

ascertained that manure suffered to run dry in the manner referred to, loses by far its most valuable constituent, which is the urine of animals, yielding an aid which forms one of the most important elements in the food of vegetables.

It is an invariable law of nature, that nothing—no form of matter—is what may be called thrown away—nothing is lost—every portion of matter having its proper value and use in the economy of the universe.

All animals and vegetables that have existed have become decomposed, and have entered into the formation of succeeding vegetables and animals. Man should take a lesson from this great fact, and should let nothing that his industry, or the natural fertility of the soil he cultivates, produces, become profitless. Every portion of matter should be husbanded with care, for, soon or late, under proper management, it will amply repay the care devoted to it. My own intercourse with farmers is rather extensive, and I regret to say that in few or no cases have I seen anything like proper arrangements made for the deposit and preservation of manure, and particularly of the valuable juices above mentioned. In most cases the manure is so placed that one would almost believe that the object was to drain it as dry as possible—to suffer its most valuable part to dribble into small pools—soon to evaporate and dry up—or to find its way into the ditch—there to poison the air, and to engender disease, instead of creating wealth.

The following is a brief description of the arrangements which would obviate the waste and loss referred to—arrangements which I have endeavored to carry into effect on my own farm:

The cattle yard should be about 100 feet long, by 80 feet wide, and it should be enclosed on the north and west by the barn and cowsheds. The centre of the yard should be slightly concave, so that the liquid draining from the manure finds a receptacle in the centre, and affords a fit deposit for dry matter, such as straw, peas, haum, &c. Any surplus moisture that may gather in this hollow is conveyed by a drain into a tank, in which there is a pump, so that this valuable fluid may be conveyed by a spout to any adjacent spot for making liquid manure compost,—to be described farther on,—or to be applied as circumstances may require. All the buildings should have spouts so arranged that the water may be conducted to or from the farm-yard at option.

And here I must take leave to present to you a few observations on the importance of having buildings furnished with spouts in the manner mentioned, and of providing water cisterns, particularly in situations where the supply of water is liable to be deficient occasionally. The following extract, from the New York *Cultivator*, affords the readiest mode of informing you on this point:

“The great mass of country residents seem to have no more conception of the floods of pure, clear rain water, which flow annually off the roofs of their dwelling houses, sheds and out-buildings, than if they had never heard of those huge watering pots—the clouds in the sky. If all the rain which falls in the Northern States, within a year, were to remain on the surface of the earth, it would form an average depth of about three feet. In the Southern States it would be more than this; in the American tropics it would amount to about 10 feet; near Bombay (Asia) 25 feet. Every inch of rain that falls on a roof yields two barrels to every ten square feet, and 72 barrels are yielded by the annual rains in this country (Canada) on a like surface. Consequently, a barn roof 40 feet by 30 yields annually 864 barrels of rain water, being over two barrels a day. Thus, the amount of water placed at the service of the farmer increases in a corresponding ratio with the extent of his roofing. The value of such a supply it is needless to dwell upon. Only a very small part of the water that thus falls can be contained in the miserable cisterns and tubs in common use. Cisterns adapted to hold the needful portion of water we know not where to find. It is true that where a frequent demand is made on a cistern it need not contain anything like the year's supply; space for a sixth part of it would suffice, for the variations in the wet and dry periods of the year do not amount to more than the rain of two months.”

The above extract shows clearly the vast benefit derivable from the proper spouting of roofs, and the establishment of capacious cisterns, not only for securing a constant supply of soft water, but to prevent the literal washing away from manure that part of it which is best calculated to promote the growth of plants.

The sewage, or refuse, running off from the interior of the dwelling house, should be preserved with the greatest care; all the waste water of the kitchen, which, in many cases, contains a great deal of animal matter, should be conveyed by pipes into the garden, for the purpose of watering it, and not the least portion of the house sewage should be suffered to run to waste.

The second description of waste often taking place on farms, results from leaving animal and vegetable matter lying here and there in the