart of clean water with each quart of feed, and a quart of cracked corn and more animal meal and some clover meal is added to the feed when they are now fed three times a day, and the water varying in amount to keep the chicks well. Fresh water should never be neglected and if you have a brooder that is not clean, it is an ideal chick, much the better. The brooders from all others as soon as possible, and the cockles from the brooders. I continue feeding the bread until they are well grown, varying it by different meals to tempt the appetite of the broilers and get them to eat a little more. Ten more of the right food you can put into a chicken, the more flesh will be put on in the shortest time, while the pullets should have muscle making foods and make a slower growth.

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AGRICULTURE THE LOSS OF THE FERTILIZING GERM IN STABLE MANURE

It Should Be Hauled to the Fields as Soon as Made.

HUSBANDING OF ENERGY.

BY A. M. KENNY.

The loss in the fertilizing value of stable manure begins as soon as it is voided and commences until it is thoroughly incorporated in the soil. How to reduce this loss of fertilizing elements to a minimum is a question that every practical farmer should study. While we have found that the most satisfactory results are obtained by hauling the manure direct from the stable and spreading it as fast as made. However, there are certain times of the year when weather conditions compel us to adopt different plans for a few days or weeks at a time, such as when there is deep snow, wet fields, and during the summer when we have no land that is not occupied by a growing crop. The manure made during the summer is then piled in flat heaps and left in that condition until after the small grains are harvested and then put on the poor spots in the newly-seeded grass land where it will be used during the fall and winter, besides furnishing considerable plant food for the grass crops the next season.

Where a three or four year rotation of crops is being practiced, the results are obtained by spreading out ten loads of manure to the acre on the corn crop. This is followed by a few small grain crops and the ground is seeded back to clover or timothy mixed. By practicing this method the plant food in the manure is added to the manure of the roots and stubbles of the different crops, also, the annual chemical changes of the soil by nitrification, which on most well managed stock farms will amount to equally as much fertility as the different crops remove from the soil, that is only the chemical side.

There is another side of the manure question, that has not been duly recognized until recent years, and that is the bacterial side or the number of soil bacteria that manure adds to the soil. Soil bacteriology is of first importance and we need to say this before the twentieth century is far advanced we will come to place as much dependence upon these bacteria and the results that they produce in changing the chemical constituents of the soil into a form available for crop production as we do upon the actual amount of plant food that the manure contains. With proper management and good cultivation a small amount of manure will go a long way toward the maintenance of soil fertility.

When all of the manure, both liquid and solid, have been saved by the use of straw and other absorbents, and the manure hauled from the stable direct to the field, there will be no loss from fire-fighting and washing and the animals will not be compelled to wade knee deep in the mire when turned out to drink and exercise. The work will be done at a time when other necessary farm work is not crowding the man and teams and the land besides being enriched, will plough easier and cultivate easier during the whole of the next season, owing to the soil being made porous by being covered during the winter. There is another point connected with the use of fresh manure, and that is the watery excreta which they contain. These assist in unlocking large amounts of plant food in the soil that would otherwise be unavailable to the growing crops. When spreading manure from the stable each day plan to manure the further ends of the field while the ground is hard or frozen and manure near to the roads and buildings when soft and wet. It is an unpleasant task to haul manure over a soft field and it also damages the soil by hauling heavy loads over it when the surface is soft. If you don't believe this try ploughing a nice even furrow where a season wheel has made a deep rut and the ground baked hard a few weeks later.

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ANSWERS TO CORRESPONDENTS

NOTE.—Not more than one question from one correspondent can be considered at one time. Questions should be specific, clear and concise, and should be addressed to the Editor of the Agricultural Department of this paper. Any person requiring answers by mail must enclose stamped envelope.—Editor.

C. W. Calhoun.—My young cattle are troubled with big gray lice. What can be done? Ans.—Turpentine is a good remedy for the trouble you speak of.

A. C. Tweed, Ont.—How can heaves be prevented when feeding timothy hay? Ans.—If hay is dusty dampen well when feeding and there is less danger.

G. B. A. Waterloo, Que.—Does sorghum make a good feed for milk cows? Ans.—It is excellent forage for milk, though the stalks are a little harder than fodder corn. It produces a little heavier yield and withstands storms better than does fodder corn planted thickly.

