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EFFICIENT FARMING

Bloat in Cattle.

Despite all that has been taught and written on this subject many cattle still die of bloat, or acute distention of the rumen or paunch with gas. This is unfortunate, for the disease may readily be avoided in many cases and, when a case occurs, it need not prove fatal if the owner or attendant knows what to do.

Sudden changes of feed and feed that is in a damaged or fermenting state are common causes. But sudden excessive eating of rank, wet green clover or alfalfa is by far the most common cause.

Alfalfa in bloom does not cause bloat; but the sugar red-clover blossoms is most likely to cause it. Look out for bloat cases on hot, damp muggy days after a big thunderstorm and when the air is surcharged with electricity. There are many cases on such days. Make all changes of feed gradually and let all feed be sound.

The paunch or rumen fills two-thirds of the left side of the abdomen. When an animal is bloated the paunch becomes so distended that it may rise above the level of the backbone. The affected cow lags, stops eating, looks distressed, may slobber, breathes hard or gasps for air, and when about suffocated staggers and may fall and die. Urine and feces may be suppressed, but in some hot weather cases scouring may be present. In chronic cases the cow comes up bloated at night and by morning the distension has subsided. Such cases rarely are acute, but many of them are due to tuberculosis, and for that reason the tuberculin test should be applied by a veterinarian. Presence of foreign bodies in the second stomach also may cause frequent bloating of a subacute form.

Before giving medicine of any sort to a bloated cow, set her with the hind feet low to prevent the distended paunch from pressing upon the diaphragm and interfering with the breathing. Put a rope or round stick bitwice in her mouth, as that will pre-



David in Camp and Court, I Sam. 17: 1-18; 9. Golden Text, I Sam. 18: 14.

17: 1-19. The Philistines. Verses 1-11 are a part of the oldest narrative, verses 12-31 probably a later addition from another source. The whole of Saul's reign appears to have been occupied with the struggle against these clever, determined, and persistent foes, the Philistines. The vale of Elah was west and south of Jerusalem, on the border of the Philistine country. Not far away was the city of Gath, the home of the giant Goliath. Here the two armies were encamped, one on either side, with the valley and the brook between.

Goliath is described as a very big man, about nine feet in height, and as wearing a coat of mail, the weight of which was more than two hundred pounds. A cubit was a little less than eighteen inches and a shekel about three-quarters of an ounce.

David is here represented as a very young man. He is sent by his father with provisions for his fighting brothers and a present for their commanding officer. The picture of David's visit to the camp is drawn true to the life—his eager interest, his questions, the rebuke of his older brother, his indignation at the defiant challenge of the giant Philistine, his own unpleasing ambition combined with the exaltation of spirit produced by his faith in Jehovah the God of Israel. The older story, interrupted at the end of verse 11, is resumed in verses 32-54.

17: 40-49. In His Scrip. The scrip was his shepherd's bag. David was accustomed to the use of the sling, and trusted not to his familiar weapon rather than to the sword and armor of Saul. The sides of the narrow channel, in which the brook ran, were steep, and he would have to scramble down and up again. Only when he appeared on the farther side and drew near to the Philistine would the giant be aware of his coming.

Am I a Dog? The warrior is highly offended that this youth should come against him with only a staff in his hand. He does not seem to be aware of the sling which David carries or of the stones which are concealed in his bag.

In the Name of the Lord of Hosts. David knows the ancient songs and stories of his people. He knows that Jehovah has been called a "Man of War," that He is regarded as the Captain of Israel's armies, and that He is the Giver of Victory. The title "Lord of Hosts" originally meant God of the armies of Israel, but later, in the teaching of the prophets, it came to signify the Lord of invisible as well

Cane Fruits in Summer.

Cane fruits, including raspberries, blackberries and dewberries, growing under normal conditions, produce strong vigorous shoots from the crowns early in the spring. These become the fruiting canes the following year.

When they get to be about two and one-half or three feet high they should have their terminals pinched back an inch or two to stimulate the formation of lateral or branch shoots. This makes a more compact bush that is less subject to winter injury and that under ordinary circumstances is more productive.

The cane-fruit patch should be gone over several times during the latter part of May and in June, pinching back each time the shoots that have reached a height of two and one-half or three feet. The laterals should then be allowed to grow as long as they will until the beginning of the following season when they may be shortened to a length of from twelve to eighteen inches.

If for any reason the new shoots of the cane fruits have been allowed to become four or five feet tall without pinching, they should not be headed back during the summer. Such late heading would be liable to force the production of laterals that would not mature well before winter and that consequently would be more subject to winter injury.

As soon as the fruiting season is over the old canes that have borne fruit should be pruned out, carried off the patch or field and burned. If left during the summer and fall months, they harbor insects and diseases that, if spread to the new growth, decrease the next year's crop and shorten the life of the plantation.

