

Ventilation for Profit in Beef Cattle.

Discussing the effect of stable ventilation on the profitable feeding of beef cattle, J. H. Gris-dale gave the following at the recent Eastern Ontario Live-stock and Poultry Show:

"To live, every animal must have air, water and food. Without food, life is possible for a good many days. Without water, the vital spark lasts but a short time. When, however, air is the lacking quantity, life is short indeed. Yet, judging by the average barn in the Canadian Provinces, the exclusion of fresh air in appreciable amounts has been the aim of the builder, and is still the aim of the farmer. Fortunately, every crack or chink does its best to help mitigate the disastrous results that would be certain to follow the successful execution of so ambitious an effort. Yet one should not condemn as cruel or entirely mistaken such widespread effort to exclude the good pure air. The average farmer, like every other Canadian citizen, likes to be comfortable, and, to his fancy, warmth and freedom from so-called drafts are two of the chief factors making for that state wrongly characterized by the word comfortable. Life under conditions which make for the best performance of life's duties, be they the writing of a thesis by a scholar, or the production of a pound of meat by a steer, should be called the comfortable life.

"A mistaken idea exists as to conditions under which the pound of beef is most economically, hence most comfortably, produced. Not a few farmers have fed steers in openly-constructed buildings or sheds, and had excellent results. Who has not heard more than one such feeder congratulate himself on the success of his feeding operations, and the next minute regret that his building had not been warmer, feeling and asserting that, such being the case, the results would have been very much better. He was most probably quite mistaken, and one of the chief factors making for his success was the poor building in which the work was carried on. The chinks and cracks meant plenty of air; plenty of air meant good health, and the perfect performance of the digestive and assimilative functions of the steers.

"On the Experimental farm, at Brandon, Man., in 1907-08, a number of steers were fed outside, with no shelter, save protection from northerly and westerly winds by a bit of leafless oak scrub. They were fed on the same rations as a bunch of similar steers inside in a warm stable. Just note the results:

"The lots went on feed December 1st, 1907. The outside lot weighed an average of 1,106 pounds on that date, and 138 days later, April 22nd, 1908, weighed 1,340 pounds each, an average gain of 234 pounds, or nearly 2 pounds a day. The inside lot weighed, December 1st, 1,139 pounds each, and came off feed April 22nd, 1908, in 138 days, weighing 1,390 pounds each, having gained 251 pounds each in the period. The gain was slightly greater, but was more expensive to produce. To make 100 pounds gain in live weight cost \$5.67 in the case of the steers fed outside, but \$6.20 in the case of steers fed inside. It is evident that the unlimited supply of fresh air had something to do with economy of gains. It must certainly have done much to help perfect utilization of the food, since less food was required to produce 100 pounds gain under the apparent handicap of greater loss of heat.

"At Ottawa, in 1902, steers fed in an un-ventilated building made a very low and expensive gain. In 1903, similar steers, on similar feed, in the same building, then thoroughly ventilated, made heavy gains at a very low cost per 100 pounds increase in live weight.

"In 1907, steers fed in an open shed at Ottawa, made gains relatively more economical than similar steers in a fairly well-ventilated barn. In 1908, however, steers in the same shed, while doing well, failed to give as good results as steers fed in a very well-ventilated barn.

"There is no doubt but that one of the most important considerations in feeding steers is to see that an abundance of fresh air is always entering their quarters, even though the temperature should seem to be lower than one might consider comfortable, judging from one's own feeling."

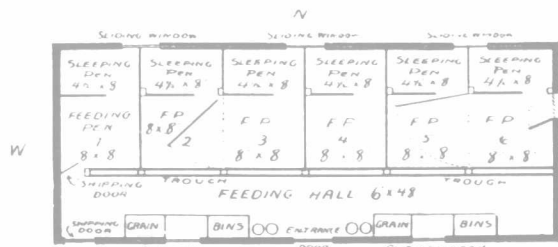
Another Pigpen Plan.

