

is cut down under cover of the smoke, but when the entrance is low, they are often driven away before their work is done.

Several hundred pounds are often found in one tree, requiring a cart and team to carry off the honey.

The small clumps of wood found here and there in the prairie countries, are the favored place of the bee.

The white man's fly, as the bee is called by the Indian, is often sought by him, as the honey is prized as a great luxury, and much blood has been shed fighting with their white brethren for the possession of their sweets.

Weeds in Walks.

Those who have made walks in lawns and pleasure grounds, have had no little trouble in keeping them free from weeds. Many devices have been employed to overcome the difficulty, with varying success. The following, from the Canada Farmer, can be easily applied, and is well worth a trial:—"A most efficient agent for the destruction of weeds, and one not expensive, can be made by boiling four pounds of arsenic and eight pounds of soda in twelve gallons of water. To every gallon of this boiling mixture three gallons of cold water should be added, and the liquid carefully sprinkled over the walks while it is yet warm. It is desirable to do this in fine weather, and when the walks are dry, so that the weeds and weed seeds may have full benefit of the application. Care must be taken not to let any of the liquid fall on the leaves or reach the roots of any plants it is not desired to kill. In twenty-four hours after the poison is put on the walks every weed will be killed, and if it be once thoroughly done, it will keep the walks clean through the whole season."

Carrots and Turnips for Horses.

Carrots are cultivated in the United States by many persons as food for horses, as a substitute for oats. To horses of draught, or slow work, carrots may be fed in greater quantity than to those of the saddle or carriage. The chief value of carrots as food for horses lies in the pectic acid contained in them, which so much assists digestion and assimilation.—Horses of slow work will thrive and do well when fed on six pounds of carrots and eight pounds of corn-meal in the day, with an allowance of hay.

Our experience, however, has been, that a better condition of horse has been attained with the same quantity of Swedish or yellow turnips, cut in slices and sprinkled with corn-meal—a feed we think that cannot be excelled either in the conditioning of horses or the economy of expenditure, and a better substitute for green food than the carrot, which we are sure is entirely overrated as food for horses. This is easily demonstrated in a few weeks trial; the soft and glossy coat—the healthy look—the elastic step and good spirits of the animal so fed, will attest the superiority of the Swedish turnip. A trial of the feeding qualities of the yellow turnip will not only satisfy the experimenter of the truth of the high character here given it, but will induce him to rely upon or at least give them a place among other articles of feed for his horses.—We have seen farm horses employed in hauling manure or plowing every day except Sunday during the winter and early spring, kept in excellent working condition, fed on turnips, hay and oat straw, and when the days grow longer and the work more severe, a few quarts of oats were given in the middle of the day.—We have seen horses fed upon carrots, but never in one instance have seen a generous or a more healthy response on account of them. Now, if carrots be as good and healthy for horses as is asserted, a corresponding effect would be exhibited. Without this, no special advantage can truthfully be claimed for them beyond other feeding substances of less reputed value and of less cost. Medicine, like some speciality of feed, has its value from some inherent property it contains, and is recommended for a given purpose, but sometimes we are disappointed, when it has failed to accomplish the good expected. On the whole, we think that the good name given to the carrots as a feed for the horse is in books only,

and cannot be substantiated by the most careful experiments. We have only referred to this variety of feed for horses in view of its utility, and not because of its economy, on which consideration it will not compare favorably with many other articles of less money value, which are more easily procured, and as yet are not so well known to horsemen.

To speak of the uncertainty of the carrot crop would be unnecessary, for this is already but too well known to require comment. But of the turnip, viewed from the same aspect, little need be said. When properly understood, it rarely disappoints the cultivator, and moreover, apart from all consideration as a feed for horses, it is the basis of English agriculture, and at no distant day will occupy the same position in the United States: First, because it is one of the very best articles that can be fed to all (or nearly all) domestic ani-

mals; and second, the manure from animals so fed is of the highest order. Thus we have a vegetable easy of cultivation and growth, which contains several properties, possesses several distinct characteristics, and is used for many different purposes. A trial of the Swedish turnip, for a season, as a part of the horse's feed, will more than satisfy the inquiring mind of the importance of our recommendation.—*McClure's Stable Guide.*

If any of our readers are able to give more information from experience with either kind of food for the horse, they would be doing good to themselves and the country by forwarding a communication to the ADVOCATE, which would be published without cost to them.—[Ep. F. A.]



THE GLEANERS.

The Gleaners.

The above was a common autumn scene in England.

The gleaners are here seen plodding homeward by the light of the moon, bearing their gleanings.

The scene is a pretty one, and shows the skill and taste of the artist. The village in the distance, and the old stile, and the trees so different to ours, all tend to make it an enchanting view, which all lovers of beauty must admire.