The best and most effective way to deal with the insect and disease problems in the cane-fruit plantation is to cut out and burn the old canes im-

mediately after each fruiting season. They have to be removed anyway, and it is no more expensive or troublesome to remove them than later. When this plan is followed spraying seldom need be used for cane fruits. Commercial plantings of cane fruits need thorough cultivation throughout the growing season. In the case of small home plantings, heavy mulching with straw, leaves, corn-stalks, lawn clippings, etc., may take the place of cultivation. This helps to keep down weeds, conserves the moisture, keeps the soil cool during the hot summer months and otherwise promotes the health and growth of the plants.

Hay Slings.

There are still a few farmers who think that hay-forks are the best and quickest means to get a load of hay off the wagon into the hay mow. I really believe that this is because they have never tried hay slings, or have never seen them used anywhere.

Last summer I helped a neighbor haul hay. We loaded by hand, but had three slings on each load. About eighty rods from us another farmer was making and loading hay with twice the help we had. He unloaded with a double harpoon-fork. When we went to the barn at the same time, we would be out in the field again and about half loaded by the time he was through unloading and backing the wagon out of the barn. We made three trips with the slings to remove a load, where up to fifteen to remove a load.

There are some barns, of course, that might not stand a track or the use of a track, and hay slings require a track. A fork works a lot better with a track than without, but it can be used without a track quite well. But if the barn is strong enough to stand it, and is equipped with a track, I think it will pay to try slings.

Some farmers are using two double harpoon forks for the top of the load



Brides of 1920!—So many inquiries have come in regarding home weddings that the column is given up this week to that most interesting subject.

Of course every girl wishes her wedding to be as "correct" as possible and these few suggestions are set down for her guidance. Let her remember above all to have everything as simple as possible and when knowledge of what is "the thing" falls her, to use just common sense and good judgment. These will not let her make great mistakes.

While it is wise to plan in a general way as long in advance as possible, the first definite thing to be done is to attend to the invitations or announcements. Invitations should be mailed at least two weeks before the date of the wedding; announce-

ments are to be mailed the day of or the day after the wedding. For a small home wedding, announcements, stating that the wedding has taken place, are the proper thing and the few friends and relatives who are invited may be sent verbal invitations or brief notes written by the bride or her mother. The bride of course bears the expense of this and she can consult with the printer or the engraver about the form.

It is wise to ask the minister and his wife as long in advance as possible, so there will be no danger of the former having another engagement. The bride or her mother should attend to this.

Autumn, spring and summer are profuse in their offerings of foliage and flowers to the farm bride and a little artistic skill in arranging them will make the simplest wedding beautiful. A corner of the room, a bay window, or one end of the room if it is not too broad, may be transformed into an appropriate altar where the nuptial vows are to be exchanged. Soft candle light is preferable to bright, garish light, especially before and during the ceremony. The wise bride will avoid such artificial effects as paper wedding bells, stiff arches, bows and streamers of ribbon and so forth. A mid-summer outdoor wedding should appeal to the bride who desires something novel and likes the setting Nature provides.

At the first sounds of the bridal music, the minister, bridegroom and his best man emerge from a closed room downstairs and take their places in front of the altar facing the approach of the bride. Then the bride attendants come slowly downstairs in this order: the bridesmaids, maid of honor, flower girl or ring bearer and lastly the bride, alone or with her father or mother, or whoever "gives her away." The bridegroom advances a few steps to meet her and together they walk to the altar and stand in front of the minister. The bridal party is grouped about them.

It is not advisable to have a large number of attendants at a home wedding and many brides these days are doing away with attendants altogether except for some little youngster who acts as ring bearer or flower girl. One bride at a recent wedding had five of her little nieces and nephews accompanying her and they made an adorable addition to the wedding picture. If the bridegroom wishes to have two or four men attend him as ushers he may do so and they may precede him to the altar and wait at the foot of the stairway for the bridesmaids.

Immediately after the ceremony, the guests congratulate the young couple, the bride's mother or some member of the family lending off at once to "break the ice." It is the privilege of the bridegroom of course first to kiss the bride.

The wedding refreshments are served soon after the ceremony and the nature of the wedding feast depends entirely upon the time of the wedding. A morning or high noon wedding will be followed by a "breakfast," which is more in the nature of a luncheon; a late afternoon wedding by a regular dinner and an evening wedding by a supper.

If there is quite a large bridal party of young people, they may occupy one table by themselves. If the bridal party is small, then the parents of the bride and bridegroom and the minister and his wife could be seated together. Lighted candles, low bowls of flowers with ferns scattered on the white cloth make the prettiest table decoration.

