would inherit the same hirsute tendency ; but that does not prevent recognition of the necessity for moderation in hair, as in other things. If we are to live for the present, then we unhesitatingly say breed the class of horse that has been making so much money of late. So long as there is weight and quality of bone, it is immaterial whether there is plenty of hair or little of it, for the gelding market ; but what is of importance is that a valuable field is being entirely neglected simply because the ideals of the English and American breeders represent a total antithesis in the matter of hair.

We can understand that for show purposes the idea of exhibiting horses with only a little feather on the legs would be repugnant to those who have so long been accustomed to exercise all their art, with so much success, in keeping the hair on limbs and body. But, as every breeder admits, prize stock, although a highly-important section, are really a very small and insignificant minority so far as the number of Shire horses bred are concerned. It appears to us to be a business provision for the future to look more to the horse and less to the quantity of hair he carries. The weight can be obtained in the Shire with more success than in any other type of draft horse, and, in the end, that is what we come back to. What farmer cares how much hair he has on the legs of his mares if they work well? What city contractor pays more for his geldings because they have plenty of hair? The actual commercial trade is not favorable to as much hair as is carried by show animals, and so long as we encourage the exercise of every art not only to grow hair, but to increase the already large quantity, so long shall we shut out our very best horses from the possibility of going abroad and establishing a lucrative trade in other countries.

English breeders seem to be becoming seized of the fact that the rapid extension of demand for Shires on this continent depends upon how well they conform the type of the breed to the ideal that holds on this side of the water. The American horse-user has shown a strong preference for clean-legged horses, and in this country hair is in less demand than substance and real bone quality. It would probably pay English Shire breeders to trim their sails accordingly. They might take a hint from the Clydesdale breeders' experience in breeding for trade on this side, but should be careful never to sacrifice size to secure the type they believe to be desirable.

Pink Eyes—Hard Feet.

1. Stallion has pink eye. How long will this remain in the system and affect mares bred to him?

2. What will soften hard and brittle feet?

W. W. B.

Ans.—1. Stallions suffering from that form of influenza known as pink eye are supposed to be liable to infect mares bred to them for several weeks after an apparent recovery. Some claim that it is unsafe to breed such stallions at all during the season in which they have suffered. It is not possible to say definitely how soon after an attack it would be safe to breed, as there is so much difference in the individuality and constitution of both stallions and mares. Say, from six weeks to three months.

2. The best way is to apply a blister to the coronets every four weeks. The application of poultices also gives good results, or allowing the horse a few months' run on damp pasture. V.

LIVE STOCK.

Why are Stone Stables Damp?

"Stone" stables are more damp than wooden ones. Why? Is it because frost forms on the inside of the wall, or is this a result of the excessive dampness? If the latter, why the dampness?

Let us consider two basement stables of same size and internal construction, standing side by side, therefore subject to the same weather conditions, and both containing the same number of horses, cattle and other stock, the one having a wooden wall, the other a stone one. Let us suppose, further, that the stables are kept at the same temperature. Then, from a scientific standpoint, should the air of one be more damp than that of the other?

Two years ago, D. E. McRae, one of our students working upon this subject, performed the following experiment : He took a number of porcelain basins, 5 inches wide by 4½ inches deep. Into each he put water three-quarters of an inch deep. Two of them he left uncovered. Into two others he fitted closely a cover of pine board ½ inch thick, the fibre of the wood thus being horizontal. The crack between the edge of the cover and the side of the basin was sealed with paraffin wax, so that any moisture that escaped must pass through the wood, crosswise of the fibre. A third pair were fitted with covers cut from the end of a pine block, so that the fibre ran perpendicular; hence, any water escaping from these must pass through the wood lengthwise the fibre. Other pairs were set up with cracks in the covers, and still others with auger holes. When they were all prepared, they were set side by side in a room free from drafts. At the end of twenty days, all water in the open basins had evaporated ; 55 per cent. had escaped through the covers with fibre perpendicular, and 15 per cent. through those with fibre horizontal ; i. e., 55 per cent. had escaped lengthwise the fibre, and 15 per cent. crosswise. One saw-cut across the cover, or one-half inch auger hole added from one to two per cent. to those amounts. The result was a surprise to us. Calculating 15 per cent. of the water and the volume of the empty part of the basin, we find that the water that passed crosswise through the fibre of the pine cover was sufficient to saturate the air in the basin 140 times per day ! Of course, conditions were extreme—the air in the basins was saturated with vapor, and that outside very far from saturation. And the cover was a thin one.