Subscriber, Listowel, Ont.—One of my heifers froze one of her teats about six weeks ago and have been unable to milk it ever since. A portion of the udder is hard and caked and am applying lard to this portion. 1. Is this the best to dry up the entire bag? 2. Will I be able to obtain milk from the frozen teat when she becomes fresh again? Ans.—No; only the affected quarter. 2. Not likely. Great care should be taken to prevent such accidents. A part of the body once really frozen never regains normal condition.

G. H. H. Ingersoll, Ont.—1. Sheep have ticks. What can be done, as they cannot be dipped now? 2. How will sheep and horses do in the same barn? Ans.—It was stated in a former issue that when sheep cannot be dipped they can be treated for scab or other parasites by preparing a quantity of sheep dip; have an assistant gently lay a sheep on its back, then from an old teapot pour a stream of liquid along the neck and belly to the anus. It will usually take less than a quart to thoroughly wet the body. In about a minute there will be an oozing of liquid through the wool at the back when the work is done. 2. While it is not ideal to have sheep and horses together, there are no serious objections where ventilation and temperature can be controlled.

C. R. S. Saskatoon, Sask.—Ewe, I have had six weeks is losing wool from all four legs and skin looks reddish? Ans.—It is impossible to tell just what is the trouble with your sheep, since the description is too vague. Such causes the wool to be pulled out in patches, and reddish areas here and there. It is unusual for the trouble to start on all four legs. If it is scab, careful examination should show more or less eruption and exudation or scabiness arising from the skin where the wool is being pulled out. The sheep would also be making an effort to rub where the skin is irritated. It would be well to watch closely for any further indications of scab. The disease makes its appearance slowly, but signs are present from the first. If scab is present, as soon as possible wash and dip in strong sulphur or tobacco dips. It may be that the sheep is troubled with lice which confine themselves to the hairy part of the legs. These also can be killed by dipping.

M. P. L. Brandon, Man.—My pigs three months old, are troubled by rectum coming out three inches. One died after being troubled four days. Now there are three more affected. Is this disease contagious? I feed corn and evening slop made of shorts with warm skim milk and water. Potatoes and pumpkins are sometimes also fed. I give castor occasionally. I have given raw linseed oil in slop, four tablespoons in two pails of slop, and have let them run in the yard with the stock. Are pigs are troubled with constipation and this has brought on prolapse of the rectum. It is difficult to see what should have brought the trouble if the pigs are fed as you say. Physic each pig with an ounce or two of castor oil mixed with a little milk given at once. Withhold all feeds except milk in small quantities for a few days and then feed only very thin, sloppy feeds. Wash lightly the protruded part with weak lye a couple of times daily. Greet with vaseline and put in place. If the rectum does not stay in place it is preferable to take a stitch or two across lower part of rectum. Do not leave stitches in too long. As soon as rectum stays in place, give pigs plenty of exercise and feed lightly on slop, easily digested feeds.

H. M. Compton, Que.—In raising lambs on cow's milk, how much should be fed and how often? Should whole milk be used or should it be mixed with water and sugar? Ans.—According to analysis of ewes and cow's milk, the former contains about twice as much fat and albumen and about the same amount of sugar and ash. The condition of the lamb's digestive system is more or less clogged at birth. The meconium or deposit of manure in the intestines during fetal growth must be removed. In nature this is provided for by the calostrum or first milk containing a large amount of fat that acts as a purgative. A similar condition must be brought about in artificial feeding. In our experience good results have been secured by diluting a given quantity of 20 per cent cream with four times its amount of whole cow's milk. After the first few days the amount of milk was gradually increased and the cream decreased so that at the end of 15 or 20 days the lamb was feeding on whole cow's milk. The milk should always be given warm and about the same temperature—98 to 100 degrees Fahrenheit.

At first the lamb should be fed every hour or two during the day, and then to five hours at night if we follow nature. The frequency of feeding can get larger and the lamb stronger, so that at three weeks of age the lamb would not be fed more than five to six times a day in the world except come from over that time (not over). At each feeding permit the lamb to take only enough milk to fill his little stomach. The amount to be fed varies with the size of the lamb.

Dairying is a very intricate business and requires much thought and careful labor, therefore it is best not to go into it too heavily at the start.