

How to Drench a Horse.

Much unnecessary cruelty has been borne by horses, simply from the ignorant brutality of attendants. The too common method of drenching a horse by way of his nostrils, merits attention on the part of societies for the prevention of cruelty to animals. Not only is such a practice extremely painful to the patient, but there is great danger of a portion of the fluid entering the windpipe instead of the gullet, thereby reaching the lungs as a foreign substance, causing violent coughing, irritation, and finally, inflammation of the lungs.

In most farmers' stables, drenching bits and such improved appliances are seldom at hand, the ordinary method being with a twitch in the nose, and the use of a long-necked bottle. In this, there is always the attendant danger of the bottle being broken by the teeth, allowing portions of the glass to be swallowed, causing much danger to the horse. To do away with risk of breaking the bottle, an ordinary bridle is recommended, with long reins attached to the upper side of the bit rings, passed through rings in the "sleeper" of the loft, directly over where the horse is to stand. Now, stand on something high enough to bring you within easy reach of his mouth when the head is raised. By means of the loose reins, draw his head high enough so that the medicine cannot run from the corners of the mouth. Allow the tongue perfect freedom, and with the right hand pour the liquid slowly into his mouth at the corner, when he will soon be noticed to swallow. Should he remain without swallowing too long, just confine the nostrils for a moment with the hand, and the medicine will go down. His head should be lowered once or twice during the operation if the dose is large.

FARM.

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BY PROF. J. HOYES PANTON, M. A., F. G. S.

ICE.—The action of ice as a disintegrative agent upon rocks, is best seen in countries where a perpetual snow line exists. The snow keeps increasing, until so much accumulates on the mountain tops that it finally moves down into the valley. If the mountain slope is steep, the body of snow and ice will move down with great rapidity and force, sweeping everything before it.

This is an *avalanche*; they are often heard in the Rocky Mountains. The avenues, apparently cut through forests, up the mountain side, indicate to an observer the pathway of an avalanche.

If the slope is very gradual, the body of ice will move slowly, and form a *glacier*, or river of ice. The movement of this may be very slow, not exceeding 3-15 inches per day, but it will move on, grinding and wearing the rocks beneath it, and bordering its sides until it reaches either the sea or a place in the valley where the temperature is sufficient to melt it; there it melts and becomes the source of a river, and scatters at its terminus the boulders, gravel, sand and clay it has formed and gathered in its course through mountain ravines. The Muir Glacier, of Alaska, is three miles wide, many long, and upwards of 700 feet thick. Some of the glaciers of the Alps are twenty miles long, two miles wide, and 300 feet thick. The Humboldt, of Greenland, is 45 miles wide, and 300 feet thick.

Where the glacier reaches the sea it pushes out for a distance, the end breaks off and gives rise to an *iceberg*. Some are 300 feet high, and sometimes only a seventh is above the water. There is always from four to seven times as much below as above the water. It can readily be understood how ice in all these forms will exert a powerful influence in disintegrating the rocks in mountainous districts. Frost, as it occurs in the small cracks of rocks along the banks of a river, and on mountains, denudates by bursting off pieces of rock.

Sometimes the fragments may be very large. In such cracks you usually observe small stones, which serve as wedges, by sinking deeper as the frost causes the opening to expand, until they finally force the portion off. This accounts for much of the debris (*bolus*) seen at the base of mountains or along a river bank.

LIFE.—All animals that burrow form passages into which air and water get and act upon material near, so as to disintegrate it.

Worms are a great help in this work. It has been estimated by able investigators, that they increase the surface soil at the rate of one-fifth of an inch yearly by the deposition of their castings, or, expressed in other words, add sixteen tons of finely divided rock to an acre each year.

The holes they form also afford passages for rain and air; in fact, they are "nature's ploughmen."

Plants, while living, act upon rocks with acids formed in the minute root cells. This has been shown by growing plants for a time upon marble, when its surface becomes quite corroded and eaten into from the solvent action of the liquids in these cells. When dead, the plant in decaying gives rise to *carbonic acid*, itself a great solvent, and as decay of the roots proceeds, leaves passages suitable for the access of air and water. From the facts referred to on *denudation*, the reader will readily see what an enormous change must be constantly going on where these agencies are at work, and that their combined action tends to the preparation of material important in the formation of soil.