A regular dinner would call for a substantial menu; but if facilities are limited, it is wise to confine it to two courses. For the wedding supper, creamed chicken on squares or triangles of toast, or chicken salad or two or three kinds of cold meat and potato salad might be prepared as the main articles of food.

The bride's cake is brought in with the last course and placed in front of her for her to cut. It is supposed to contain a penny, a thimble and a ring and of course there is much merriment to see who captures these "prizes." And of course each person must make a wish before eating the cake. The bridegroom's cake is a dark cake and it is already cut before it is passed. The bride must not forget to throw her bouquet before she leaves to get ready for her departure, the tradition being that the girl who catches it will be the next bride.

If farmers worked eight hours to-day, and struck each week for higher pay, before 'er long, Unless I'm wrong, Folks wouldn't eat three times a day.

SPROUTING OF THE BEECHNUT.

A beechnut is a pretty small thing. There it lies in your palm, beautiful with its three corners, sweet after you have broken its shell; but who would think to look at it that there was anything like power about it? And yet, no scales are large enough to weigh the possibilities wrapped up in it.

By the side of a road I used to travel, one day in the long ago a beechnut dropped to the ground. The wind drew a bit of earth over it; dew, rain and sunshine stirred something within it into life, and a little tree sprang up over the spot where the nut had been buried. The slip grew into a sapling.

Who was it that placed a big stone where the big limbs branched off from the trunk of the tree? No one knows, but the little beech tree was not discouraged by the weight that had been put upon it. It kept growing, and as it grew it lifted the stone higher and higher until, at the time when I saw it, it was higher than the head of the tallest man. Who knows but the tree was the stronger because of the load it had to carry?

A man I know had a dream one day. The thought took possession of him that he could take an old, run-down piece of land not far from his home and make it give him a living. As first, doubt laughed in his face. "Oh, you can't do it!" The other man tried it and failed. "Do you think you are any better farmer than he was? You have a good job, stick to it. You would be a fool to drop a certainty for a thing that is away yonder in the future. Why take a leap into the dark? Only fools buy pigs in a poke."

To-day that man's little farm is a beauty spot on the face of the world. He has smoothed away the rough places in the meadows; he has made over the house and barn; he has gathered about him some of the best cows and hens and horses to be seen anywhere; and best of all he has given the world an example of what a big idea in the heart of a real man can do.

Working on alone a man lifted himself out of the furrow and said, "I have done something with my two bare hands; but if my neighbors would put their strength with mine, we could stir the world! I believe they will do it if they once know the worth of united action. I'm going to try it."

Not ten rods down the road a Smer met him. "Farmers never have stuck together; they never will. They are too independent in spirit. You will waste your time. Better go back home and go on with your own business; let other people attend to theirs." Straight on he marched, his head high and his lips shut hard. "You have said that so long you think it is true. I'll show you it is a lie! Farmers will be true to one another. They will stand shoulder to shoulder! The time has come when they must do it and they will. Get out of my way!"

And that thought of the man in the furrow is coming true. Everywhere to-day farmers are getting together for action. The world sees this and wonders. There is a trembling in the ranks of those who have fattened on the hard-gained proceeds of the farmer. The writing on the wall is plain. United action is lifting the big stone that selfishness has placed upon it higher and higher. In dairying, in grain growing, in the purchase of feed and utensils and other things needed for the farm—co-operative effort is gaining ground every day; and the time is near at hand when the beechnut will have lifted its burden far out of sight. Speed the good work!

Points of a Good Haystack.

Whether a haystack keeps or not depends almost wholly upon two extremes—the character of the bottom and the condition of the top. If these are all right the middle will take care of itself.

Stacked hay should always be carried upon some kind of a foundation. The character of this foundation depends largely upon the material at hand. Rails, poles, lumber, even tree tops, may be used to advantage. I have used straw with success. Whatever the character, the object is to provide some sort of way of preventing the hay from coming in direct contact with the ground. If it does, a foot or two of hay will be damp and mouldy. A foundation is generally much cheaper than hay.

The top of the stack generally gives more concern than the bottom. The problem of the top resolves itself into one question: Will the top be water? Whatever is done must be with the thought of rendering the top rain-proof.

Generally a stack can be rendered rain-proof if the right kind of material is used in "topping out" the stack. Long straight timothy is excellent for this purpose; also, bluegrass and prairie hay. To get the best result this topping material should be laid on in the form of layers. The various layers should drop down the sides three or four feet, shingle fashion.

I have found a lawn rake an excellent tool with which to comb the top layers. If this is done the rain-resisting character of the stack is increased a hundredfold. It is also well to comb the sides in the same way. As a last feature the top should be weighted in some way. Heavy blocks of wood fastened together with wire or binder twine, suspended equal distances down the sides, answer well for this purpose.



