Soils and Crops

Address communications to Agronomist, 73 Adelaide St. West, Toronto

HANDLING THE YOUNG LAMBS.

Our experience has shown that the ewes that are in the best flesh and condition in the fall are the ones that breed first and, what is more essential, breed a larger per cent. of twins. We have heard flock masters say they "Would rather have one good single lamb than twins." With any well-cared-for flock this is a great mistake. Our experience has shown for many years that we get far greater returns from the ewes having twins.

Now, for the care of the ewe and young lamb. First, provide a clean, dry place for the ewe to lamb. While a warm place is certainly desirable, yet we feel a clean, dry place means more than the warmth.

The wise shepherd will pass through his flock very often and note each individual carefully as lambing time comes on. A wrong presentation is not unusual. A normal presentation is the front feet with the nose and head immediately following. Sometimes the hind feet appear first in this case. Be sure the bottoms of the feet are turned up. Should they be otherwise, the shepherd, whose hands have first been carefully washed and disinfected, and with finger nails closely cut, and having thoroughly greased the hand with some soft, clean grease, should carefully insert the hand and using plenty of time get the fetus turned over and probably all will be well.

We have had the front feet come first O.K., but the head turned back. This simply means untold suffering and final death to both ewe and offspring, unless assistance is given. In this case, after proper preparation as above described, the shepherd should, taking plenty of time and with great care, force back the fetus and following up until it is well back and while the hand is yet there carefully bring the head forward and usually the trouble is over. Sometimes, but very rarely, the rump may try to come first and the ewe labor for hours and even days with no visible presentation and finally die. The remedy is obvious. Insert the hand, force back the fetus and secure a normal presentation either way.

Nearly all farmers, we feel sure, are in far too great haste to help, as they think, in the delivery. First, be sure the presentation is normal and then go away and leave nature alone for at least three or four hours. The parts need plenty of time to expand and yield sufficiently for the delivery, and great injury and even death may result from too great haste.

If present when the lambs are dropped, avoid handling as much as possible, but be sure they are properly cleaned up and dried. Next examine the ewe's udder and see the milk starts readily from both teats. A very little stoppage in the end of the teat will discourage the weak lamb and result in much trouble.

It may, and with many farmers does, often occur in cold weather that the new born lamb becomes chilled and dies. In the case of chilled lambs, we use the warm water treatment. We found this treatment almost by accident many years ago and have had some most remarkable experiences with it, completely restoring lambs we had thought dead. We will not stop to relate them here, but for the benefit of some poor beginner will describe the process.

If the lamb is chilled, the mouth cold, and you fail to get him warmed up, simply immerse him in a pail of warm water and hold him there until every part is thoroughly warm. The water should be simply warm, not hot. We believe many lambs have been lost by the use of too hot water. The little lamb is very tender and water that would not seem hot to the human hand might prove fatal to it. The hand will stand much hotter water than our own bodies will. Any person who has tempered the water in his bath tub to the hand and then jumps into it, has done, just as I have done many times, jumped out again very quickly. If this is true with us, how much more so with the little new-born lamb. Now, in every case, get a draught of the mother's milk down the little lamb as soon as possible. When a little lamb gets up on his feet and a good drink of his mother's milk down him, his chances are certainly good.

Lambs should be docked and gelded while yet quite small. There are two or three reasons for this; first the nervous system is not so fully developed in a very young animal and any operation of this kind is much easier borne and recovery is much quicker. Then, too, it is much better to get this out of the way before warm weather comes on and flies become troublesome.

Some prefer to leave the tails on the wether lambs for convenience in sorting in the fall. But the flock looks much nicer if all have been nicely docked. The excrement of the young lamb is of such a sticky, gluey nature that their tails sometimes will become so stuck down to the body that movement of the bowels is impossible and the lamb will droop and die unless assistance is given. Soft grease applied to the wool will help greatly; but dock, and dock short, and the job is done and all further trouble is avoided.

