

THE HORSE.

Whips were intended for driving oxen, not horses.

It has been estimated that good grooming is equal to two quarts of oats.

A stiff brush is best for grooming. The curry-comb is more useful as an auxiliary.

Keep the feed boxes and mangers clean. Stale feed soon becomes offensive in hot weather.

A good horseman will not take a team to the field with the sweat of yesterday still incrust in the hair.

Horses, like men, become impatient when they are not fed at the accustomed hour. Punctuality is important.

A horse can often be discouraged from gnawing his manger and stall by keeping a piece of rock salt always before him.

Lift the collars occasionally to cool the shoulders, and wipe off the sweat and dirt with a rag carried for the purpose or with a wisp of grass.

Never give a horse, when heated, large quantities of grain or water. Allow the animal a few mouthfuls of water and permit him to stand awhile before giving the grain.

A horse's stomach is small, and not designed for the accommodation of large quantities of roughage. A considerable part of the hay ration should be given in the evening when the animal is idle.

A horse suffering from heat or sun stroke may show one or more of the following symptoms: He may suddenly stop sweating and breathe short and quickly, his ears may droop, and he may stand with his legs braced sideways.

The Horse Stable and Its Equipment.

BY DR. G. H. CONN.

It is not the intention of the author to attempt to state just how a horse barn should be built, but it is our aim to point out those desirable features of a practical utility stable. It is necessary if one would obtain the greatest service from his work horses to provide a shelter for them. The kind of a barn that is necessary is largely determined by the climatic conditions, and may be influenced some by the amount of work the animal has to perform. A stable that would be ideal for one owner might not do for another man at all, due to the local conditions that are present. However, there are certain features that should be found in most barns, and in this discussion we shall consider them as to their desirability as a shelter for the animal, and the preservation of his health, permanence and convenience. Each man in planning a stable can do so, approximating this as near as local conditions will indicate.

LOCATION OF THE STABLE.—To our mind the location of the stable is one of the most important features concerning the erection of a stable. It is important for several reasons: It may save labor in caring for the animals, lessen the dangers of acquiring diseases, add to the appearance of the homestead, and make the best use of the natural elements, the sunlight and the air.

The stable should always be located on ground that has as much natural drainage as possible. This will place the barn as far above the water line as possible. A stable located in a low, wet spot will be damp and unhealthy. It should be located so as to provide pure air and an abundance of sunlight. The surrounding buildings and the prevailing winds should always be taken into consideration. If possible it is best to place the stable with the house between the stable and the prevailing winds, or odors from the barn may become very obnoxious at various times. In most sections the cold winds usually come from the north and west, and for this reason in the large farm barn the horses should, if possible, be stabled on the south or the east side of the building. If they are placed on the south side they will receive a greater amount of sunlight than from any other location. This not only assists in keeping the animals healthy but adds to the cheerfulness of the surroundings.

A hard clay, limestone or gravelly soil is much better for the location of a stable than black, mucky, peaty soil. Where the latter is used it is usually necessary to sub-drain the soil thoroughly. In these soils it requires much more care in the building of the foundation and the floor.

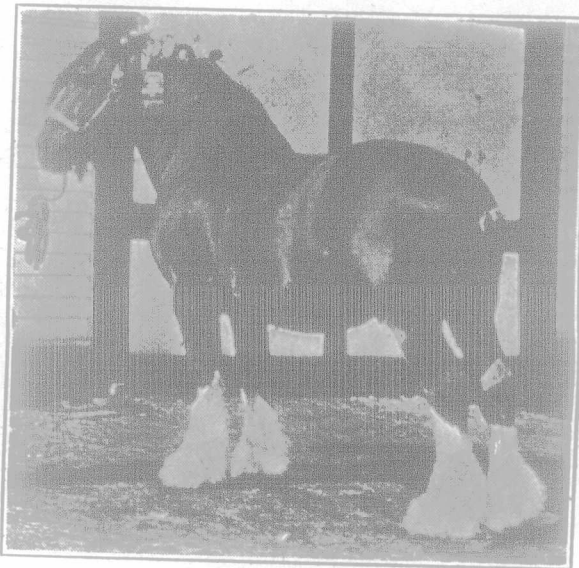
In some sections of the country bank-barns are very common. They are objectionable for this reason, that they can very rarely be ventilated properly, are usually dark, and quite often cold and damp. It is a fact that in many large stables of this kind many horses suffer from periodic ophthalmia or moon-blindness, and that they usually go blind.

