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To Improve the Horses.

Despite constant warnings through agricultural papers, and at Farmers' Institute meetings, the practice of using low-grade mares for breeding purposes, and of crossing breeds, continues to be responsible for inferior horses in all parts of Canada. For many years, Mr. George Gray, of Durham County, Ont., has passed judgment on horses at fairs in all parts of the Dominion. A short time ago he returned, after an extended trip through the West and in British Columbia.

Asked his opinion regarding the present status of the horse industry, Mr. Gray replied: "Great damage has been done to the horse industry of Canada by a persistent mixing of breeds. When a man starts rearing colts of a certain breed, he should not change, unless he finds that he has made a wrong selection. He should not, in any case, continually change the breed of stallion made use of."

"At all shows, a glaring weak point is found in the class of brood mares. Too many farmers dispose of their best females, and breed from inferior animals. I have sometimes turned down whole classes. Clydesdale mares, as a rule, have more quality than those of other breeds. Females of the light breeds are deplorably weak. No brood mare in any class should get a prize if she is blemished."

"In all parts of Canada we have as good sires as can be found in any country. Every farmer should make use of these. Canadians are well equipped with means of ascertaining desirable type and proper conformation. Short courses in judging are doing much to improve the class of horses. If every farmer would take advantage of the educational facilities available, and act according to the teachings of those who have made a study of horses, there would soon be a great change for the better in the class of horses at our shows."

LIVE STOCK.

Another Ventilation System.

Editor "The Farmer's Advocate":

In replying to your inquiries about ventilation, I would say that my stable is ventilated by means of two large galvanized-iron ventilators on ridge of barn, the fresh air coming in through 24-inch tiles at top of basement wall. The temperature is regulated by means of a trapdoor in hay chute, and also by the door leading up into the barn, which can be left open or shut; when the doors are all shut, the foul air rises and finds its way through these openings, and passes out through the ventilators on the roof, and if I wish to do so I can open the trapdoor and stable doors, and the fresh air will come down from the ventilators and air the whole stable. If too much cold air is coming in through the tile, they are closed up by wooden plugs.

I do not consider this an ideal system, but it is a long way better than none. I have gone into stables in this neighborhood sometimes on a warm, damp day in winter, when the air was almost sickening, and people will compel their animals to breathe this foul atmosphere for months. If I go into my stable and find that there is a smell of foul air, I immediately know that something is wrong, and proceed to let in more fresh air, and open up my ventilators.

Perth Co., Ont.

OBSERVER.

Stable Walls and Floors.

Editor "The Farmer's Advocate":

We had our barn moved last summer. It was 50 x 32 ft. We put a 12-foot addition to the south side, making it wide enough for three rows of stock, with stone wall, 18 inches, insulated with brick lining, and plastered on the brick, leaving a space between. When building the stone wall, we put in tie wires in rows about three feet apart as they went up; then let the wall dry before laying up the brick. I think it makes the most durable and satisfactory wall that I know of. We put in ten windows as high up in the wall as we could get them, and horizontal; I think that throws the light better than if perpendicular. In putting in the horse mangers, we raised the bottom 18 inches with cement well smoothed off on top; it makes a nice floor for a manger, and we don't require any feed boxes. It is 16 inches at bottom, flaring out both ways to 24 feet at top. Now, every person who looked at that bottom before the manger was put on said it was far too high, but, when finished, it is all right. Floors are all cement. As soon as the cement is dry enough to walk on—in about 12 hours—we mark it into 4-inch squares with a scratch-awl, and then take a bolt or iron rod and hammer it down on the marks, to prevent slipping; that is, behind the horses. In the stalls, we make one mark up the center, and the other marks slanting towards it.

I am very much impressed with the modern, sanitary cow stalls and stanchions adjustable to the length of the cattle. Cow chains have seen

their best days for dairy cattle, as they are not sanitary, allowing the cows to back into the gutter, and then step ahead and pollute the bedding. (Oxford Co., Ont.) WM. AFFLECK.

Plant Food and Animal Nutrition.