One thing we have found about the eyes of sheep and lambs that many farmers seem not to have found. Both sheep and lambs often suffer greatly from troubles with the eye and unless the water runs down in quantities sufficient to saturate the wool the owner will not know it. A short time since, we bought a flock of pure bred Oxford ewes and the owner thought he was a good caretaker. But we found several of the ewes with a perfect ring of tickle-grass surrounding the eyeball and under the lids which, of course, caused great irritation and much suffering. We found, many years ago, that small lambs often suffer from having (please note carefully) the under eyelid simply turn in with the lashes against the eyeball. Not a year passes that we do not find many of them. The remedy is simple; simply draw down and turn out the lid and usually it will stay, but occasionally it may require many times. We once had a case where it would not stay and the lamb was going blind, so we simply clipped that portion of the lid off and effected a cure at once. We have one just now that we fear we will have to treat in the same way. This may seem cruel, but really it is far more humane than permitting the terrible irritation to be continued. This seldom occurs in lambs over two weeks old, but I think I have never examined a flock of young lambs in which I did not find some suffering in this way. —L. W.

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The Construction of the Hotbed.

Many of the most popular vegetables, such as tomatoes, eggplant, peppers, celery, and of our best flowers, are of southern origin and require a longer growing season than this climate permits. By starting such plants in the hotbed from six to eight weeks earlier than it is safe to plant out-doors, and later transplanting to the open, the required growing season may be obtained. Furthermore, by the use of the hotbed such vegetables as radish, lettuce, cabbage and cauliflower may be started early and thus reach development much sooner than if the seed were sown in the open.

The only really satisfactory location for a hotbed is one with a southern exposure, protected from north and west winds and unshaded to admit a maximum amount of sunlight. It may be made either above or below ground as desired. The former requires more manure, the latter more labor to construct. If above ground, the bed should be situated where there is no danger of water standing at the time; if below, the situation should be naturally well drained, or drainage would have to be provided. With this latter type, the soil should be removed to a depth of about eighteen inches and the cavity should be at least two feet wider and longer than the frame to be used. This operation is best done during the previous autumn, as it is often quite practical to start a hotbed before the frost is out of the ground to a depth of 18 inches. With the above-ground type the site merely requires levelling, which may be done in the spring as well as any time.

The frame may be made of inch and a half or two inch lumber. The most convenient size is six feet wide and of the required length to use one or more sash three feet wide. It should be from ten to twelve inches high at the front and, if six feet wide, sixteen to eighteen at the back. This slope allows rain water to run off easily and, as the hotbed should face south, a greater degree of sunlight is obtained than if the top were level. The sash must fit snugly and the frames be so constructed that they can be raised or lowered as ventilation is needed.

Fresh horse manure, as free from straw as possible, is the only satisfactory kind, for a hotbed, and that from grain fed animals is preferable. For a bed six feet square, one and a half to two tons is required. It should be secured and piled near the site a week or more before it is to be used, and turned as soon as it begins to heat, thus ensuring even heating and uniform texture. Four or five days after turning, the manure should be evenly heated and ready for the hotbed.

The bed of manure should be at least one foot wider every way than the frame to be placed upon it. It is laid down evenly in layers about six inches deep and each layer thoroughly tramped. The depth of manure required depends upon when the hotbed is made. If made early, two to two and a half feet are necessary, but if made during the latter part of March, one foot will be found sufficient. After manure has been placed to the proper depth the frame should be put on and more manure banked around the outside of it up to the top and at least one foot wide. The lights should now be placed on the frame and carefully closed so that the heat will be retained and the bed thus brought to a high temperature as soon as possible. After about two days the sash should be removed and the manure tramped thoroughly and watered if necessary. The hotbed is now ready for the soil. This should be of good fertility and of such a texture that it will not bake. If seed is to be sown directly in the hotbed, five or six inches of soil will be required, but if seed flats are to be used, two inches will be sufficient. No seed should be sown until the temperature in the hotbed has fallen to between eighty and ninety degrees Fahrenheit. After sowing, the temperature must be carefully observed, and if it gets too high the lights should be raised to provide ventilation. When the plants appear the frame should be kept aired sufficiently to prevent weak spindly growth, although the plants must not get chilled or be frozen. Water should be applied carefully, as too much will make for damping-off conditions. The soil, however, should be kept damp and this, together with sufficient air, light, and proper heat, will promote satisfactory growth.

