

doors is certainly an essential point ; but that is not all. There are three things to look for in a cow house : thorough ventilation, abundance of light, and the right temperature. By thorough ventilation, is meant the removal of all foul air and the introduction of fresh air "without draughts," and without lowering too much the temperature. To attain this condition is not an easy task ; but between this perfection and the present condition of a great many of our cow-houses much can be done. Too often, no ventilators are found to provide for the escape of foul air, or those which exist are defective. Ventilators should not consist simply of holes cut in the ceiling ; they should extend from the ceiling through the barn and through the roof, and they should be "straight," otherwise the removal of foul air will not take place properly. They must also be of a size proportionate to the quantity of air which has to escape. If too large, the cold air will descend as well and prevent the ascension of hot air. It should not be forgotten that the foul air is in fact heavier than the surrounding air, owing to the carbonic acid which it contains ; it rises only on account of its higher temperature which causes its expansion. If for some cause its ascension takes place so slowly that it has the time to cool down to the temperature of the air surrounding, it will come down again and accumulate in the stable. Hence the necessity of straight shafts, of the right size, and covered with a cap and Venetian blinds to prevent the entrance of cold air.

It is also necessary to provide for the entrance of fresh air from the outside, to take the place of the foul air escaping, but air-holes should be disposed in such a way as not to create a direct draught on the cattle. It is greatly to be hoped that the system of introducing fresh air by an underground flue—the same as in ripening chambers of cheese factories—which has been adopted and works satisfactorily in a few Ontario farms, will come into use in our country. It is obvious that air introduced in this way will lose much of its

chill, so that a greater quantity of air can be introduced without lowering the temperature of the cowhouse.

According to the best authorities, the temperature of the stable should never be below 40° F., and never rise above 60°. For dairy cows, 55° F. constitutes the best temperature, while for young cattle 55° is sufficient.

Too often also, the necessity of an abundant supply of sunlight in the cowhouse is neglected. Sunlight is still the best disinfectant known, and its free admission by numerous windows will be the best preventive against tuberculosis and other contagious diseases.

"Water."—How should the cows be watered ? The following experiment made at the Indiana station seems to be conclusive in this respect : a constant water-supply in the stable caused an increase of 1 lb. of milk per cow daily, or 225 lbs. per year, while the percentage of fat in the milk was the same as before. As to the temperature of the water, Wolf found, at the same station, that when the temperature was reduced from 79° F. to 38° F. the cows fell off 8 per cent in milk yield. We can see that the expense of furnishing our cattle with a constant supply of water in their quarters will be amply repaid in a very short time.

It should not be forgotten too, that even should the cow-house be perfect, exercise is necessary to health and to wholesome milk. The system of covered yards, to exercise the cows in during inclement weather, so strongly advocated by Professor Roberts, has given excellent results wherever it has been adopted. To let the cows out in a cold winter day, under pretence that they need exercise, is certainly not a practice to be followed, but it cannot be denied that exercise under good conditions of temperature cannot fail to have a good effect on their health.

Let us also remember that regularity and kindness, both in feeding and in milking, are of very great importance as regards not only the quantity but also the quality of the milk.

We will endeavor by all means to make our cattle as comfortable as possible during their long winter seclusion : it will pay.

C. M.