When we study the nature of the food of plants, we find that from such simple substances as carbon dioxide, nitric acid, water, and a few salts, a plant is capable of constructing a great variety of elaborate compounds. It accomplishes these surprising transformations by a consumption of energy (sunlight) external to itself. An animal has no such constructive power. The animal frame is built up of food compounds which are simply transformed into similar body compounds; or it may be produced by the splitting up or partial combustion of some of the food constituents in the body. The animal derives no aid from external energy. The temperature of the animal body (about 100 degrees F.) is maintained by heat generated within the body by combustion of materials eaten as food.—[Prof. R. Harcourt.]

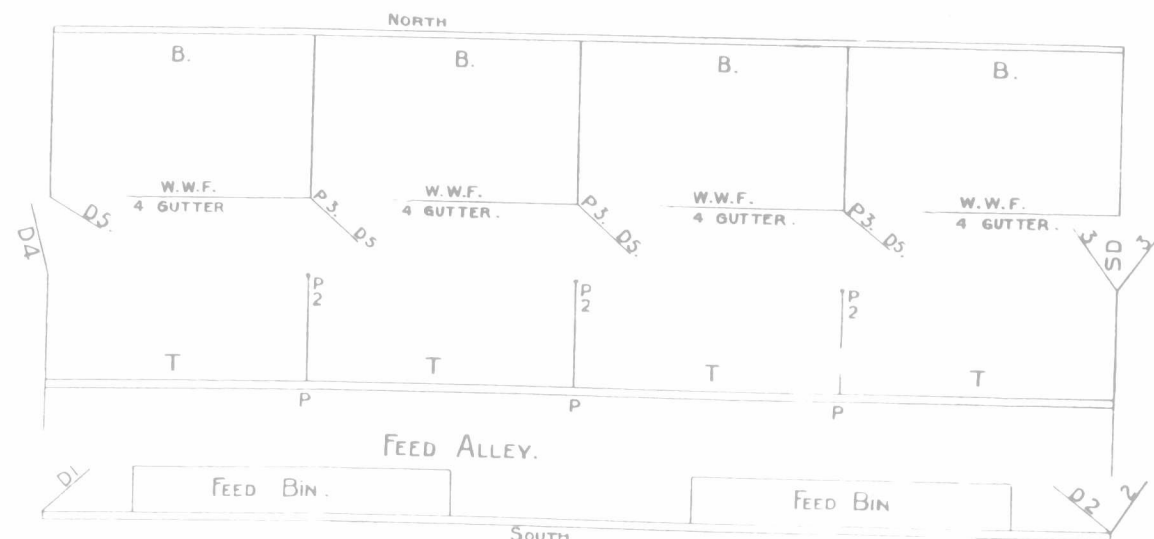
Economizing Dairy By-products.

O. A. C. experiments in 1908 go to illustrate the accepted principle that, to make the most out of dairy by-products, they should be fed in limited quantities, and not swilled down the necks of a few pigs and calves. A value of 18 cents per cwt. for good sweet whey, as a pig feed, is calculated to make some feeders sit up and take notice. In the experiments in question, the whey was fed in rather small quantities, being at the rate of 2½ pounds of whey for each pound of meal consumed. In larger quantities, no doubt, a smaller return would have been obtained. For most economical results, give a limited quantity per head, but feed it regularly and in a sweet, wholesome condition.

Pigpen Plan.

Editor "The Farmer's Advocate":

