

## Nature's Diary.

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In cases where the wood-lot consists of nearly even-aged stands of second-growth trees, undesirable species may predominate and may be crowding out the better species, or the whole stand may be over-stocked. In these cases improvement cuttings should be made. Improvement cuttings are of two kinds—cleanings and thinnings. Cleanings are cuttings for the purpose of removing such of the trees of less valuable species as threaten to over-top or crowd out the more desirable trees, as where Ironwoods are interfering with the proper growth of White Ash, or Sugar Maple. Both to decrease the cost and to avoid overcutting, only those inferior trees which are actually interfering with better ones should be removed. In cleaning, the material cut out is usually too small to pay for the cost of cutting, but the expense is justified by the beneficial effect which this operation has on the remaining stand.

Thinnings are cuttings made in even-aged stands from fifteen to twenty years old with the object of regulating the stand which is to form the final crop, just on the same principle as the gardener weeds out his crops so as to secure the best development of a portion of the individuals rather than the poor development of the whole. By crowding in the beginning trees are started in the right way to produce good timber, but if crowding is allowed to continue after the lower branches die it will cause stagnation in growth both in diameter and height. It might be thought that because under natural conditions no thinning occurs and yet timber of the highest value is produced that there should be no reason for thinning in the wood-lot. But it must be remembered that in the wood-lots now under consideration we are dealing with pure stands of second growth and that under natural conditions no such stands occur as they only arise after clear-cutting.

The presence of dead or dying trees in the stand, a very dense, interlocked crown cover, stems very slender in proportion to their height, or an apparent stagnation in the height-growth, indicates that thinning is needed. Unless the condition of the stand makes earlier thinning desirable, the best practice is to defer the first thinning until the product is merchantable and of sufficient size to pay for the operation. Thinnings should be repeated as often thereafter as the material has accumulated in sufficient quantity again to pay for the cost. Cordwood and post material will be obtained from the first thinnings and larger sized material from the later ones. In the great majority of farm wood-lots the thinnings may be carried out by the owner in the winter at no other cost than his own labor, and it should always be borne in mind that whenever any material for poles or other farm purposes is required it should be selected in such a way as to improve the stand and not taken at haphazard.

In thinning, as a rule, trees of the less prospective value should be removed. In any young stand, the trees may be assigned to several classes according to the position and condition of their crowns. These classes are termed dominant, co-dominant, intermediate, suppressed and dead. Dominant trees are the tallest ones, whose crowns receive almost complete sunlight; co-dominant trees are those of slightly less height with relatively narrow tops which are not fully exposed to sunlight; intermediate trees are considerably smaller than those of the first two classes, but still healthy because their tops continue to occupy open space in the canopy; while suppressed trees are those which are hopelessly behind in height growth and which will either be killed by the shade of their taller neighbors or continue to exist only as stunted individuals. The trees to be removed should accordingly be the dead ones and those of the least value, and the species of slowest growth among the suppressed and intermediate classes, and all dead and insect-infected and fungus infected individuals in all classes. In thinning it must be remembered that the health and vigor of the forest trees depend very largely upon the condition of the soil. In the case of field crops this is obtained by cultivation, in wood-lots it must be secured by keeping the ground shaded, and in making thinnings it is desirable to retain any of the intermediate or suppressed trees which are necessary for the shading of the ground. The extent to which the crown cover may be opened up in thinning depends largely upon the rate of growth of the trees and their demand for light. In general, openings should not be so large that they will not close again within from three to five years by the growth of the remaining trees. Thus in stands of species of rapid growth the crown-cover may be opened up to a greater extent than in stands of species of slower growth.

