

form, or sleepy milk fever. If she dies, you hardly know it. If she begins to recover, the recovery is rapid—something like a man that has been dead drunk; you might almost imagine you hear her say, as she raises her head, "What has all this been about?—let me have something to eat." Her milk has returned, and she is looking for straw or hay—this is the second or comatose form. The third form is the apoplectic. The first symptoms are grinding the teeth; the cow is easily excited; staring eye; bellowing; becomes quite unconscious; struggles violently; looks wild, but is quite blind; stertorous breathing; after she is down, throws herself from side to side or on her broadside; continues in this violent way until she gets exhausted; sinks down into a comatose state for a short time. If she is to recover she gets quieter, but she may die in this violent state; the pulse in such cases is always inclined to be strong and wiry—this is the third or apoplectic form. This, then, is but a short description of what I find to exist in our practice in Renfrewshire. And with cases of milk fever there are three distinct forms of the same disease, and, to my mind, the man that treats all these forms alike is committing the greatest blunder that anyone could; for if what I have said is true, if you give a stimulant to the worst or apoplectic form you are just increasing the disease, while with the sleepy or comatose form you can give stimulants freely, but no sedatives or depressing medicines, while with the partial paralysis often a very little attention brings them round. I cannot dwell on the nature of the symptoms nor the condition of the bowels and stomach while the animal was in this first stage of the fever, but I may mention that I found, by passing a long probe into the stomach, and keeping it for a time in an upright position, I could not detect a single movement of the first stomach; while if I pierced the stomach of a cow swelled with gas, and tried the same probe, all my strength could not prevent it moving round, thus conclusively proving that the stomach at the earliest stages was in a very passive, if not entirely inactive, state.

The question then arises, Would this condition of the stomach of a cow, if allowed to continue for say one or two days, produce that brain affection that we have described as secondary symptoms of the disease? It would; for we have staggers in the cow, very often caused by indigestible food, and the symptoms of the disease are quite the same as the apoplectic cases of milk fever, and in many cases are identical. If we examine the cow's stomach in a case of stomach-staggers, we see inflammation of the first stomach, showing that staggers is an inflammatory—that is, a structural—disease of the stomach, while milk fever is functional derangement. We have tried to prove that milk fever, with almost identical symptoms, is a functional disease, because the stomach has simply stopped acting, and no doubt, from what we call reflex action, the disease of the stomach was reflected to the brain. Dyspepsia, or derangement of the stomach, can take place at any time, and as we know that the cow belongs to a class of animals which require to perform a function peculiar to themselves in order that their stomachs may be in order—namely, to chew their cud—you can readily understand that when such a change in the system at calving takes place, and when every blood vessel of the cow's body is gorged with blood, if the cud-chewing operation is interfered with when the stomach is filled with food, if it is suspended longer than it ought to be, the contents of the first stomach become a source of irritation, and this irritation is communicated to the brain. This going on for a time causes an irregular flow of blood to the brain and nervous system, causing giddiness and all the other symptoms. Let us look now at prevention. If this theory is correct, the best prevention is to keep the first stomach and the second very empty. Some think that by allowing the cow to calve on the grass, and letting her suckle her calf, milk fever would be prevented, because it is imitating Nature. My experience does not correspond with this statement, for many a cow have we had to take from the field in a helpless condition through milk fever, the owner having just adopted this method for a trial. What my theory with regard to the disease leads me to as the best preventive, is to keep the first and second stomachs comparatively empty, and you will do more good in the way of preventing this disease than all the methods I know.

We come now to consider the cure for milk fever. It takes all the skill and all the remedies of a well-trained veterinary surgeon to cope with milk fever. After you have heard that there exists three different and distinct forms of this disease, and that the remedy for one would hasten on death in another, it would be unwise of me to ask you to injure your own property. But there are certain things you can do, and others you need not do, in such cases. When you hear a cow grinding her teeth, either before or after calving, give her nothing but a drink of water for at least two days, with a small handful of hay or straw. No soft meat should be given, for perhaps she is not cud-chewing. Do not tempt her to eat; she has possibly a hundredweight of food on her first and second stomachs, enough to serve her for four or five days. If the milk is much less than she ought to give, be doubly on your guard; if she becomes giddy, keep an assistant steady her. Do not attempt to bottle at this stage, especially if she is much excited. If you do, the medicine will in all probability pass partly into the lungs instead of into the stomach. You may think at such times that the cow is a bad swallower, but the truth is she cannot swallow. Sometimes the jaws get stiff

and rigid. Take care in such a case while bottling to hold the head in line with the body, and if she coughs, let down the mouth though you should lose all. Do not let her lie flat on her side, but bolster her up, and give her head comparative freedom. She must be turned over at least three times daily. Do not give purgatives if she has been at grass; and give very small doses of physic, if any. Put a cold cloth to her head and spine, and see that her hind legs are in a proper position; and last, but not least, send at once for your veterinary surgeon.