In your issue of January 14th a subscriber asks for a plan of a pigpen. I am sending you a plan of one I built in the summer of 1908, which is giving entire satisfaction. My pen is 18 by 40 feet, facing the south, as you will see; built with scantling frame 10 feet high, set on cement-concrete foundation. Walls are double-boarded on north side and both ends, with building paper between; south side is single-boarded, and all walls are veneered outside with two inches of cement; inside walls are double-boarded with half-inch hemlock, with building paper between. There is joist eight feet from floor, with loft for bedding. There are four windows in south side, with eight lights of 10 x 12 glass, and one window in west end. There are four ventilators in north and south sides, 2 x 4 inches. D No. 1, entrance to feed alley; D No. 2, entrance to yard; T, trough, v-shaped, built of cement; P 1, post for swing front, set with 4-inch slant over trough, which causes front to swing over trough; P 2, door post for dividing pens; S D 3, slush door for cleaning out with wheelbarrow; D 1, three-foot-high shipping door, with elevated gangway outside; D 5, doors for dividing pens and closing pigs in bed-place when cleaning out; B, bed-places; W.W.F., woven-wire front, with ten-inch board in bottom wire two feet high, which lets sunlight strike direct on beds. Floor of feed alley and bed-place are on a level, floor from trough to gutter has 2½ inches fall. Bed-places are floored with inch lumber, on 2 x 4-inch scantling, set on edge. We have chute over each bed-place for letting down bedding. Feed bins are 18 in. by 12 ft.; feed alley is 4½ feet wide; center or feeding apartment, 6½ feet wide; sleeping or bed-place, 6 feet wide. (Simcoe Co., Ont.) A. E. WRIGHT.



THE FARM.

Shingle-roofing Pointers.

Editor "The Farmer's Advocate":

I notice that sometimes you have queries regarding shingles and roofing, and I thought I would give you my views on the shingle question for what they are worth. Shingles are ordinarily sold by the thousand, and the standard size is 4 inches wide, but nowadays nothing is said about the length or thickness, and these two dimensions are important factors in making a serviceable or useless article. Most farmers who come to the mill to buy will be able to tell the size of the roof to be covered, and take their choice of what is offered mainly from the standpoint of price, and the most intelligent seem to have the haziest of notions as to what constitutes a good shingle for their purpose. The old standard size was 18 inches long, and five butts together to equal 2½ inches, and a few mills are still cutting that size, but the tendency is to drop to 16 inches in length, and six butts to 2 inches, which makes a big difference to the mill man, as he saves timber, labor, and last, but not least, freight, and the farmer still buys by the thousand and pays the same price, and does not know the difference till this roof is on some years, and then he finds it out a-plenty. A shingle never rots on a roof, but is worn out by the action of wind and rain on the exposed surface, and it stands to reason that the thinner it is and the shorter it is, the less timber there will be at the weather line to hold, and there is the weakest place. The difference does not seem so great until you come to compare, and perhaps measure, and then figure out the difference in the amount in the two pieces. Just for the moment, suppose you are measuring the two sizes, what will you find? On the 18-inch shingle, at a point 5 inches from the butt, you find you have just ¾ inch of timber, and on the 16-inch you have 9-32 inch, which gives you a difference of just about 25 per cent. more wood in the heavier article, and a great deal less than 25 per cent. often spells the difference between satisfaction and dissatisfaction.

Certainly, in this instance, it seems to be one of the reasons for the spread of the metallic roof that seems so prominent in your advertising columns. After you have decided on the size of shingle you need, then the next essential is the way it is manufactured. A roughly-cut shingle will never give good service. In the first place, it seems to have the power to draw the water up under the weather line by capillary attraction, and the fuzz in dry times is a harbor for sand and a vantage ground for mosses to start. Then, too, the edging must or ought to be carefully done, so that the butts are a little narrower than the points. If it happens that the butts touch, and the joint above is wide, the joint fills with leaves or other debris and starts a rot; where, if the butts were open the stuff would wash out and be carried off the roof. And for that reason, the shingle that is edged by a wheel-jointer is a better article than one edged by a saw, for the wheel planes smooth, while the saw makes a rough cut.

When you have your shingles ready to put on, decide whether you want to paint them, or not, before they go on. If you want a good job, dip your shingle in any of the advertised shingle stains, and see that it is well done, and let dry before it is laid; but if you don't dip, don't paint and expect satisfaction. There is no paint or other dressing that I know of that will give good results on a roof after it is laid, and I have often remarked that the better the paint was, the worse it was for the roof, and the reason is not far to seek, as the work is very often done in the heat of summer, when the wood is hot and dry, and it drinks up the oil of the paint till all the exposed surface is saturated