Chronic Tympanitis.

This form of bloat is present in many cattle stables during the long winter period when cattle are standing in. Some animals may be affected by this form of digestive trouble, while others living under identical conditions are not. The affected animal boats up after feeding, but generally not to an extent to require puncture and relief by trocar and cannula. A purgative will generally give relief, provided the chronic bloating has been caused by indigestion, and not by tuberculosis of the pulmonary lymphatic glands.

The following dosage has been found very effective in relieving this form of bloat: one pound of Epsom salts, one-half ounce of powdered Barbados aloes; one ounce of powdered ginger, and one pint of molasses. Stir all for five minutes and give as a drench. After the operation of the purgative see that the feed is sufficiently succulent to favor easy digestion. Roots silage and clover are most useful in keeping the alimentary tract in good condition. The use of linseed meal and glauber salts mixed with the feed morning and night—a handful of each—is good practice should there be any indication that the general feeding is not laxative enough. Potassium bi-carbonate, powdered ginger and powdered gentian are very useful as a tonic to tone up the digestive system and thereby aid in the prevention of chronic bloat or tympanitis. Use equal parts of each, mix well and give one ounce at the beginning of the feed three times a day. Should chronic bloating continue after treatment the tuberculin test should be applied to the animal.

In-Breeding and Line Breeding.

Having located a successful mating, one can perpetuate easily so long as the originals are breeding, but the problem begins after the first mating ceases. Shall one breed mother and son, or brother and sister, or cousins, or what is the best procedure?

Our experience, so says Professor W. R. Graham of the Ontario Agricultural College, in breeding birds of very close relationship, such as mother-son or brother-sister matings, would not warrant us recommending such a procedure. It is true that we have had some successful results, but it is likewise true that most of such matings have been very bad. If one is anxious to breed closely, our experience would suggest a trial of any relationship, so long as the birds are vigorous, but it is not wise to depend entirely upon such a mating. A good in-bred bird will likely be a valuable breeder, but such a bird is difficult to produce.

It is very doubtful if one can say what relationship will give the best results, but to the average person it would appear to be good advice not to breed too closely, and to look for new blood from some source where the breeding has been similar.

Live Stock in Canada.

Dominion-wide statistics indicate that there were fewer horses, mules, cattle, and sheep in Canada at the end of 1923 than in 1922 and more swine and poultry. The figures supplied are: Horses, in 1923, 3,530,641 compared with 3,648,871 in 1922, a decrease of 118,230; mules, 8,722 compared with 9,202, a decrease of 480; cattle, 9,246,231 compared with 9,719,869, a decrease of 473,638; sheep, 2,753,860 compared with 3,263,525, a decrease of 509,665; swine, 4,405,316 compared with 3,915,684, an increase of 489,632; poultry, 45,469,292 compared with 42,930,562, an increase of 2,538,750. Horses and sheep have decreased in every province excepting British Columbia; cattle have increased in Ontario and British Columbia, but have decreased in every other province; swine have decreased in New Brunswick and Nova Scotia, but have increased in all the other provinces; poultry have increased in Ontario, Saskatchewan, Alberta, and British Columbia but have decreased in the Maritime Provinces, Quebec and Manitoba. These figures do not include the live stock on Indian reserves.

Oil cans are less expensive to use than monkey wrenches.

Keep house plants clean and free from dust. Water thoroughly when the plants need water rather than a little every day.

When fed to horses in large quantities, wheat is apt to develop digestive disturbances and also cause skin eruptions. The best plan to follow in giving the grain to horses is to feed in moderate quantities only. Grind it coarsely and mix with some other bulky feed like bran or chopped hay or straw.

THE SUNDAY SCHOOL LESSON

FEBRUARY 17

Joshua and the Conquest of Canaan, Josh. chs. 11-1, 23 and 24. Golden Text—Not one thing hath failed of all the good things which the Lord your God spake concerning you.—Josh. 23: 14.