The reason, then, why a cow takes milk fever far more frequently than any other animal is that she has four stomachs, and she must of necessity have a larger supply of nervous energy to keep these stomachs in order, and on this account they are far more easily disarranged when parturition occurs. When the cow's stomach is disarranged she cannot vomit as other animals can to expel the offending food, and therefore, getting no relief in that way, the sickness is protracted. I have long had in view a method whereby some of those fatal cases that occur when cows are at grass might be remedied; but the difficulties are great. It consists in emptying the stomach by pumping off the food. Medicine, I am quite certain, is of no use when, perhaps, 1½ cwt. of fermenting grass is lying on the stomach, and I have stated that in other animals an emetic relieves the animal, while the same medicine given to the cow produces no action at all. For five years I have endeavored to construct a pump to accomplish this purpose, and by next spring I hope to have my object accomplished, since I have obtained a metal tube—the first, and I believe the only metal pipe that has ever been passed into a cow's stomach by the mouth. Since I have obtained this tube—made of aluminium, and quite as flexible as an ordinary probang, and with an opening 1 in. wide—I am almost confident that I will succeed.

MISCELLANEOUS.

Fine Feathers at the New York Horse Show.

A New York paper employed a mathematician to estimate the amount of money that the recent horse show in that city put into circulation, and he tabulates the results of his enquiries as follows:—

FINE FEATHERS FOR MAIDS AND MATRONS.	
10 women spent at least \$2,000 each in dress and jewels.	\$ 20,000
50 women spent at least \$1,000 each.	50,000
100 women spent at least \$500 each.	50,000
500 women spent at least \$200 each.	100,000
1,000 women spent at least \$100 each.	100,000
2,000 women spent at least \$50 each.	100,000
5,000 women spent at least \$20 each.	100,000
Total.	\$520,000

TO ADORN THE STERNER SEX.	
25 men spent with tailors, hatters and haberdashers, \$500 each.	\$ 12,500
100 men spent at least \$250 each.	25,000
500 men spent at least \$100 each.	50,000
1,000 men spent at least \$50 each.	50,000
2,000 men spent at least \$25 each.	50,000
5,000 men spent at least \$10 each.	50,000
Total.	\$237,500

TOTALS TO WHICH ALL CONTRIBUTED.	
Paid for admission and for boxes at the show.	\$150,000
Hotel bills and railroad fares of out-of-town visitors.	100,000
Carriage hire.	50,000
Special dinners and luncheons.	100,000
Flowers.	25,000
Entrance fee for horses, wages to special attendants, etc.	100,000
Total.	\$525,000
Grand total.	\$1,282,500

QUESTIONS AND ANSWERS.

[In order to make this department as useful as possible, parties enclosing stamped envelopes will receive answers by mail, in cases where early replies appear to us advisable; all enquiries, when of general interest, will be published in next succeeding issue, if received at this office in sufficient time. Enquirers must in all cases attach their name and address in full, though not necessarily for publication.]

Veterinary.

COUGHING CATTLE.

RANDOLPH SPARROW, Sheppardville, Man.:—"A number of my cattle have coughed for some time; one of them has had it nearly a year. I had them tested for tuberculosis and they were pronounced clear of it. Can you let us know in the ADVOCATE what it is likely to be?"

[The cough may be the result of some chronic bronchial affection, brought on by undue exposure to cold and wet. Your cattle, however, may be suffering from tuberculosis, notwithstanding their not responding to the test. I presume you had them tested with tuberculin, but that test, unless it is properly conducted, is very far from being reliable, and, even when it is carefully and correctly applied, it is not by any means infallible. Without having the opportunity to make a personal examination, I would not be in a position to give a correct opinion as to the cause of the cough. You are within easy distance of two veterinary surgeons, why not have one or both of them examine your cattle?]

W. A. DUNBAR, V. S., Winnipeg.]

PROBABLY ACTINOMYCOSIS.

SUBSCRIBER, Brandon, Man.:—"Please let me know in next issue of the ADVOCATE what is the cause of a hard swelling coming on the jaw of cattle? It is movable, and comes on near the windpipe—first one side, then on the other, and in time bleeding."

[Perhaps the ailment is actinomycosis, usually known as "lumpy jaw"; but without a more def-

nite description of the disease than your note contains, I would not be able to give a decided diagnosis. Are many of your cattle affected? Do they cough? When the lumps break do they decrease in size or do they continue to grow larger?]

W. A. DUNBAR, V. S.]

EPILEPTIC FITS.