Taking Stock on Canada's Fifty-Third Birthday

(Concluded from last week.)

Canadian Agriculture.

To turn from crops that require a lifetime for their growth to those which are harvested annually, in other words, to turn from forestry to agriculture, we find conditions less alarming, but not satisfactory. Canadian agriculture faces many problems: labor, transportation, improvement of social life, etc. From a conservation standpoint, however, the most important question is that of maintaining the productivity of the soil. This is the basic problem, for without soil fertility there can be no agriculture. If we waste this greatest of all natural resources, the prosperity of the farming community and of the nation as a whole is doomed to decline. The Soil Fertility Congress, held at Winnipeg on the 14th, 15th and 16th of June, was called to discuss the best means of combating the various tendencies that menace Canada's crop-producing power.

The chief constituent of soil, influencing its fertility, is humus. This is the organic portion, consisting of partially decayed animal and vegetable matter. The virgin soils of the western prairies are especially rich in humus, derived from the grass through ages of uninterrupted growth and decay. Continuous cropping of wheat has very seriously reduced the humus content in older sections. Wild plants return to the soil and contribute to enrich it by their own decomposition, but cultivated crops are removed. Hence, it is necessary to return to the soil the humus content which will keep the humus content up to standard. This is most easily done by the application of barnyard manure.

The proper storage of this valuable manure must be studied, that its valuable constituents be not leached out and lost. Humus can also be returned to the soil by plowing under soil-crops, such as clover, or by means of various fertilizers—nitrates, phosphates, etc.

It is not merely necessary that plant food be in the soil; it must be there in available form. Nitrogen, for example, is present in large quantities in the air we breathe. In this form it is useless to most plants, which require it in the form of soluble nitrates. Certain bacteria, however, possess the power of obtaining free nitrogen from the air. Clovers and other legumes by means of certain nodules on their roots, are able to co-operate with these bacteria in the obtaining of free nitrogen, which they build up into compounds that are available for other plants. Hence, the plowing under of a crop of clover enriches the soil. To obtain the best results, it is necessary to inoculate certain soils with the nitrogen-gathering bacteria. The introduction of this system of soil inoculation is one of the triumphs of modern agricultural science.

Another question which has an intimate relation to the conservation of soil fertility is that of a proper rotation of crops. All plants do not require the same substance in the same proportions. Each crop rests on the soil in its own way. If one species is grown continuously on the same area, the soil becomes progressively less suitable for it. On the other

hand, if, for example, cereals are rotated with hood crops, as turnips, mangels, or corn, or with hay and pasture, an opportunity is presented to kill out the weeds and to return to the soil matters which the cereals have drawn heavily upon. A suitable rotation must be worked out by experts for each section of the country. Herein lies the value of the Illustration Farms, which aim to set up in each neighborhood, through the co-operation of some prominent farmer of the district, a farm where the good results of the most approved methods of tillage may be demonstrated, under the direction of the Government's experts. The Experimental Farms is the laboratory where new ideas may be tested; the Illustration Farm is a place on which the methods which have been proved successful may be placed before the eyes of the farmers of the district. Outdoor meetings are called to inspect the results and the reasons for whatever process may be under demonstration are explained by an agricultural adviser.

State of Our Fisheries.

The near extinction of some of our most valuable food fishes is a sad story of human cupidity and lack of foresight. The decline of the Fraser River salmon fishery is a classic instance of this. In the face of repeated warnings by fisheries experts both in Canada and the United States, the wholesale slaughter of salmon has gone on year by year. All attempts to draw up a treaty to regulate the fishery have been frustrated. The canning interests of the state of Washington have put up a consistent and hitherto successful opposition. "Get rich quick and damn posterity" has been their general attitude. Today, it is very doubtful if the Fraser River fisheries can ever be restored—certainly, not without very drastic measures, such as the imposition of a complete close season for at least four years, which period is the cycle of the salmon's existence.

The sockeye salmon is not the only fish whose numbers have been seriously diminished by reckless fishing. The lobster of Nova Scotia, the oyster of Prince Edward Island, the shad of New Brunswick and the whitefish of the Great Lakes have all suffered in a greater or less degree. The establishment of government hatcheries and more stringent regulations are, however, tending now somewhat to relieve the situation. The fact that in these cases the Canadian Government has full control is an advantage. International complications, like those connected with the Fraser River situation, do not arise in an acute form.

Preservation of Wild Life.

What is true of the fisheries applies also to terrestrial forms of wild life. We all know what has happened to the buffalo of the prairies. The caribou are going the same way. No species is so numerous that it cannot be exterminated. The passenger pigeons flocks as literally to darken the air. To-day, there is absolutely not a single survivor of those vast multitudes. Shotguns and traps have wiped them out.

Many of our wild animals have a direct economic importance. This is