

nearly wore away after two weeks. On account of swelling and stiffness in hind legs have had to keep her on a limited ration. Has eaten all given her and, though thinner than usual, is now giving three (3) pails of milk daily.

A. & G. RICE.

Oxford Co., Ont.

[NOTE.—"Calamity Jane," referred to above, was the Holstein-Friesian cow that won the sweepstakes prize in the dairy test at the Guelph Fat Stock Show of 1895, under the rules of the British Dairy Show; also capturing the FARMER'S ADVOCATE special trophy for best pure-bred dairy cow.—EDITOR.]

QUESTIONS AND ANSWERS.

Legal.

SUBSCRIBER, Muskoka and Parry Sound:—"1. A goes before a J. P. and lays information against B for hunting deer on the water under the Ontario Game Laws. B is found guilty and fined on one charge, the other is dismissed with cost on A. Is that justice, and is A compelled to pay it by law? 2. A rents a house from B; lives in it for some time, then leaves without paying the rent, but left all his furniture, promising to come and settle for the rent. A also left a sewing machine with C as security for debt contracted with C. A was to settle in a couple of weeks or so. That was eight months ago, and the stuff is still here. What must B and C do to collect what is due them off the goods?"

[1. The effect of the dismissal of the one charge with costs is that A pays the extra costs of the proceedings, if any, which were occasioned on account of the dismissed charge. 2. B and C, if possible, should get A to consent to a sale of the goods or get A to release all claims on them. If, however, this cannot be got, then B and C simply hold liens on the goods for the rent and money lent, due to them respectively, and can only continue to hold the goods till the liens are paid, or enforce payment by an action and get an order of the court directing a sale of the goods for the payment of the liens and costs. B cannot now even seize and sell under landlord's warrant, the tenancy having expired. If C actually lent money directly upon the security of the machine, he is, perhaps, liable to prosecution for a breach of the "Pawnbrokers' Act."]

Veterinary.

THUMPS IN YOUNG PIGS.

MR. R. REYCRAFT, Middlesex Co., Ont.:—"Three weeks ago my sow farrowed nine beautiful pigs. The sow was in good condition, and I kept her well in a comfortable pen. At about two and a half weeks old the young pigs began to get dumpish, pant and cough, and within a few days most of them had died. What was the cause, and how could the trouble have been avoided?"

[The trouble and its cause are indicated on the very face of Mr. Reycraft's letter. Such cases are quite frequent, and always occur with sows in good condition and too closely confined. The trouble is doubtless what is frequently called "thumps." The little pigs usually do well—in fact, become quite fat—when all at once the panting and coughing commences, and death soon relieves the sufferers. We have never met a case of "thumps" where the sow had the roaming of fields or the barnyard up till farrowing time and a roomy pen with an outdoor run after farrowing. The trouble is doubtless a physiological one on the part of the sow, due to a lack of earthy matter, which she would have found for herself in the soil had she been given an opportunity. Mr. Theodore Louis recommends the following condiment for pigs of all ages that are confined to pens: Six bushels of charcoal broken into the size of hazelnuts, six pounds of salt, and a bushel of wheat shorts. Put these on the floor and mix with a shovel; then dissolve a pound and a quarter of copperas in a large pail of water, and sprinkle it evenly over the charcoal mixture; then mix thoroughly and put in a box. Keep a quantity of this mixture where the hogs can get at it, and they will keep their systems in healthy form by eating it liberally. If plenty of sods are thrown in to confined hogs, much the same results will be realized as when the charcoal mixture is eaten. When the sow's system and food lacked necessary elements for the animal economy her milk could not be perfect, which would cause the young pigs to go wrong, especially when their heart and other internal organs become surrounded with fat. The remedy lies in prevention by allowing the sow plenty of exercise and free access to earthy matter, by feeding roots or other green food liberally, and by giving the young pigs plenty of sunlight and room to run around.]

Miscellaneous.

TOP-GRAFTING STOCK FOR CLAY LANDS.

A. E. J., Cobden, Ont.:—"I would like some information regarding the best stock to use in planting apples in low clay lands, with a view to top-grafting."

[The question of the most suitable stock for planting in heavy clay soil with a view to top-grafting in the future is a most interesting one. While we have nothing absolutely definite in the way of actual experiments on this subject, yet from stray bits of experience collected here and there I am led to believe that the Hyslop crab makes one of the most satisfactory stocks for this purpose. While the Transcendent crab grows here and there in small gardens along the St. Lawrence,

in Quebec, which is undoubtedly a district of heavy clay soil, the Hyslop seems to do rather better in these soils than most other crabs, and very much better than any variety of apple that I know of. It might be planted out at two years of age and top-grafted the second year after setting it out in orchard. In this way, while I would not recommend this as a method for starting a commercial orchard, yet I think in this way sufficient quantity of apples could be grown for home use, and perhaps for small local market purposes.

