

Handling Liquid Manure.

The most valuable part of the crop food is generally the most neglected—liquid manure. Men will spend thousands on elaborate farm buildings, while a liquid manure cistern never enters their brain except when they are compelled to build one for special reasons. Yet the cost is nothing compared to its value.

I have had 12-inch glazed pipes sunk 12 feet under ground, to convey mansion-house refuse from water-closets, kitchen and laundry into a cistern, and all the liquid from horse and cow stable also enters it. On top of this cistern is a large flag-stone, on this a pump, raised sufficiently high so that a cart or wagon can be backed under it, and the liquid pumped into oil barrels, a common iron faucet in the end, and a piece of tin or board attached to act as a spreader, throwing flake-like. For good effect this must not be put on sparingly, as by a road sprinkler. This liquid can be applied to all crops, from the seeding to the ripening, in flower garden, kitchen garden, all plants under glass, at proper time, and the growing of all farm crops.

For intermixing in the cistern, a dash like that of an old-fashioned churn is let into the flag-stone, and churned up and down before using; but a far better plan is to have a crank, chain and handle, and three fans placed in the bottom, to work so that the edges set within four inches of the bottom, and in revolving they will not touch the bottom, on the principle of a grain fanning mill, except that the fans must be of hard wood, and a strip of galvanized iron put on the edges.

This liquid I apply to lawns and meadows, and in August, when my neighbor's lawn and grass is as brown as a berry, mine is as green as pea foliage in May. I put a deodorizer in the cistern, and for some crops ammonia and other fertilizers, so that when it comes out there is no more disagreeable odor than from pump water. Carts or wagons are out at three o'clock in the morning using this liquid; by seven all is done. No matter how hot the day may prove, by applying thus early on any crop it will not water-burn.

I am no believer in the elaborate Meehi system of converting all manures into liquid matter by steam presses, &c., which I have seen in practice, and manuring by irrigation strictly. I am an advocate of irrigating by water; I have proved fully that this will pay. Let me say to those non-believers in liquid manure, who are fond of fine flowers, particularly extra fine roses, in winter, that those magnificent flowers are grown on benches 4 to 6 feet high, planted on only 5 inches of soil. What does it? Liquid manure, ammonia and solid cow manure droppings used as a thin top-dressing. All who have stock, if only a cow and a horse, can have their liquid manure cistern, though but a barrel sunk in the ground.

How often do we see manure carted out fresh from the stables, deposited on a knoll or poor piece of ground in large heaps, that the seepage may enrich it—a fallacy of the first water! Those poor knolls are, usually, a sandy, gravelly loam surface or a gravelly subsoil? this seepage, if any, will go through it like water through a sieve; then this straw mass is exposed to wind from the four quarters; if there is any life in it, it becomes a frozen mass, and in spring it is as it went out, a mass of straw. Had this same heap been

placed in a sheltered nook, even, turned over when wet to prevent fire-fanging, and so repeated every three weeks, and when fully rotted transported to its proper field for spring use, adding, in mixing, a bag of ammonia, and when finished, some plaster, it would have been a different thing. You are coming nearer right when you have the heap near your liquid cistern. You then have the soup and the meat.

One may see, once in a life-time, a farmer who will cut down his weeds from his fence rows before seeding, and draw his leaves in the fall to the manure pile of horse-bedding, that the heat may decompose them all, the whole pile being regularly turned over, looking as square as a board—but oh, how few such! "It is too much trouble." An incident of my own life may be a lesson for others: At the age of 15 I was sent to the late Lord Palmerston's to finish part of my apprenticeship. In March (my first day) at 6 o'clock in the morning I was sent to rake some new ground with a 2-foot cast-iron rake (as heavy as a modern sledge—those of the old school will recollect them). After ten minutes' work that bitter cold morning, I threw the rake down and said I would go and be a sailor, walked off a few steps, reflected, thought it would be cowardly, returned and stuck to it. In after years, when the matter was gone from my mind, and I was a head man, my old master recalled the circumstance and said it was my father's wish to try me; he had been watching all my movements, and remarked, when he had seen my action, that I would stick to it, and at least equal my fellows. I had a quick promotion, and they say I deserved every step, as I stuck to them all. I say also to young farmers, pick up the rake, and don't go to sea; no matter how heavy it may be, go at it; do not flinch at the word "trouble," and you will make liquid and solid manure too. Your first year may not meet your expectations, but keep on the second year, and you will say: "Well, how foolish I have been not to have thought of this before! My crops are better than my neighbors, and how neat and clean every thing is around me; and, yes, I am some dollars in pocket, too, and envied for my success." As to acreage, the same system can be pursued whether on one acre or 5,000, and in every department of agriculture and horticulture. This is simply the stepping-stone to high farming, the only system of farming that will pay, but understand that it bears no relation to that other fellow—fancy farming—of which keep clear.—[GERALD HOWATT, in Country Gentleman.