Editor "The Farmer's Advocate":

In response to your invitation for the submission of plans of hogpens, I enclose the ground plan of one I have recently put in use, with considerable satisfaction.

The floor is concrete, 18 x 48, fronting the south, which declines 6 inches at the eastern end from the level at west end, giving general drainage throughout in cleaning and flushing. The floor also declines from the front to a point 4 1/2 feet from rear wall, where it is 8 inches below the level at front. From the rear wall, the floor also declines about 2 inches on the 4 1/2-ft. floor, leaving a drop of 6 inches, forming an angle which serves as a gutter, and is easily cleaned. About

6 feet from the front, starting 2 feet from the west end, runs a cement feeding trough throughout. At intervals of about 8 feet this trough has a cross wall, dividing it into sections. The space between the trough and the front forms the feeding hall. The space between trough and gutter is partitioned off into feeding sections, at the rear of which a partition, with an entrance opening, shuts off the sleeping apartment on the higher, sloping, 4 1/2-ft. floor. The frame of the super-structure is of 2 x 4 scantling. The posts and studs stand upon a cedar sill 2 x 5, and are 7 feet long. The plates thereon support a peaked, shingled roof, underlaid with building paper. The frame is sheathed and overlaid with building paper, which is covered by tongued and grooved siding, up and down. Inside, the studding is sheathed from the floor up about 4 feet. Three sliding windows at the rear side, and two others in the front, light the house, and, along with four ventilators in the roof, control the ventilation. An entrance door near the center of front, a shipping door at the west-end front, and a double door at the east end entering the yard; one swinging door opening inward, and one sliding on the outside. Both these doors work over the projecting



Plan of Hogpen.

Recently constructed by P. W. Gilbert: 18 x 48 feet.

end of gutter. Cross-beams, 2 x 4, extending from plate to plate, gird the roof, and are supported by other beams running lengthwise over the trough and gutter. These again are supported by 2 x 4 posts resting on the wall beside the gutter and upon the cross-walls of the trough, all slightly embedded in cement. These posts sustain the corners of partitions. The partition walls are about 4 feet high. The one shutting off the feed hall stands over the trough. That shutting off the sleeping apartments stands over the wall at the gutter. The sleeping pens are separated from each other by permanent partitions, but the partitions between sections of the feeding space are hinged on the corner posts at the gutter, hooked at the front, bevelled at the bottom to correspond with slope of floor, and hung high enough above it to clear the litter in swinging. When these swinging partitions are swung back over the gutter, they close the openings to sleeping pens, and are held there by a drop-latch. In shipping, the sections intervening between shipping door and the pigs to be shipped can be cleared. In cleaning or flushing, all the sections can be thrown open, leaving a clear floor, while the pigs are all comfortable in their sleeping-rooms. The flooring overhead carries the supply of bedding material. P. W. GILBERT. Prince Edward Co., Ont.

Feeding Experiments with Whey.

Editor "The Farmer's Advocate":

I have your favor of the 19th inst., enclosing copy of letter regarding a press bulletin* issued by the Dairy Branch of the Ontario Department of Agriculture.

Of course, the experiments referred to were conducted in 1908. I am totally unable to say, however, where the 12 1/2 cents per thousand pounds difference in value between separated and ordinary whey was obtained. I had nothing whatever to do with the bulletin, and this is the first intimation that I have had that such a bulletin was being prepared.

So far as I can see, your conclusions are perfectly sound, as based upon this one experiment. I regret, however, that there seems to be a tendency on the part of the public to attach a little too much importance to the result of a single experiment. Personally, it was against my judgment that the results were made public at all until further work had been conducted; but Prof. Dean, at whose request the work was undertaken, was very anxious to have our results, and I gave them to him, with the reservation that it must be remembered that only one experiment had been conducted.