This experiment throws a flood of light on the stable problem. The wooden stable allows water vapor to pass out through its entire wall surface in the same way as the pine cover of those basins did, but much more slowly, because the walls are thicker. The action is accelerated by cracks, knot-holes, etc., the more so during windy weather. The liquids in the stables evaporate, striving to saturate the air, but through the pores of the wood, the cracks and the crevices, the vapor is dissipated so rapidly as to keep the air far from saturation.

A stone wall, on the contrary, is almost non-porous, and the only escape of moisture is through the cracks and holes. Consequently, it would seem natural, in the light of this experiment, to expect a wide difference between humidities in wooden and stone stables.

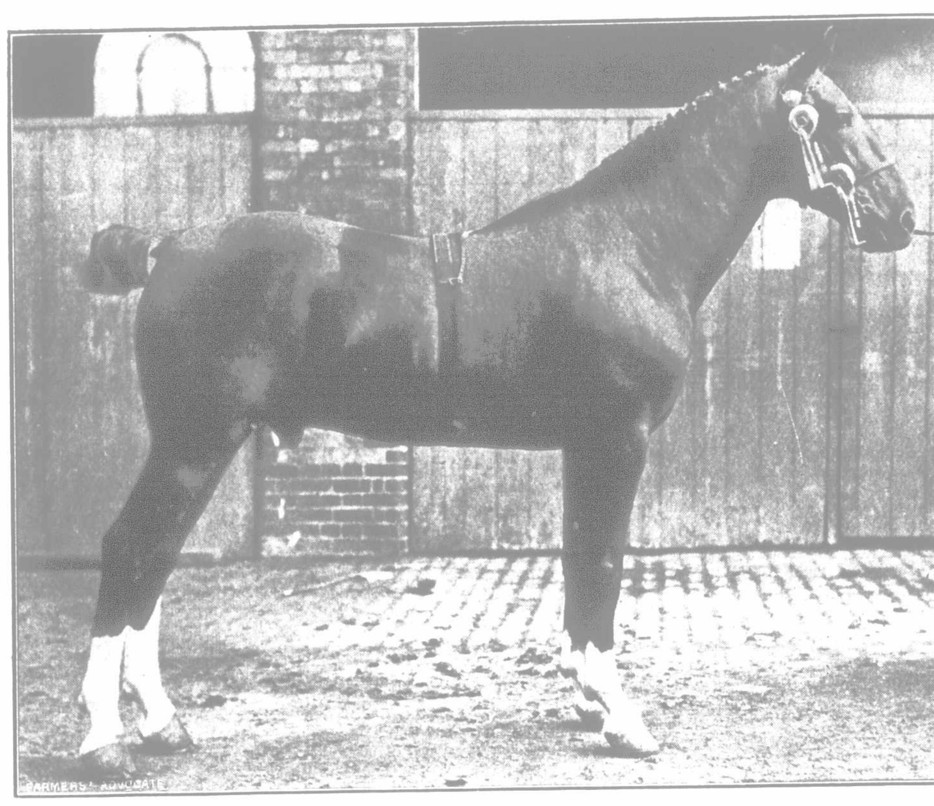
Even so, why should frost collect so thick on the inside of the stone wall, while scarcely any collects on the wooden one? Stone is a better conductor of heat than wood. I find, by consulting authorities on this point, that stone conducts heat about fifty times as fast as wood, the thickness being the same in both cases ; loose, dry sand, ten times as fast as wood. Now, the conductivity of a wall composed largely of stone, with some mortar, consisting of sand run together with lime, must lie somewhere between these limits, and closer to the upper than to the lower. Consequently, a stone wall must conduct heat at least thirty times as rapidly as a wooden wall of the same thickness. Usually, however, wooden walls are not solid, but consist of two thin walls of board, with air space between, this latter being frequently filled with packing of some kind. This structure is fully as good a non-conductor of heat as a solid wall, probably better. But the stone walls being much thicker than the wooden ones, the above ratio must be reduced, so that stone walls as we find them, making allowance for all factors, conduct heat from ten to fifteen times as fast as wooden ones. Consequently, we find the inner surface of a stone wall much colder than that of a wooden one. And it is this difference in temperature, coupled with the difference in moisture content of the air, that causes the one wall to coat with frost or water, and the other to remain dry. Warm air will hold more water than cold air ; we are all familiar with this. Nearly all our rains come from the south-east, or south-west. Why? The warm air travelling from the southward towards the north becomes cooler and cooler, till at last some of the water is precipitated. The temperature at which this occurs is called the "dew-point." If the dew-point is above freezing, the precipitation will be in the form of rain; if below freezing, snow or hail. The more moisture in the air, the sooner the dew-point is reached and precipitation begins. Now, the very same thing goes on in the stable. The cold stone wall cools the air below the dew-point, and moisture is deposited on the wall. If the dew-point is below freezing, the wall has frost on it, but, if above freezing, water. The inner surface of the wooden wall, being much warmer than that of stone, and there being less water-vapor present, it cannot cool the air down to the dew-point, and so no moisture is deposited on the wooden surface.