Some one very sensibly writing of treatment of horses, says: "Never run after a horse in the pasture. If he does not like to be caught, coax him with a little grain, but never deceive him with an empty dish. You can soon teach the wildest horse to come to you. When he does come let him eat a little while before you lead him off. Some horsemen, when going to the pasture, whether they wish to catch a horse or not, always carry a tid-bit—an ear of corn, a handful of oats, an apple or a carrot, a chunk of sugar or salt. When you turn a horse out to pasture, do not give him a slap with the bridle; he will remember it to your regret if you do. Make a pet and a friend of your horse; it will improve him and make a better person of yourself."

Scabby Potatoes.

The question of scab on potatoes has been discussed for many years by practical farmers with conflicting results, and in more recent years the experimenters have been investigating the subject, also with varying results. At the Mass. Experiment Station, a mixture of ground bone and muriate of potash was tried for two seasons (1885 and 1886), the experiment having proved successful in the former year, but was a complete failure last year. If the disease is caused by a worm, as some suppose, and not by a fungus, there will be no danger in planting scabby potatoes, and it has been established that scabby potatoes have produced sound crops. Microscopic animal life has been discovered on the scabs, and some have jumped to the conclusion that this is the cause of the scab, but it would be just as reasonable to say that the scab is the cause of the microscopic life, or at least favors its development.

From a practical standpoint, Mr. Henry Ives, in the American Cultivator, makes the following observations, which are worthy of attention:

The inquiry as to what causes the scab on potatoes is one of interest and importance to all. The original cause seems to be the corrosive attack of some worm or reptile, and the scab itself is the drying up and healing over of this indenture or wound, made through the skin, and into the surface of the potato. In different cases we find this done by different varieties of vermin, but nature's course in healing the wounds is about the same in all cases.

For this reason, and from the fact that all cases of scab have about the same appearance, the potato planter who has found the earth worm doing the mischief will formulate the theory that this same worm is the origin of the scab in potatoes. This notwithstanding the fact that the earth worm has been "lionized" by some of the professors as the origin of soils.

Another observer will find a small white worm eating into the surface of his potatoes, and after a few days, as soon as the rupture has time to heal over, his potatoes are scabby, and he will declare the enemy to be a small white worm which causes the scab. These and other matters which are the means of causing a break through the skin of the potato, will develop the scab. These are the reasons why so many practical men differ as to the cause of this trouble.

Again, we have the scientific men, who seem just as positive, and perhaps more so, in the promulgation of theories as to what causes the scab. These scientific gentlemen are not fully agreed among themselves. Some of them have with the microscope seen a multitude of "small fry," too minute to be seen by the naked eye, in the substance that forms the scab on the potato. Hence they arrive at the conclusion that the "small fry" are the original cause of the scab. The planter, on the other hand, without doubting the scientific discovery of the potato being infested by microscopic life, between the time that the worms or grubs first make their raid on the tubers and the time that their leavings become dried matter and dead scab, still does not charge them with being the origin of the damage, but concludes that nature always provides for some form of life to occupy decaying substance.

There is also the wire worm, which bores and eats its way straight into and sometimes through the potato. Again, there is the large white grub, which gnaws into the side of the tuber,