

Draining the Orchard.

Our readers will peruse with interest the communication from Mr. Henry Ives and his criticisms of Mr. K. Sutherland's prize essay, published in our June issue. We fear some of our readers may be led to the conclusions that all "sandy loam" orchards require no drainage, and that drainage may be overdone. Drainage can only be overdone as a matter of expense; that is, there may be inefficient returns from the capital invested, but in no ordinary case can the land be made too dry by excessive drainage, nor can such excess produce results injurious to the crop. But what we desire specially to allude to is the conditions under which light sandy soils stand greatly in need of drainage.

Let us illustrate: On a portion of our experiment grounds, which is a sandy subsoil with a surface layer of sand containing a large percentage of vegetable matter, we planted out some apple and pear trees for experimental purposes, chiefly for testing different methods of planting and fertilizing. To all outward appearances, the soil is perfectly dry; but below the bank of the river spring water is seen oozing out even in the driest seasons, showing that an orchard on the bank would sooner or later suffer from cold feet. We therefore deemed it advisable to dig drains $4\frac{1}{2}$ to 5 feet deep, and at these depths several springs were found in the bottom of the drains. We mention these facts to show that it is easy to be deceived about the dryness of the soil, and in case of doubt, there is a good defence for the practice of alleged "over draining." We know of sandy soils the wetness of which can only be determined, by ordinary observation, from the nature and progress of the vegetation. If a sandy soil has good natural drainage, the vegetation should be early, and by comparing this—and the natural varieties of weeds—with the vegetation on similar soils in neighboring sections, a fair conclusion can be drawn as to the character of the soil with reference to moisture.

It is a great mistake to suppose that excessive rains can be removed too rapidly by drainage; and with reference to the supply of moisture in a dry season, the retention of rain water in the soil will be of no assistance, if by capillary action the supply is not furnished from below.

With reference to subsoiling, which our correspondent also criticises, a great deal depends upon so many circumstances that we cannot mention them here. We might add, however, that the difference in the effects of subsoiling and draining is one more of degree than of principle, drainage producing subsoiling effects in the most practical and efficient manner.

We are pleased to learn that the results of milk testing at the cheese factories, as conducted by our dairy expert, have been so successful, and so thankfully received by the directors and cheesemakers at the factories visited. The reports we have received state that the effects upon the patrons have been beneficial, and in all cases a better quality of milk is received. We shall be pleased to continue these tests, so far as our time permits, and we welcome all invitations to have further tests made. We appreciate the thanks received from the directors of the factories visited. Particulars will be found in our next issue.

It has been found in New York State that a 10-inch board wall, filled in with sawdust, will protect fruits or roots from the severest frost.

The Farm.**Want of Skill in Handling Horses.**

One of the most unfortunate things that can happen to a farmer who is forced to depend upon hired help, such as he is compelled to take on trial as it comes along, when he is ready to begin spring work, is to get men who have no skill or judgment in handling work horses. In the first place, they start out by showing an entire want of judgment in feeding. Having a full crib to go to, they commence without regard to the previous manner of feeding, to crowd upon the team they are to have the handling of, all the grain it will consume, and they are not satisfied until the horses leave a portion in the feed-box, as evidence that they have had enough. Horses fed in this way, as the warm weather comes on, sweat and foam at their work, and the dull-headed hired man takes no useful hint from this. He is very likely to charge the sweating horse with being soft, while a reasonable amount of knowledge would teach him that the most hardy horse living can be rendered unfit for hard service by indiscreet feeding.