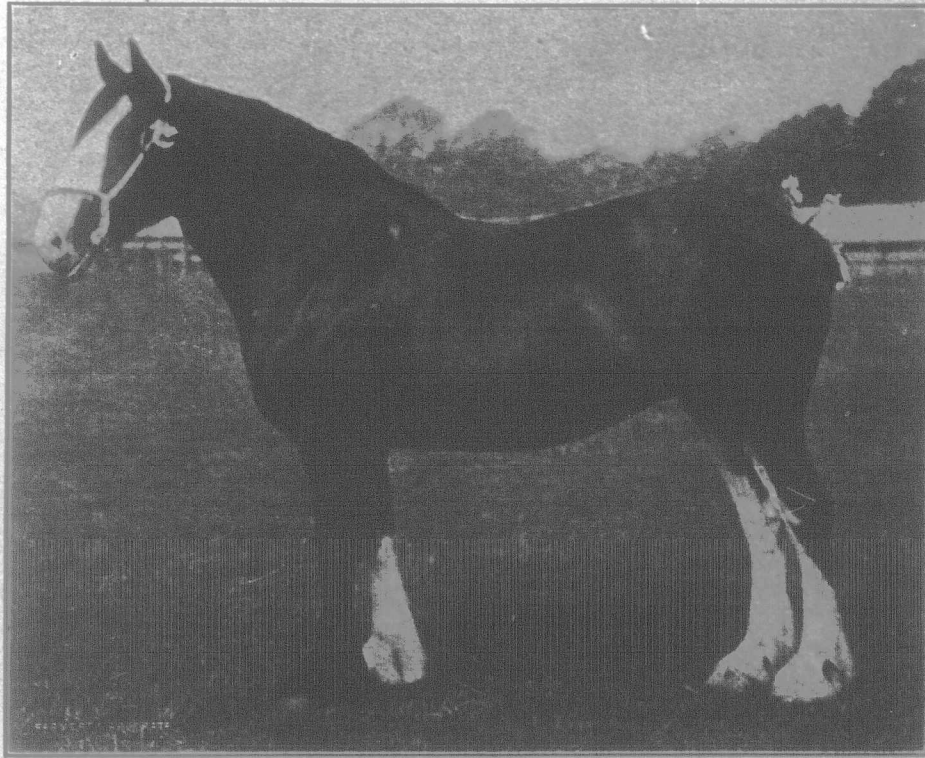
In many wood-lots, vines, such as Grape, Virginia Creeper and Bittersweet occur, twining about the trunks of the trees and throughout their tops. These vines are always injurious to the trees, sometimes seriously so. Their heavy foliage and small branches shade out and kill the leaves of the trees, and by their sheer weight alone they often bend over the tops of the trees which are thus sometimes killed. The vines should accordingly be eliminated by severing their main stems near the root. It is best to carry out this operation when the vines are young and have not yet damaged the trees. but if lack of time prevents a thorough cleaning out of vines, at least the larger ones, which it is apparent are doing harm, should be cut.

To be continued.

## THE HORSE.

## Winter Training of the Colt.

During the winter many colts, both last spring's and older, will be given some training. It is always well in training the young horses, as with the young in the human race, to start early. The colt, weaned this fall and given a box stall during the fall and early winter months, should now learn to stand tied and be given his first lessons in stable manners. We would not take him out of the box stall for good, but each day he should stand in a narrow stall, tied with a good, stout headstall and shank, and the attendant should take pains to go around him, teach him to stand over when spoken to, handle his feet, head, ears, etc., and accustom him to the currycomb and brush. A short time each day spent in this method of training will prepare the colt for handling outside on the halter. When he has learned to stand tied without pulling, he should be taken outside and taught to lead. It is important, in his first lesson, that he is not permitted to get away, because getting away would soon become a habit with him, and it would be with difficulty that the habit would be broken. If there is any doubt in the mind of the attendant about his ability to handle the colt, he should give the animal a first lesson when he has some help on the halter shank. Always be quiet, careful, speak in low tones, and use kindness rather than force. After the colt has been taught to lead there may be little to do in his education for the first winter, only keep him leading once in a while and keep him tied for a short time daily, that he become thoroughly accustomed to each. Older colts should be bridled and harnessed in the stall, where they become accustomed to bridle and harness before being taught to drive and draw, but the handling of the older colt is a subject by itself which we shall treat in future articles.



Harviestoun Baroness.

First aged mare and grand champion Clydesdale female at the Chicago International, 1916.

## The Best Method to Exercise a Brood Mare.

The winter season brings its difficulties in the horse barn. It is no easy matter to so regulate feeding and exercise with the different horse stock as to keep all the stock in the healthiest, most vigorous condition, with the least feed and work. The in-foal brood mare probably gives more trouble on the average farm than does any of the other horses. Colts may be turned out together and allowed to remain out, on fine days, for several hours at a time, and, as a general thing, their vitality is such that they take plenty of exercise. It is rather dangerous to turn the brood mare out with them at times, because she may be cross and may kick some of them, or they may be playful and may kick her.