I feel fairly well satisfied regarding the results, so far as the comparison of the two classes of whey is concerned, but I feel that, for some reason or other, we obtained too high a value for whey of both classes in this experiment. Of course, where products of this kind are fed with care, and the animals are charged only with what they consumed, it is possible to obtain a great deal higher value for dairy by-products than any

person could afford to pay for them. It must be remembered, in connection with products of this kind, that the person using them is liable to incur a great deal of loss through waste. For instance, supposing a man contracts to take all the whey from a certain cheese factory. It might be that at certain times he would have more whey than he could handle to advantage, and, under such circumstances, it might prove an expensive food at a comparatively low price, because it is a perishable product, and the surplus cannot be stored for subsequent use. In addition to this, he probably has to draw the whey nearly every day, which is a serious consideration, and adds to the cost of the product. The same objections apply to skim milk or buttermilk, and consequently it is not safe to value them at a very high price in making a calculation. Or, in other words, it would not be safe for any man to buy either whey, skim milk or buttermilk on the basis of values obtained in experiments where these foods were used in the most suitable proportions for giving the best results. Take foods such as grain or mill by-products, they can be bought in bulk and drawn to the farm at some convenient time when it is comparatively little hardship to send for them, and stored in quantity, which puts them upon a very different basis from foods of the character of dairy by-products.

I notice, in an editorial criticism of a letter sent in by a farmer regarding his experiments with pigs, that it was stated that the whey should be valued at at least 10c. per hundred. Personally, I would not think of paying 10c. per hundred for whey unless it could be obtained very conveniently, and obtained in exactly the quantities required. A man who attempted to buy whey in large bulk, at 10c. per hundred, would, I believe, find himself in an undesirable position before he got through with his feeding operations. The daily hauling and the perishable character of the product are the unsatisfactory features to be considered, and it must be remembered, in addition, that, when a large amount of whey, skim milk or buttermilk is used in proportion to the meal, a much lower value is obtained for these by-products than when they are used in smaller proportions. I trust that, in the discussion of this whole subject, these points that I have mentioned may be kept prominently in view.

O. A. C., Guelph.

G. E. DAY.

Professor of Animal Husbandry.

[* Reference explained on editorial page.—Editor.]

THE FARM.

To Double Production and Income on the Average Farm—II.

MORE THOROUGH CULTIVATION.

To get the best results from soil, we must study its needs and supply them, in order to win the possible success in our handling of the same. In order to secure continuously good returns from the farm, we must maintain a full standard of plant food, and so manage as to have it available when needed by the crops we grow. Thorough cultivation is a means to that end. Be our land ever so fertile, yet, if the growing crops cannot get the plant food they require readily, and at the right time, we cannot hope to be fully remunerated for our labors. To secure the earliest seed time, we must so till the land in the preceding season as to have as little labor as possible in making the fine tilth so desirable in the seed-bed. Of all the crops grown, the corn and root crops are the most expensive, and that for several reasons. They require more manure, more labor and greater care throughout the growing season. They are the cleaning crops; yet, how often weeds galore are seen in harvest and fall months, growing luxuriantly, maturing seeds by the million. In the early part of the season the weeds are usually kept in check, and the soil so stirred that seeds in the surface three inches are made to germinate. But later, the rush of the harvest, and other calls, cause the overlooking of the pests, which waited their chance to grow and develop, and later the seeds ripen and scatter over the ground. Thereby, the main object—that of cleaning the land—is defeated by the after-neglect following an excellent start. With the surface soil filled with weed seeds, ready to spring up as soon as conditions are favorable, what hope should we have for the tiny clover and grass plants the following season? The grain is then sown; and so are the grass seeds. They start out to fulfil their end by growing. The grain plants grow strong, and that quickly. The weed seeds also make good use of their opportunities, and get their full share of plant food and moisture. And what of the grasses? They also grow, but should drouth set in, which are the first to suffer? The grain has a strong lead, but the weeds are not far behind, and the tender grasses and clovers, if they outlive the struggle, are lacking in vigor, because of their want of food and moisture. Do we hear some