Thus we see that the wooden stable is intrinsically drier than a stone one, because the wood allows the escape of moisture through its pores and cracks. We see, also, that the frost or water on a stone wall results from the high heat conductivity of the stone and the high water content of the air.

Another phase of the power of wood to conduct vapor through its walls and cracks should be noted. If these walls will transmit water vapor, they will likewise transmit other gases that are produced in the stable.

Now, if wooden walls emit water vapor and other gases, while the stone ones do not, then it follows that, to make the stone stables as wholesome for stock as the wooden ones, artificial ventilation must be introduced. This will remove much of the moisture, at the same time keeping the stable cooler and overcoming in some degree the deposit of frost or water. Any device that would render the stone wall a poorer conductor of heat would remedy partially or wholly the collection of frost or water on the wall. And the wooden stables themselves, although they are naturally the better ventilated, may be much improved in this particular by some system of admitting pure and emitting foul air.

WM. H. DAY.



King's Proctor (11102).

Hackney stallion; chestnut; foaled 1908. Grand champion, London Hackney Show, 1911.

Cow Ties and Mangers.

Editor "The Farmer's Advocate":

The question of "Best Kind of Manger," raised by a correspondent from Haldimand County, is one of considerable importance. It must be admitted, however, that in this, as in many other matters, no final pronouncement can be made at the present moment, nor is it likely that farmers will ever agree as to which is really the best kind of manger for cattle. Probably the brief consideration of a few points that might be considered important in connection with the selection of the type of manger to be used, would be apropos at this time.

In deciding upon the type of manger to use, and in the construction of that manger, certain features must be kept prominently to the fore.

1. Convenience of feeding is, or should be, an absolute requirement in any manger, since lack of convenience means more time required, hence greater cost in caring for cattle.

2. Comfort for cattle. Mangers which do not contribute towards, ar at least mangers which interfere with the comfort of animals, are to be avoided, since lack of comfort in any feature of the stable means less satisfactory returns, hence loss.

3. The hygienic qualities of the manger must be considered, since mangers which may possibly interfere with the best health of animals are just as likely, or more likely, even, to cause loss in the ultimate returns from the herd as either of the preceding features mentioned.

The types of manger most commonly seen are :

(a) The good old wooden-framed manger which enclosed the head of an animal in a species of frame or basket work, serving as a reservoir for