Then, again, in the adjustment of the harness, the average hired man knows little about it. The collar is often badly fitted—too tight or too loose above, not fitted properly to the peculiar form of the shoulder-blade points of each horse, which may vary materially in the two horses that make up a given team. The draft may come too high, which, in a horse with considerable slant to the shoulder, will result in causing the collar to press unduly upon the windpipe, interfering with the horse's breathing. The collar may be right, but the hames too long, or, on the other hand, too short below the point of draft. In all these respects, the highest of skill is required in fitting, that the power may be expended with the greatest ease to the horse, and the greatest efficiency in the carrying on of the work. In the matter of the check rein, no hired man should be permitted to say how the working horse shall carry his head while at heavy work. The horse only, and each horse for himself, can decide this. In the manner of guiding, and general management of the team while at work, nothing is more reprehensible than the habit, so common with some hired men, of jerking the team with violence, by the bit, and lashing it with the lines. A bungling, noisy driver can confuse and spoil the best team to be found on any farm by pursuing this plan for a day or two. Skill in fitting the harness and adjusting the line of draft, and skill and quietness in handling the team while at its work, should be rigidly exacted, and made a condition.

But perhaps there is no one thing in the management of a team wherein more skill is required than adjusting the work from hour to hour to the condition the horses may be in at the time. Thus, the driver starts out for a journey or drive, or to haul a heavy load, immediately after a heavy feed has been given, a very improper thing to do, no matter what the apparent necessity. The average hired man expects the horse to be full of life and strength after a hearty feed, not knowing or stopping to think that the powers of the system are expended in a large measure upon the process of digesting a heavy feed of grain, and that, as a natural following, the brain is dull and the tone of the muscular system far from being at its best. A little observation would show him that the

horse is dull from necessity for a time after a feed, and if he tries the experiment of driving slowly for a couple of hours, he will find the team will brighten up, and if it has any inherent life, will, of its own accord, quicken its gait, and move off with entire willingness. In addition to the heavy feed referred to, the other error, of equal, or very nearly equal importance, is the leading of the team to the watering place immediately after giving the full feed referred to, thereby chilling the stomach and suspending digestion for the time being. All farmers of considerable experience have found that not more than one man in ten has skill in the directions pointed out, and where he is so fortunate as to secure such an one, all the others should be placed under his directions.—[National Live Stock Journal.]

The Influence of Parents.

Of all the means available for effecting an improvement in any race of domesticated animals, breeding is the most powerful. The general influence of parents upon their progeny is that the latter invariably inherit a modification of the forms and qualities of the former. Nor is it necessary for transmission to offspring that any especial form or quality possessed by a parent should have been by him or her inherited; an improvement once established in an individual, whether by inheritance or as a result of special management, is susceptible of transmission to succeeding generations, and by careful and intelligent attention to the selection of future partners for the offspring, the alteration may be fixed and become a typical character of an improved race.

It must never be forgotten that not only are superior forms and attributes transmitted from parent to progeny, but that defects, malformations, and unsoundness, or the predispositions thereto, seem to enjoy an especial privilege of re-appearing in succeeding generations.

Some persons regard the qualities and defects of breeding animals in a relative as well as an absolute sense; for instance, they agree that a malformed chest, or misshapen limb, are defects absolute, but assert that flat feet are only positively defective when possessed by a stallion intended to be put to a mare having similar feet; and further, that such faults are to be considered rather as desirable qualifications in the partner of an upright-footed mare. Personally I can admit of no such qualification, and believe it folly to expect that the mating of two animals, each having opposite defects of any kind, can result in anything but disappointment. Imperfections of conformation, constitution, or temper, can not be so corrected, but are to be very gradually improved by careful attention to the selection of partners possessing perfect organization, to oppose defects, and still more by the employment of well-directed external means calculated to ameliorate the particular fault. Physical and intellectual faculties to be permanent must have been fixed by transmission from parent to progeny, through a series of generations. Recently acquired qualities are ephemeral; they are transmitted with difficulty, and destroyed by slight opposing causes.—[Reynolds on Draft Horses.]

A circular has been issued by the Canadian Pacific Railway Company to the effect that cattle from Canada to Dakota will be subject to a quarantine of ninety days; also inspection by a veterinary surgeon whose certificate is necessary before cattle can be admitted into the territory.