IMPORTANCE OF VENTILATION.—Ventilation of the stable is the act of keeping the air of the building approximately pure, to draw out the excessive moisture, to retain enough heat in the stable to keep the animals comfortable while it is closed and filled with stock. It requires a certain kind of structure in many climates to carry out this ventilation properly, but these facts can be supplied in detail by ventilating experts.

In a stable not ventilated a 1,400-pound horse requires 1,500 cubic feet of air space; in the stable that is properly ventilated this same horse can be maintained very satisfactorily in 730 cubic feet of air space. This is a great saving in space, more than enough to provide for the ventilation if it had no other good features. It removes the moisture from the stable that is given off by the animals during respiration; this is a very valuable feature, as we know that animals do not often suffer from the cold in a stable in which the air is dry. According to the late Prof. F. H. King, the stable at no time should contain more than three and three-tenths per cent. of air that has been once breathed, and that to keep the breathed air down to this per cent. it must enter and leave the stable at the rate of 71.6 cubic feet per minute. This is based upon a horse weighing 1,400 pounds, and is the statement of an expert in the King Ventilating Company.

It is impractical, if not impossible, to think of securing proper ventilation for the barn, without installing the proper devices for securing the desired results. The doors and windows through which the ventilation must take place in the barn that has no ventilation system, must be permanent, and this makes it impossible to secure the desired results due to the shifting of the direction of the wind. If it were possible to always have the air currents coming from the same direction, and with about the same velocity, it might then be possible to ventilate the stable fairly successfully by using the windows and doors.

In using the doors and windows for ventilating purposes, drafts are very likely to result, and during rain and snow storms, they permit much moisture gaining access to the stable. From our experience and that of many men of good judgment, we can hardly understand why any one should build a stable for animals without installing a thorough and efficient ventilating system. They practically all are built upon the



Bonnie Woodside.

An aged Clydesdale stallion that has won many times on the Western Circuit for Massie Bros.

same principle, and there is very little preference between them as far as we know. However, the ones made from galvanized iron or metal would, no doubt, be the cheapest and most satisfactory in the long run. In building a stable it would be advisable to submit plans to the engineers of some large ventilating company, or an authority on ventilation who could advise upon the successful ventilation of the proposed structure.

MATERIALS USED.—In times past most stables were built entirely of wood. The growing scarcity of wood and its correspondingly high price makes it necessary that we use other building materials, such as brick and concrete. These two substances make very good stable walls when properly constructed, but when care is not exercised they are very unsatisfactory, due to the dampness. Concrete is rapidly growing in favor as a building material, but where animal life is to be housed in the structure, the greatest of care must be used to secure the best results. Before building a stable of either concrete or blocks, it would be advisable to interview several owners of this class of stable and secure the results of their experience.

THE FLOOR.—Without a doubt the concrete floor is the most popular of any floor that has ever been used in the stable. There are some objections to it however, but most of them can be overcome fairly satisfactorily. It may be damp if the stable is located where the water level is high, but this can be overcome by subdrainage, the use of a layer of cinders or crushed stone under the floor to facilitate drainage, and by a layer of flat tile below the floor or within the floor; also by special construction of the floor. The concrete floor is cold, but this can be taken care of by a supply of bedding in the stall. It is also smooth and horses must be handled very carefully to prevent injury from slipping; this can be prevented largely by roughing the surface of the floor.

It also has many advantages; it is permanent, easily cleaned, sanitary, does not leave any space beneath for the circulation of cold air, and for harboring rats and mice; does not have any cracks for the accumulation of dirt, disease germs and filth; will not absorb the liquid manure and the urine, thus preventing bad odors. The floor should slope 2 inches in 10 feet to drain off the urine properly.

THE WINDOWS.—In our judgment most stable windows are placed much too low; they should not be for the animal to use for looking out, but for the admission of sunlight. When they are too low and are left open the air produces a draft that hits the animal squarely; when placed higher, it will pass above them. Windows should be placed 8 feet from the floor, should be hinged at the bottom, and should open inward. During cold, windy days those windows on the leeward side may be kept open, and on calm days those on both sides. There should be one window for each horse, and should provide a space of at least 4 square feet. It should contain glasses of small dimensions rather than one large glass, as they are not so easily broken; usually 2 or 4 makes the best size for small windows. The glass can be protected by slats of wood or metal, or by wire screen.