JOHN CRAIG.

Dominion Horticulturist.

Central Experimental Farm.]

HEDGES AND VARIETIES OF APPLES.

W. J. K., Beachburg, Ont.:—"For a small hedge which is best, purple or Thunberg's barberry? Can Pewaukee, Ben Davis, and Salome apples be planted here?"

[Purple barberry certainly makes a beautiful hedge, but is naturally a taller and stronger grower than Thunberg's barberry, but may be kept down by frequent pruning. Thunberg's is naturally a dwarf grower, and in this respect is very desirable. It is very beautiful at this time of year with its crimson foliage and berries. Perfectly hardy.

Pewaukee and Ben Davis apples are, I think, profitable varieties to plant in Brockville or west of Brockville. The former could be safely planted at Beachburg; I fear the latter would not prove hardy. Of Salome I am unable to speak from very extended personal experience. In this locality it has thus far succeeded very well and is bearing heavily every year. It is one of our longest keepers, but the fruit is neither high in quality nor attractive in appearance.

J. C.]

APPLE APHIS FUNGUS.

J. N., Charlottetown, P. E. I.:—"I enclose you specimens of apple twigs affected with some disease."

[I have examined the specimen and have also shown it to the Entomologist of the Farm, Mr. Fletcher, and we both agree that it is a form of fungus called "black mold," nearly always seen on apple trees which have been infested with aphids. I think that if you will examine the young twigs or any leaves which yet remain upon your trees you will find them to be more or less covered with small green or black plant lice. This fungus (*fumago*) nearly always accompanies the presence of these insects and may be considered a secondary effect and in itself not nearly so injurious as the insects which bring about its existence.

Probably the best treatment you could give your trees would be to spray them at once with a solution of copper sulphate in water. The proper proportion is one pound to fifteen gallons of water. This, I think, will not only have the effect of destroying the fungus but also of killing the eggs and insects resting upon the twigs. This strength can only be used where the trees are bare of foliage. In Bulletin No. 23 you will find a course of summer treatment for the extermination of these troublesome pests. Kerosene emulsion, which is mentioned in Bulletin 23, will clear your trees if carefully and perseveringly applied. Trees will not make a healthy and vigorous growth while they are infested with these injurious sucking insects.

J. C.]

CREAM RIPENING WITH A STARTER.

SUBSCRIBER:—"I am about starting butter-making for the winter with twelve cows—some strippers, others fresh in milk. Will raise the cream by deep setting; expect to churn twice or at most three times per week, and would like advice as to the latest and best mode of ripening my cream. Should I use what is called a 'starter'? How is it made and used? An early reply in the ADVOCATE will oblige."

[Yes, use a "starter." Take skim milk and heat it to 158° F. by placing a can or part of a can of the skim milk in a tub of boiling water. Keep the milk stirred until it comes to the proper temperature, then remove the can (we use a shotgun can, 8½ inches in diameter and 20 inches deep) from the hot water and allow it to stand for 20 minutes in a warm place. Then put say a pint of buttermilk or sour skim milk of good flavor into this milk after it has cooled down to about 80° or 90°. Do this in the morning, and next morning add of this thickened milk or "starter" 10 per cent. to the cream which is to be ripened. It will be better to skim off the top of the "starter" and throw it away, as some bad bacteria are likely to be found at the top. It is also a good plan to stir the "starter" well and get it smooth and free from lumps before adding to the cream. We practice straining the starter into the cream by means of a buttermilk strainer. This prevents lumpiness in the cream.

The ripening temperature of the cream will depend upon the temperature of the room in which the cream stands, the richness and ripeness of the cream, etc. Add sufficient starter and have the temperature high enough (say 65° to 70°) to produce smooth, glossy cream, slightly acid, in about 20 hours. The alkali test for acidity of cream is a good thing for beginners.

H. H. DEAN,

Professor of Dairying.

Ontario Agricultural College.]

RATION FOR DAIRY COWS—TOWN MILK SUPPLY.

T. W., Wingham, Ont.:—"Once more I must ask for a ration. Last winter you were kind enough to give one that was first-rate. I enclose prices and want something that will suit my cows. I send milk to town, and want as much of it as possible. At present I feed three pounds pea meal

and three pounds bran and as much cornstalks as the cows will eat twice a day. The cows don't do very well. It seems too strong, as it were, and I fear I haven't got it balanced. The cornstalks will soon be done and I will have to fall back on hay. Prices of food: Hay, \$10.00 per ton; straw, \$7.00 per ton; bran, \$10.00 per ton; oats, 20 cents per bushel; peas, 40 cents per bushel; barley, 35 cents per bushel."