A GREENHORN, Kemnay, Man.:—"I have a bull calf six months old that takes fits. He drops suddenly as though stunned, rolls his eyes, and seems to be trying to get up again; sometimes walks around on his knees, then becomes exhausted and lies down; breathes very quickly; very unsteady when he gets up, and after ten or fifteen minutes commences to eat as well as ever. Fed on oat sheaves and a little chop; in good condition. Please tell me what is the matter, and cure?"

[Your calf is the subject of epileptic fits. The cause is in most cases obscure; but this peculiar affection is sometimes the result of faulty digestion, worms, etc. Give the following on an empty stomach: Raw linseed oil, eight ounces; turpentine, six drams; oil of male fern, one dram. Repeat this dose in one week, and then give, for ten days, morning and evening, in sloppy food: bicarbonate of soda and powdered areca, of each one dram.]

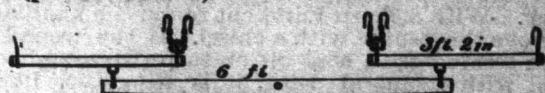
W. A. DUNBAR, V. S.]

Miscellaneous.

HIGHEST BUTTER YIELD—3 HORSE WHIFFLETREE.

W. C. WATSON, St. Lawrence Co., N. Y.:—"1. Can you give me the name of the cow of any breed which made the most butter in one year? 2. Give through the ADVOCATE some drawings of three-horse whiffletree."

[Pauline Paul (Holstein-Friesian); 1,153 lbs. 15½ ozs. (private record).]



Three-Horse Whiffletree.

2. "Make a doubletree 6 feet long and attach to either end of it a whiffletree 3 feet 2 inches long. Put common hooks on the long ends and a pulley on each of the short ends, putting a chain about a foot long, having a hook at either end, through them, to which the traces are to be attached. It will be noticed that the clevis is attached to single whiffletree, one foot from the inside end. This equalizes the draft among the three horses."

The above plan was contributed by Thos. Martindale to our Helping Hand Department, May 1st, 1896, issue. We invite readers who consider they have better three-horse whiffletree arrangements to send descriptions of them to us for publication for the benefit of fellow readers.

RATION FOR MILKING COWS AND FATTENING CATTLE.

J. D. S., Oxford Co., Ont.:—"My cows are not milking so well as I think they ought, and I fancy their ration is not as it should be. Can you give me your opinion of the ration? What properties are deficient? What should I add to make it perfect? Can you explain the course of the effect of a change of ration such as you might recommend? We feed ensilage (cut when corn was in early milk), 35 lbs.; mangels, 25 lbs.; oat chop, 6 lbs.; straw ad lib. each to fresh milkers. Strippers get no chop. 2. Our heavy fat cattle get ensilage, 40 lbs.; turnips or mangels, 33 lbs.; pea and barley chop (equal weight of each), 12 lbs., and straw, what they will eat. 3. Can I obtain any bulletin on the composition of foods, issued by the Government; if so, what and where?"

[1. While food has much to do with a copious production of milk, it is very important that the animals to be fed, to produce milk, have the necessary capacity as dairy cows. Knowing that the cows in question are all fresh, we would blame their capacity for milk-giving somewhat for the unsatisfactory flow, provided they are in good heart, though the ensilage is probably deficient in solids. While the ration being fed is evidently lacking in protein (flesh- or casein-former), we would not expect its effect to be noticed for at least a few weeks after calving, as the energy of milk-production is so great in good milk cows that it continues for a time unaltered, even when the fodder does not supply sufficient materials. The deficiency is thus supplied from the body of the animal, and the latter loses flesh and fat. As has been stated, the lacking constituent in the ration being used is protein, which can be supplied by feeding pea meal, oil cake cotton-seed cake or bran. As we all like to avoid buying, if possible, we would suggest that the grain ration consist of 2 lbs. of oat chop and 4 lbs. of pea chop, as peas are much richer in protein than oats. If oil cake or cotton cake can be conveniently procured, a good mixture would consist of 3 lbs. of oats and 3 lbs. of either of the cake meals. Regarding the explanation of the effect of supplying the lacking ingredients upon the milk flow, it must be understood that the elements of the animal body consist largely of (1) albuminoids (mainly protein); (2) fat; (3) carbohydrates; (4) ash. The same may be said of the composition of milk, which we know is a perfect food, as it alone can sustain life and supply the elements of growth to the young animal. In the life of the animal, each and all of these constituents are wearing out or burning up, so that without a continuous supply of them the body can not remain normal, nor produce what it does not contain. Therefore, it is all-important that all the constituents of the animal body, which are also the constituents of milk, be supplied in the food, in order that the cow may retain her best