Soiling vs. Pasture.

BY F. J. S.

In answer to the gentleman who doubts the practicability of some of my points in "Which Shall It Be?" I would offer the following:—

1. He asks, "Will it not take more feed than I can raise to stall-feed my cows practically the year round?" No; one acre of a seasonable soiling crop will feed more milch cows than five of pasture during the major portion of a Canadian summer; for instance, the one just experienced. Certainly, less land will keep your cows on a system of partial soiling, such as we have indicated, than on a system of pasturing. It is not too much to say that cows can no longer depend upon pasture alone in Ontario, and give the most satisfactory returns. The cheapest and the best butter cannot be made from dried pasture, such as the average conditions of this country supply. In short, the partial soiling system is a necessity in the dairy herd, and the question is not, Can I raise enough feed? but rather the price of labor? If capable help can be had at reasonable figures, the profit and satisfaction of the system is assured, at least, if the writer may judge from his own practical experience in the matter.

2. "What would you feed them during July, August, September and October?"

In Western Ontario I think the majority of farmers might very profitably seed down an acre of so to lucerne or alfalfa. While a little difficult to establish, it is pretty safe and sure when once in the soil, especially if over a rather dry, open subsoil. This is a splendid soiling crop, as it may be cut, on good soils and with proper management, four or five times a season. It should not be pastured nor allowed to mature. This will make a good, early soiling crop, and will be useful to fill gaps between other crops all through the season. During the early summer the cereals and legumes will give good results. Tares and barley and oats, mixed for first sowing, should be put in as early as possible; then such mixtures as peas and oats, peas and spring wheat, etc., may follow these, to be sown, perhaps, two weeks later. These crops in your section will, we think, see you till early corn is ready; after that your supply of green fodder is assured during the rest of the season and, if you choose to build a silo, till you turn your cows on to your fall rye, or crimson clover, in the following spring. Do not feed any class of green fodder while very young, as it will usually result in disappointment. Remember that the legumes are rather better for milk-producing than the cereals.

3. "I would like your ideas as to daily rations the year round."

As to this matter, it is impossible to do more than outline. When turned to grass in the spring, the grass itself, with all the pure water they care to drink, and all the salt they care to eat (*always* before them), will be sufficient. When grass commences to fail, and heat and flies increase, they should receive in the stable as much green fodder as they will eat at noon, and, as the season advances and pasture decreases, all they will eat cleanly, morning and night, and they will also respond with profit to a light feed, say a pound or two, of bran, ground wheat, ground oats and corn, or some such mixture, which may be increased to, say, five or six pounds, as the season advances, if required. The amount of green feed will depend upon the scarcity of the pasture to which they have access at nights. When feeding good corn fodder, less grain will be required, and what is given should be of an albuminoid and of a fat-forming character—bran, oats, peas, oil-cake, *c. g.*

The basis of the cheapest winter rations for milch cows is undoubtedly ensilage. Forty to fifty lbs. ensilage, five to ten lbs. of hay (clover preferred) and straw mixed and cut, and eight or nine lbs. of grain, may be considered a fair daily ration for an average sized cow. Of course, it is only the competent feeder, who has charge of the animals, who can say exactly how much a cow should have. The grain ration may consist of oats, wheat and bran, in equal parts by weight, or corn (the grain) may be substituted for the wheat, if desired. Peas, corn and bran might also be fed in similar proportions. If the "15 acres of (dent) corn" is to be matured, and you desire to feed more corn, you might offset the one-sidedness of the ration by the addition of a pound or two of oil-cake. It is always advantageous to remember that milch cows give best results on rations that incline to an albuminoid character: that is, those having a narrow nutritive ratio. But space forbids further comment, except to say that grain is best ground and fed dry. If you desire to feed some of your mangels to your milch cows, feed a little less silage and give a small feed of the roots at noon, cutting them and sprinkling them with grain, and you may mix the whole with cut feed (hay and straw). Remember that variety is a spice to the food of milch cows, as well as to higher animals.

