

### Editorial.

#### Barn-yard Impurities.

There is a sad neglect of barn-yards in this country, and in more senses than one. For five months in the year the midding is the nucleus of important interests for the future welfare of the farm. We refer to manure. Then for five months the barnyard is the radius of farm operations, both for men and women. Besides, the importance of the barn-yard being the laboratory in which the year's supply of plant food is made, it is also the arena of noxious gases and fluids. How many farmers have proper receptacles for their liquid manure and the washings from the dung-pile? But we forget; a large number of farmers have such in the shape of the wells in their barn-yards. Instead of yards being properly drained, and having tanks for the reception of the liquids, these, through the natural laws of gravity, find their way to the lowest point, and this is the barn-yard well. It can hardly be stated that fluids always have a tendency to go down, infiltrate or permeate soils, no matter how compact. There is a continual circulation of fluids in all the upper strata of earth, similar to the circulation of the blood in the animal economy. That is, there is a natural drainage going on all the time through the interstices of the soil. Now, let this be clearly understood—that fluids are circulating all the time through the ground. But at this time of the year near the surface, when the ground is frozen, the circulation is impeded by the action of frost, and the fluids become solids. Only at depths lower than the frost-line is there any circulation at present; but as soon as spring opens, and the washing process commences and the soil absorbs the liquids, they at once find their way to the surrounding wells. There is a two-fold idea involved in this barn-yard question; first, by not having proper drainage and tanks for the liquid manure. There is a large leakage of the essential elements of plant food—the liquid manure; and it has been shown in this paper that the ratio of liquid and solid manure is as nine to seven, or that weight for weight, seven lbs. of liquid excrement contain as much plant nutriment as nine lbs. of solid. But again, another phase of the question about barn-yards is, besides having tanks and drainage for the liquid it would pay to have proper shelter for the manure, so that the action of rain and frost would not deteriorate the quality and thus lose by continual washings. We have no doubt but separate and properly-constructed apartments for the solid excrement would save as much to the farmer as the waste of the liquids. For example, take the ordinary way of making manure in this country, and by exposure to weather, by washing and the evaporation of gases, especially ammonia, the waste is extraordinary, and it is not to be wondered at that farm-yard dung is often found to be so insufficient in supplying the required amount of plant food; for by washing and exhalation the best of it is gone.

However, there is another view of properly cared for barn-yards, and that is, the lost liquid manure becomes a source of pollution to wells—thus killing both ways. In its proper place it would yield a supply of plant food; in

wells and streams it only tends, by being drunk by stock, to produce the most disastrous results. Cattle that drink impure water are affected in various ways. In milch cows drinking from a polluted barn-yard well, the milk will be impure, for the water immediately enters into the circulatory system and imparts its impurities to the milk, and this again to the butter and cheese. A great many farmers' wives often wonder why their butter spoils, and their milk is not right and won't keep. The cause may be looked for in the barn-yard well, which are often nothing more than what a Yorkshire man calls "meg"—rotten water. The effect of drinking this barn-yard water does not extend only to affecting the circulatory system of the milch cows, but these poisonous and polluting elements of decayed organic matter destroy the general health of an animal, and oftentimes produce disease and a general disturbance of the functions of life. And we venture to say that bad water, accompanied with improper food, has more to do with stock farming in this country than most of our breeders are aware of. If we are to believe the advances of scientific enquiry, nearly all diseases emanate from spores, or living organisms, and these are developed in various forms in the decay of animal and vegetable matter. Impure barn-yard water carries a deadly poison to both man and beast. Then, for the sake of economy, in saving manure in a liquid and solid state, and for the health of stock, pay particular attention to barn-yards. Have them conveniently laid out; save your liquid manure for the land, and don't allow it to be drunk by your stock, instead of fertilizing your land.

[The above subject is an important one. It means LIFE OR DEATH, PROFIT OR LOSS. The use of impure water destroys not only the health of your stock, but the milk produced from the use of bad water has been often known to cause sickness to the family that has often terminated in death. How many have you known to die from malarial and typhoid fevers? Impure water and impure gases are the cause of these diseases. Examine and see if it is possible for drainage from outbuildings of any kind to bring death into your house. If so, far better to expend a sum of money in prevention than paying a doctor's and undertaker's bill.]

#### More Underdraining Needed.

To the serious loss of thousands in Ontario, the past season has proved that draining is our great need at present, and that many farmers lost more in this single season by want of drainage than would have paid for doing the work, and, in some cases, perhaps as much as would buy the tile as well. But the great drawback in our part of the Province is that tiles cannot be had in any considerable quantity. The few yards that are in use can turn out but a limited quantity, so that those who wish to get some must buy them in advance, be there when the kiln is opened, and perhaps draw lots to see whether he shall have a few hundred or not, and handle them before they get cool. Would it not be well to do as a farmer in the New England States did some years ago—send to the old country for a dozen

tile-makers, and try to supply the demand, which must increase a hundred-fold, as farmers must drain, and are more than convinced that lumber is almost useless as material for permanent drains. The time has passed when old-fashioned farming will do for Ontario. The rich prairies of the Northwest are now preparing to pour their elevators full of grain into our markets, that will swamp our old-time methods and force us to quit growing grain, unless we double the yield with the same land. The time of eight or ten bushels of wheat to the acre has been blotted off the catalogue of successful farm operations. Deep and thorough underdraining is our only refuge, to do which we must have plenty of tile, well made and at value. Our neighbors across the lakes are now moving in the same direction, as will be seen from the following figures in the Country Gentleman of the 3rd inst.: In Illinois they have 500 tile-makers; in 1876 they laid 1,000 miles of tile drains; in 1879, 6,000 miles, and in 1882 20,000 miles were laid, and they estimate that to thoroughly tile one-half of the land in the State, or 16,000,000 acres, it would take those 500 makers of tile 100 years to make tile enough. But the demand and the increase of manufacture is so great that it is computed that before ten years 1,500 yards will be in operation. There is a bright example for our own people, and if, instead of bundling out hundreds of poor fishermen and paupers and their families into our Province, emigration agents would bring over two or three hundred tile-makers, our emigration funds would be spent to some purpose; while, as it is, it is used to add a comparatively useless burden to our country, and discomfort to those who are taken out of their true element and thrown into unfamiliar circumstances to which they are strangers.

A few hints are here in season: Draining, and thorough draining, is our next duty, and we must not aim at doing the work on the surface, nor all at once; nor must we begin at the upper end. This, if well begun, will be a permanent improvement; but to give it the true value we must begin at a good outlet. Lay down deep and good main drains, with proper outlet, taking care to guard the outlet by a grating, so that frogs, or other amphibious animals, may not enter to cause after trouble. After a main has been established the feeders, or laterals, can be laid with profit, provided always that care be taken to have each finished from the head to the main before a flush of water comes to carry sediment into the main. We must aim at laying as deep as circumstances will permit, but not less than three to four feet deep in any case.

It is to be hoped that our Provincial Legislature will so amend our drainage law as to give farmers the management of this business by making fence-viewers the arbitrators, with power to call, survey and to take levels, if necessary.

Do our farmers realize that if they tell us of their mistakes it may help more than the story of their achievements.

The real name of the mysterious "tramp" who does a good deal of barn-burning is Spontaneous Combustion.