It is many years since your editor has seen such a sight. In our land of plenty such a scene is never met with. Every one can get employment that will pay them better, not because we take up our grain closer, (for we have often seen ten times as much left on our fields as we have ever seen in England,) but the grain is not so valuable here, for labor is of far greater value; and what is left in our fields the hogs are apt to turn to some account.

Why should we Drain?

This, to many of our readers, will, no doubt, appear to be a question easily answered by the statement that we should drain to get rid of the surplus water. Such an answer is very good as far as it goes, but it should go much further than merely getting clear of the surplus water. Let us fully understand why this surplus water is injurious to plants; by the term plants, I of course allude to those which we cultivate or use as pasture, for without the water stands upon the surface, some kind of plant, useless as it may be to the farmer, will grow.

The surface water if not removed by draining, must be by evaporation; but in changing a liquid into an aërial body, there is always a large amount of heat absorbed and lost; then while this water is evaporating from the land the soil is getting no warmer, no matter how warm the weather may be. It has been ascertained by experiment that moderately rapid evaporation will reduce the temperature from fifteen to twenty-five degrees. This becomes the more important when we consider that common corn will sprout and grow in a soil warmed to fifty-five degrees, but will rot in one of forty-five. We can only come at the

amount of heat required to evaporate the rain that actually falls upon one acre by comparison. Morton, in his Encyclopedia of Agriculture, estimates that it would require 1,200 pounds of coal per day to evaporate the annual rain fall of an acre, or about 219 tons annually.

Undrained land is always cold, not only from the heat lost in keeping up evaporation, but also from the philosophical fact that heat will not pass downward through water. Heat can only be propagated through water by the upward passage of the heated particles and their places being supplied by colder ones.

By carefully conducted experiments in England, it has been found that the temperature of undrained land was from fifteen to twenty degrees lower than those which were drained.

Another very important and too often overlooked point in draining, is the effect which well laid drains have in promoting the circulation of air through the soil to the full depth of the drain.

It is a well-known fact that the atmosphere contains all the elements needed to carry on the growth of our crops; and it is also known that whatever water may have in solution, it will part with it during its passage through three feet of soil, and will come out perfectly pure and clear.

It has been clearly settled that rain water contains a considerable amount of ammonia in solution, as well as carbonic acid, and it has been estimated by good authority that the ammonia contained in the rain which annually falls upon an acre contains as much ammonia as from six or seven hundred pounds of Peruvian Guano, and if retained in the soil would produce as great an effect as three-fourths of this amount of guano.

When water can pass it will be followed or accompanied with air, and the roots of plants will expand many feet in search of air. Instances have been published of drains laid at the depth of three feet having been stopped up by the roots of wheat and grass. From this we see that another very important effect of draining is that it deepens the soil, for it encourages the downward passage of roots, which, by their decay, furnish vegetable matter to the subsoil, and thus fit it for supporting vegetable life.

Most of our farmers advocate deep plowing, because it encourages the downward passage of the roots, and thus in a measure prevents the bad effect of dry weather. If five or six inches deeper with the plow makes such a great difference as it does, what must be the effect of an increase in depth of from two to three feet.

Nor is this all; the water in its passage through the soil necessarily divides it into very small portions or grains, and being followed by the fine rootlets, it greatly increases the amount of soil from which the plant may obtain its nutriment, and has the effect of transferring the various chemical fertilizing constituents from the sub-soil to the surface, and there storing them for the use of the present and future crops.

Another great advantage possessed by thoroughly drained land is, that it becomes dry much sooner than land not drained. Land well drained will be in working order in one day after the heaviest rain, and in much better order than the same soil, if undrained, would be in five or six days.

It has been estimated by practical drainers in New York, that thorough drainage will add at least one month to the growing season.—By warming the land in the spring and making it dry, it can be worked fully two weeks earlier than undrained soils, thus practically adding two weeks to the growing season at its commencement.

In the fall the higher temperature of well-drained land will enable the grain to grow fully two weeks longer than on similar land undrained. In our corn crop this will in most seasons make a great difference in the yield, for in an unusually late spring it is often caught by frost before it has had full time to mature the grain.

Another great advantage claimed for drained land is that grain and grass on it are not liable to freeze out. Practical farmers know how much is lost from this cause; the continued thawing and freezing of a variable winter will often destroy three-quarters of the roots in a clover field by drawing them entirely out of the ground; and the same is true, only to a less extent, of the wheat crops.

John Johnson, of Seneca county, New York, who has some thirty miles of drains in operation, is perhaps the one best qualified to judge of the effects of draining in this particular,