I think your proposed cropping for '95 is better than for '94, in more ways than one. Less wheat, less hay and pasture, and more oats and corn will, we think, suit your purpose better. You might possibly increase your ensilage corn with advantage, as milch cows are not the only class of stock that will utilize fodder corn to advantage.

What Shall We Do?

BY "PLOWMAN."

At the present time, when the scarcity of money is felt on every hand, not only among farmers, but among men in every line of business, the above is a question that is engaging the serious consideration of every wide-awake man. The solution of such a question requires the most careful and intelligent study, not alone of the present situation, but of the future prospects. It would not be hard to decide what has been the most profitable line of farming during the past year. I believe it is an almost undisputed fact that dairymen feel the present stringency perhaps lighter than any other class of the agricultural community. But having decided this, we are confronted with the question, "How long is this likely to last?" "Oh!" says some enthusiastic dairyman, "There will always be a demand for good butter and cheese; they are staple commodities." Granted, but then wheat is a staple commodity, too, and yet it no longer pays. The time is fresh within the memory of us all when a man could make more money out of a good, roomy brood mare, than you could from half-a-dozen cows, and, yet, contrary to the expectation of not a few of us, this state of affairs has been exactly reversed, and as the past is always a fair index of the future, there is just reason to fear that by the time we get ourselves properly equipped for the carrying on of a rushing business in butter and cheese, these staple commodities may take a drop, and we feel a little "left," while some other branch of agriculture will be in the ascendancy. So it would be very unsafe, as well as unwise, to advocate the general adoption of any one branch of agriculture as a safe and sure remedy for that gaunt feeling from which the farmer's pocketbook is suffering. It becomes us to be very cautious in making a change from any one branch of agriculture to another. I think it safer and better to stick to that one about which we are best informed, and for which we have gotten our farms and our buildings specially equipped, and although times are a little hard just now, let us not be discouraged, for—"The tide will turn if ye bide a wee." But while waiting for the tide to turn, let us examine ourselves. Are we practicing the greatest possible economy in the carrying on of our business? Are we allowing anything to go to waste which could be turned to a useful purpose? Are we making every acre do its share? Is any of our stock sponging its board, living, as it were, on the profit yielded by the others? And are we keeping ourselves informed on the latest and most approved methods, studying carefully the most reliable literature, treating of the subjects in which we are most interested, and keeping a sharp eye on our neighbor, steering clear of the rocks against which he has struck, and ever ready to take advantage of any new plan which he may have found profitable?

We need to exert ourselves in order to keep well abreast of the procession in the onward quick march in which our calling is advancing.

There was a time when "book farming," as it is called, was at a discount, and perhaps justly so, when an axe, a chain and a plow constituted the principal part of a farmer's outfit, and muscular exertion, even though coupled with comparative ignorance, was what made the mare go. But now, with our completely altered circumstances, must come altered management: theory and practice must go hand in hand, in order to attain paying results.

If ever there was a time when good stock should be at a premium it is now. When it takes the skillful feeder all his time to make ends meet with the best of stock, what is going to become of the poor feeder and the scrub?

Now is the time to cull over our herds and flocks, even though we cannot afford to replace them at present, and gradually, as our means will permit, let us fill our stables with the very best. It is surely better to keep three or four cows yielding a profit on the feed consumed than to keep seven or eight, which, if we had to buy our feed, would run us in debt at the end of the year.

By economy, I do not wish to be understood to mean the niggardly saving of every dollar, but rather the judicious expenditure of not only money, but time and labor as well. For instance, it is poor economy to work away with an old worn-out plow-share, in order to save the price of a new one. Nor is it economy to sow poor, dirty seed, because it is cheap, or to sow it on poorly-prepared land, in order to save a little time and labor.

It is poor economy to starve young and growing stock to save the feed. In fact, when we properly understand the term economy in its application to every detail of our business, we have the key to the whole situation—economical cultivation, economical harvesting, economical feeding to economical stock.

Duck culture, among other branches of the poultry industry, is receiving a good deal of interest on some American farms near New York and other large cities. One duck farmer reports that he has hatched about 10,000 ducklings during the season just past. They are marketed at about ten weeks old, when they weigh from six to seven pounds. The mortality of large flocks is very light when properly cared for, seldom reaching two per cent.