There are three places in which to exercise the brood mare, or at least three methods used. Some depend upon the box stall; others upon the open yard; and still others upon light work in the team. We agree that every in-foal, brood mare should, if possible, have a box stall. Narrow stalls, often insufficiently supplied with bedding, which may be the case on many farms this year, owing to the short straw crop, are none too comfortable and very often the mare paws the straw back behind and is forced to get up and down on a slippery floor. But the exercise the average brood mare will take in the box stall is not sufficient for her general welfare. She will take some in moving about the stall, but unless she gets light work, or exercise for several hours each day in the open yard, her legs are liable to stock, her digestive system to get out of order, her foetus to be low in vitality.

If the box stall is not enough, what of the open yard? Some mares will take sufficient exercise with very little attention if allowed out in a protected yard; others, however, will stand about the door of their stall moving very little, and always looking for the attendant to come

and let them in. A yard for exercise should not adjoin the mare's stall if she is to take the maximum amount. A well-bedded barnyard is about the best place for the mare, and if there is a straw-stack in it so much the better. But she should not be let out with the cattle or she may get injured, and she should not be in a yard where sheep are kept or they may get injured. The farmyard as a place for exercising the brood mare has its disadvantages. She cannot be allowed to monopolize it, keeping all the other stock inside, nor is it safe to allow her to run with all the other stock.

The only method left, is light work, preferably in the team. There is generally some running to mill to do; some wood to draw from the woods; and light team work around the farm. In fact, every well-managed farm has considerable of this, even in the winter. Where the mare is used in the woods, care must be taken to keep her out of deep snow and to keep her on her feet. This latter point is important at all times. She should be sharp shod, at least in front, and if used in the team she should be shod all round. Falls mean foal losses. Keep the mare on her feet if you would have living colts. In fact, we believe that exercising in the team is so important that it would pay to regularly hitch up the one or more brood mares on the farm and drive them a few miles each day.

## The Best Hours for Winter Feeding.

Considerable has been written regarding the feeding of horses in so far as hours of feeding are concerned. Some would feed twice a day, some three times daily, others would give the regular daily allowance in four different lots. We must, in horse feeding, always remember that the horse's stomach is rather a small affair, and that the horse's digestive system is not equipped to handle large quantities in a short time sufficient to last for many hours thereafter. The nature of the horse's digestive tract is such as to indicate that smaller feeds

and more frequent, but always given with regularity, would be more desirable than larger feeds at more widely separated intervals. On the average farm during the winter season the feeder does not rise very early, and it is safe to say that the horses in the average farm stable do not get their first feed before seven o'clock in the morning; get their second feed around about twelve, and either one or two other feeds later in the day. Where three feeds a day are relied upon, we would favor giving one-half the hay in two feeds; one somewhere around six or seven o'clock in the morning, the other at noon, the other half of the hay to be fed when choring up for the night, which may be done some time between six and eight o'clock. The grain ration could very well be divided into two feeds; one in the morning, the other at night, after watering.

At noon a turnip, a couple of carrots, or a mangel might be given to good advantage.

But we believe there is a better method of feeding than this. Where the horses get their morning feed about seven o'clock and a noon feed about twelve, both representing fairly small quantities of hay, and where they are watered in the afternoon around four or five o'clock, as is usual on these short days, we believe they would do better to have a very small allowance of hay just after this evening watering and sufficient to keep them quiet until seven or eight o'clock at night, when they can be very well fed a regular night feed of hay, composing the bulk of the hay ration for the day and their oats, and be bedded down for the night. The horse is a restless animal, and the quieter he can be kept the better. We would favor this latter system of feeding, with the roots at noon as previously mentioned. We would water twice a day, and the late feeding at night takes the attendant to the barn where he can see that everything is all right, and tends to keep the horses quiet until morning.

The time to buy a stallion for next year's business is right now, before the good ones are all picked up, and nothing but second choice or culls left. In buying a sire, do not cut down too much on price. A few dollars are neither here nor there in a stallion whose influence is to be exerted upon so many mares in the community. The best sire available is the only one to buy. Look around for a while, and get one to suit you before putting through the deal. Keep an eye out for quality and size. These are the important considerations.