THE STALLS.—The ideal stalls for the most comfort of the horse is the box stall. Where space and the numbers of horses will permit and the expense is not too great, this type of stall is to be recommended. It should be about 10 by 12 feet for the work horse, and it is advisable where colts are being raised to have one stall about 12 feet square as a foaling stall.

The tie stalls should be roomy to provide comfort for the horse; they should be 11 feet from wall to heel posts, and 5 feet 6 inches from centre to centre. For cribs it might be well to make the stall 6 feet wide. It requires about 18 feet of space for one row of stalls, and about 30 feet for two rows. The stalls should face toward the walls.

Since lumber of good quality is very high in price it is advisable to use the steel fixtures that several manufacturers are putting upon the market; they have these advantages: They are sanitary, have a nice appearance, durable, strong, require little attention when properly installed, and can be easily kept clean. No doubt when the length of time they will last is considered, they are cheaper than wood by quite a large percentage, comparing the original cost of both.

THE MANGER.—With the large amounts of saliva that are drizzled into the manger or feed box, for sanitary reasons the iron manger is the only one that is to be recommended. It should be wide and shallow and not short and deep; this prevents a great waste of grain. It should be easily cleaned. A manger should have perfectly smooth surfaces and have rounding corners. A rim projecting inward from the top usually prevents the wasting of feed, but it should be so constructed that dirt and spoiled feed will not accumulate. It should be placed about 3½ feet from the floor.

THE HAY RACKS.—The hay racks ought to be on a level with the manger; they should be fairly deep and wide and long. Hay racks that are placed above the horse's head may be the means of the animal getting dirt or chaff in the eyes, and besides much hay is wasted by the animals pulling it down to be eaten; some of the hay will fall to the floor and it will be soiled and trampled. With present high prices it would require only a small quantity of feed being wasted to pay for the best of hay racks. A loose hay rack is to be discouraged, due to the waste. Hay racks should be so constructed so they can be thoroughly cleaned and disinfected, and so they will not permit of a large collection of dirt and trash.

STABLE DOORS.—The stable doors should be at least 8 feet high and 4 feet wide. With a narrow, low door the nervous horse is not only liable to injure himself by striking the side of the door, but he is also liable to injure the attendant by crowding when going through the door. Many a good horse has been injured by a door that was too narrow. We are of the opinion that the two-section door is the one that is in the most common use. By making the door in two sections the lower part can be closed while the upper part is left open. They should be hung on strong T hinges. If made in two sections the lower section should be of sufficient height that an animal would not attempt to jump over it.

If the door is made in one section only it can best be placed upon a track with rollers. Such a door does not work so well upon hinges as it does by rolling on a track.

LATCHES, CATCHES AND FASTENERS.—These should all be considered as to practicability, adaptability, durability, construction, ease of operating and location.

They should all be so placed that there will be no sharp projections upon which the horse may become injured. Such injuries may be of very little concern at times, but at other times they may produce a very serious injury that may endanger the animal's life, or greatly affect his market value.

STABLE DRAINAGE.—Under no circumstances is it advisable to drain a stall from the centre; by that we mean putting the drain in the centre of the stall; this is the source of ammonia vapors and obnoxious odors from the urine, which are detrimental to the best health of the animal, and, to say the least, is very unsatisfactory. By sloping the stall 2 inches in every 10 feet, the urine can be drained to the rear of the stall, where a shallow gutter can be made; if the stable is less than 20 feet this gutter can slope to either end of the stable and empty into a drain. If the stable is more than 20 feet, and up to 40 feet, it will be best to make the slope both ways from the centre of the stable, and have a drain at both ends of the stable. If the barn is long and it is desired to have the drain in the stable, it will be best to have the slope from each end of the stable, toward the centre. If the drain is placed in the stable, a suitable trap should be placed to prevent the return of any sewer gas or obnoxious odors. There is also difficulty in getting at the drains to unstop them when they are placed in the stable. They frequently become clogged