CONTINUATION OF THE STORY—After the disastrous failure at Kadesh, the people of Israel remained in the wilderness south of Palestine for many years. They lived like the Arabs, a wandering life, seeking the wells and springs of water, and the best pasture lands. Eventually they passed south and east of the Dead Sea, through the lands of Edom and Moab, to the territory of the Amorites east of Jordan, whose cities they captured, though strongly fortified, and whose people they destroyed. Here, in the fortieth year of the Exodus, Moses died, and the leadership of Israel passed to his friend and loyal helper, Joshua. Joshua inherited the spirit of his great master. He had the task of conquest, and his fame is that of a soldier. But like Moses, he was loyal to Jehovah and exalted Jehovah as Israel's true king and Lord. Like Moses, he had the promise and the assurance of the presence of God. See Deut. 31:1-8 and 34:9.

Ch. 1:1. *Joshua . . Moses' Minister.* Joshua is called the minister or servant of Moses also in Exod. 24:13 and 33:11. Compare Deut. 1:38. He appears first as commander of Israel's fighting force in the battle with the Amalekites in the first year of the Exodus (Exod. 17:8-16). He was then a young man (Exod. 33:11), and through all the years that followed, was a faithful and courageous supporter of Moses. He "was full of the spirit of wisdom; for Moses had laid his hands upon him: and the children of Israel hearkened unto him."

V. 2. *Go over this Jordan.* The Israelite people were still on the eastern side of the river. They had taken possession of all of eastern Palestine from the Moabite country northward. See Num. 21:21 to 22:1.

V. 3. *As I said unto Moses.* See the promise to Moses in Deut. 11:22-25.

V. 4. *From the wilderness.* Compare the description given of the boundaries of the promised land in Gen. 15:18 and Exod. 23:31. The wilderness was the wild, sparsely populated country to the south. Lebanon is here the name given to the mountain range in the north. The river Euphrates is the ideal northeastern boundary, which was reached only for a brief period in the reigns of David and Solomon. The Hittites were, in the time of Moses and Joshua, a powerful people, living in the northern part of Syria, with Kadesh on the river Orontes, and Carchemish on the Euphrates, as their chief cities. A Hittite community was found as far south as Hebron, in the time of Abraham (see Gen. 23:3 and 25:9). The great sea is, of course, the Mediterranean, *"toward the going down of the sun."*

V. 5. *Not any man.* A similar promise to Moses appears in Deut. 7:24. The comforting assurance, *"I will be with thee,"* recalls the promise to Moses when he received his call at Horeb, Exod. 3:12. We find the same assurance of God's presence with his servants who are called to perform great tasks, often repeated in Bible history. Compare vs. 9 and 17, 3:7, 6:27, and Deut. 31:8 and 23. And with this goes the declaration of God's unfailing help: *"I will not fail thee, nor forsake thee."*

Vs. 6, 7. *Be strong.* Human strength and courage respond to the divine promise. God's servant must be strong and courageous in reliance upon him, and in obedience to his law. Compare vs. 9 and 18. It is well that the man charged with the leadership in the nation should be strong, courageous and steadfast in his adherence to the right. Such a man is sure to be greatly tempted, but he must hold unswerving allegiance to God's law, and "turn not from it to the right hand or to the left." And so doing, he shall "deal wisely" whithersoever he goes.

Vs. 8, 9. *This book of the law.* The reference seems clearly to be to the first written law, referred to in Deut. 31:9, as having been delivered to the priests and the elders to be preserved by them and taught to the people. It was probably some such law as we find in Deut. chs. 12 to 26. Prosperity and good success for Joshua and for Israel will depend upon its observance.

Ch. 23:1-3 contains the opening sentences of an address delivered by Joshua to the people when he *"was old and well stricken in years,"* (Rev. Ver.) He reminds them of the goodness of God and the great things which he had done for them, and exhorts them to steadfast courage, purity and faithfulness. It is a very noble valedictory, and its keynote is the exhortation of 1. 11,—"Take good heed therefore unto yourselves, that ye love the Lord your God."

APPLICATION.

The keyword of Joshua's character and of his commission is a master word, one to conjure with,—courage. And the tap-root of courage is knowledge of and obedience to the moral law. "Conscience doth make cowards of us all." That is, wrong-doing is the greatest enemy of courage:

Thus oft it haps that, when within
They shrink at sense of secret sin
A feather daunts the brave.