[Would recommend a ration as follows for cows weighing 1,000 pounds and in full flow of milk. Feed more or less according to size and appetite of cow and according to her response at the milk pail: Clover hay, twenty pounds; bran, two pounds; oats (ground), two pounds; peas (ground), three pounds. N.R., 1.5; cost, 14 cts. per day, not including cost of grinding grain. A few cornstalks (6 to 8 pounds) and 15 to 20 lbs. of mangolds could be profitably added, as the nutritive ratio is "narrow"; but I would not advise widening it with straw at \$7.00 per ton. At the prices given, one pound of bran, oats and peas would cost about the same. One pound of each of these contains digestible nutrients as follows, and it will be seen that the peas furnish more digestible matter than the others:

Food.	Albds.	Carb.	Fat.	Total.
One pound bran.....	0.128	0.440	0.025	0.593
One pound peas.....	0.188	0.586	0.005	0.779
One pound oats.....	0.090	0.423	0.039	0.552
One pound barley.....	0.096	0.608	0.019	0.723

I have added the composition of barley, and it will be noticed that in total digestible matter it is very close to peas, but the matter is largely carbohydrates, which are not considered so good for milk production, although scientists are not yet agreed on the point. One pound of barley, at the price given, would cost about .7 of a cent and a pound of peas .6 of a cent, and I would take the peas in preference for milk production, even though my ration already contained plenty of albuminoids.

H. H. DEAN.]

APPLES FOR COWS—THE CURRYCOMB.

W. C., Lincoln Co., Ont.:—"1. Are apples good for producing milk? I have heard that feeding them dries a cow up. How much ought I to feed at a ration? 2. Will currying a cow help to increase the milk; if so, will an ordinary horse currycomb serve the purpose?"

[1. Yes, apples are good for cows if fed in moderate quantity. Put the apples through a pulper and mix with cut hay and straw or cornstalks and they take the place of roots. Do not feed them whole, as cows are liable to choke. Sweet apples are best. This year a large portion of the apple crop might be profitably fed to milch cows. Commence with about a peck of apples per day to each cow and increase gradually until the cow is getting all she can profitably use. Do not feed over one-half bushel to three pecks per day per cow along with dry feed. The apple juice will soften the hay, straw, etc., and make it more palatable. Look out for "cider" flavor in the milk and feed carefully so as not to impair the health of the cow. 2. Currying is good for a cow, especially while she is tied up during the winter months. The currycomb takes the place of licking, rubbing, wind, rain, etc., which free the skin of dust and dirt in the summer while on pasture. Anything which tends to make the cow more comfortable will cause an increased flow of milk if she is the right kind of a dairy cow. An ordinary horse currycomb will serve the purpose if the cow is short and fine in the hair and has thin, mellow skin. For longer haired and thicker skinned cows use a cattle currycomb.

H. H. DEAN.

NOTE.—Some men who have let their cows into orchards to eat apples at will have had trouble this season. One dairyman in Middlesex Co. did so after a heavy, soft snow. They gorged themselves and a dozen of them were prostrated, one nearly dying.—EDITOR.]

OIL MEAL AND COTTON-SEED MEAL FOR HOG FEEDING.

R. E. OSBORNE, Durham Co., Ont.:—"Will it pay to feed oil cake to hogs; if so, in what quantities? At what age in pigs will it give the best results? What is the difference between oil cake and new process meal? Should oil cake be ground fine or coarse for best results? What is the relative feeding value of cotton-seed meal and oil cake?"

[Oil meal has been comparatively little used as a ration for hogs, and it is impossible to obtain any satisfactory or conclusive information regarding some of the questions involved. Minnesota Experimental Station reports an experiment in feeding hogs barley meal vs. a mixture of nine-tenths barley meal and one-tenth oil meal, but the results are somewhat contradictory and would indicate that little was gained by the addition of oil meal. In other cases it has constituted as high as one-fifth of the meal ration, but it is questionable whether it will ever prove an economical ration for fattening hogs. For young hogs it is sometimes used as a substitute for skim milk, and in such cases may constitute about one-tenth of the meal ration. A small amount of oil meal has also been found satisfactory for breeding sows when suckling pigs and even before farrowing.

From old process oil meal the oil has been removed by pressure, while in the case of new process oil meal the oil has been removed by means of chemical solvents. Old process oil meal contains more fat than the new, but analyses differ regarding the relative amounts of protein (nitrogenous or