But courage comes when we have God's promises and his presence, when we have the assurance that we are on the side of right and truth, when we are conscious, though humble, of fitness for the task, when we are vigorous in our desire to do God's will. It is for this that we must, like Joshua, be dilligent in our study of "This book of the law." Here we see how God dealt with his people, how he kept his promises, how he revealed his principles and plans.

THE CHILDREN'S HOUR

A HAPPY REUNION.

"Right, ho! We must not stand here idly. Let's get busy and become real detectives," said Rolly Rabbit, as soon as they found Bruin gone from the trap. "Who will help me?"

"I—I will—I," chorused Frankie Fox, Willie Woodchuck and the little squirrel.

"We will let wise Frankie Fox be our chief," said Rolly. "He is always so clever at finding out secrets."

After Frankie had looked everything over carefully and had made several trips out among the trees, he said: "It is just as Rolly Rabbit thought first. Bruin went in that direction," pointing off toward the east. "His tracks seem to follow a man's and he must have been led away with a rope. We will follow them until we find him, and then plan some way of getting him away from the man. I am sure Bruin did not go away without being forced."

"So am I," chirped the little squirrel. "He was dreadfully afraid the man would come before we got back, and he did. But I ran just as fast as I could."

"You did your best, and if we are careful we may find Bruin before it gets dark," answered Rolly.

So off they started, Frankie Fox first, then Rolly Rabbit, then Willie Woodchuck, and trotting along behind was the little squirrel. Every few minutes Frankie would sniff the earth and nod his head, but they never stopped.

After a while it became dark and they could go no further. So they all curled up in a little nest of leaves by a big tree and went to sleep. Early in the morning they started on their way again. But Frankie Fox had slept so hard he just couldn't remember how Bruin's tracks smelled, and soon they were off the trail and lost.

All day long they wandered among the trees, and it was a weary and discouraged group that curled up on a bed of leaves that night.

Bright and early the next morning, just as the sun was getting up, the little squirrel got up too.

"I'm so hungry, I must find some berries," he said. "I'll slip out quietly and not get far away."

Nearby he found a fine patch of blackberries and when busily munching them right in the middle of the patch, he steped on something that caught his foot and made him fall.

"Ouchie, ow!" said the little squirrel, rubbing his bruised knee. "What was that? Why! It is Bruin's handkerchief, for it has his name on it."

Scampering back to his friends, he told them of his find and soon they were all on the right trail again. It was just an hour before they came upon Bruin sleeping by a log.

"Buzz-zz-zz! Buzz-z!" He was snoring so he never heard them.

Frankie Fox got a long blade of grass and tickled his ear, and Willie Woodchuck tickled his nose with a little twig. But when the squirrel tickled his toe, he jumped up with a start.

"Well, where did you all come from?" blinked Bruin, rubbing his eyes.

Then Rolly told him all about the dreadful time they had finding him, and Bruin told them about the man and how the little boy had unfastened his chain. With his sharp little knife, Rolly cut off Bruin's muzzle and they all started home, happy to be together again.

A recent survey of the hog population of Prussia shows a substantial increase, the number now on hand totalling 9,460,000, as compared with 8,683,936 a year ago.

To be a good farmer you must feed your mind, your body, your soil, and your soul. They are merely engines, that will run if you give them enough of the right kind of fuel, and will stop and rust if you don't.

A satisfactory winter ration for dairy cows kept at the Ste. Anne de la Pocatiere, Quebec, Experimental Station, consisted of corn and sunflower silage, roots, and mixed hay. To this was added a meal mixture of oats, corn, bran, distillers' grains, and oil cake. This ration was fed at the rate of one pound of the mixture for every four pounds of milk produced by the individual cow.

Remember that, for any profession, it takes a long course of study before any real and substantial success can be looked for. Don't take the advice of admiring friends alone, who will be sure to tell you that you can do anything and do it well without a preliminary course of preparation. It is not what comes to you, but what you come to, that determines whether you are to be a winner in the great race of life.