

A Silent Teacher.

As a general thing, mankind are so constituted that they would walk by sight rather than by faith. "Example goes further than precept" in influencing men's actions. We may preach till doomsday of the usefulness and the profitableness of improvements, but it is the practical exemplification of their fruits that induce men to look upon innovations with favor. The past weeks, and one or two yet to come, have given and will yet give opportunities for thousands of farmers to learn by a practical experience the truth of what agricultural writers have been enforcing upon their notice by "line upon line and precept upon precept" for years past. Improve your farms, level the rough places, remove the crooked fences, rid the fields of stones and other incumbrances, utilize every rod of ground lest it become a prolific source of pestiferous weeds, fertilize the soil, and make two or more blades of grass grow where but one grew before, and it will be money in the pocket, and pleasure and gratification in the barn, the stable, and the dwelling. But yet year by year the same unsightly spots, the same crooked, cumbersome fences around misshapen lots, too insignificant to be called fields, have prevented the plow; the same obstructive rocks have gapped the scythes and jarred the arms of the mower; the same wretched crops have raised the question whether it would best pay to gather them or leave them to scatter their seed upon the ground too impoverished to sustain their growth; and the same impecunious condition has made the payment of taxes and the purchase of groceries or clothes a matter for close figuring. But one neighbor more adventurous and reckless of consequences than others has procured a mowing-machine, and straightway there comes into the field a silent teacher, whose influence for good outweighs in one short season the wordy lesson of years. Elegant in form and brilliant in appearance, it has a "taking way" with it from the first. The weary mower laboring over his acre per day, and wasting a good fourth of his time in whetting his scythe hears the musical "click, click" of the mower across the fence, and beholds his neighbor at eventide unwearied after his day's ride around his field, contemplating his eight acres of meadow shorn, and the crop ready to be raked and hauled on the morrow. No fears of the weather trouble his serenity. His crop is safe, while the swinger of the scythe must run the risk of a week or more before he can rest at ease on this score. When his weary limbs are laid to rest, he will be apt to calculate the money value of all this before he sleeps, and strike the exact balance in favor of machinery over hand-labor. But this will not be the only lesson learned. His neighbor will, at the same moment, probably, be recalling the experiences of the day, for the same silent teacher has been eloquent in instruction for him too. He learns that to gain the best results from his machine he must level down the knolls and grub out the stumps. The stones, which threaten every moment the safety of the machine, and which he has for years cut and hacked with his scythes, must now be got rid of. The impassible gullies and sloughs must be filled or drained by next year, and the fences which impede his progress must be abolished. It dawns upon his mind that what he has been reading for years, but which he never supposed concerned him in the least, was of vital interest to him, and it has now a new force. By a curious, but very common, process of growth, one idea gives birth to another, and like a man whose eyes are suddenly opened, he takes in more at a glance than he can readily appropriate in so short a space of time. But his mind is charged with latent ideas, and he only needs the occasion to arise to bring each one into fruitful action. He will be an apt scholar, for the question of dollars and cents presents a wonderful attraction to the inquiring mind. From that day forth his main idea will be to find more work to do. As he runs hereads, as he may very well do. Poor crops will no longer be tolerated now that his machine does his work. Two tons of hay per acre are as easily cut and raked by horse-power as one ton, and his efforts will be successfully directed toward the laudable ambition of realizing that achievement only to be stimulated by success to further efforts. Then he abandons those doleful attempts he was wont to make as he discussed matters and things around the stove, at the grocery to show that farming was "played out," and did not pay any more. His thriving farm, his well-cared-for machinery, his thrifty and well-improved stock, refute his former arguments and make him daily eat his own words; proving themselves silent teachers, whose lessons have a weight that admits of no gainsaying, both for himself and his neighbors who watch him very closely and recall his success.—*N. Y. Times.*

Deep or Shallow Cultivation.

Why plants and trees prefer the upper and disturbed soil is obvious. Disturb, aerate and manure the subsoil, and then the plant or tree will multiply its fibres or roots in that lower soil, especially as the surface becomes more heated and dry. I have a striking proof of this in my back yard, where there was once a piggery. I filled up the space some 6 feet deep with ordinary clay soil, and planted on it some aucubas, laurels, bays, arbor-vitae and box, in order to hide a stable wall. Although the plants are small their growth has been so rapid and luxuriant that they are from 10 to 15 feet high, and they absolutely wedge or press upon each other with a development which surprises, and also proves that if the lower soil is both disturbed and amply manured, a small surface space is sufficient to maintain an immense vegetable growth. They have found in the deeper soil the needful food in some droppings from the ancient piggery. As regards the removal or transplanting of fruit trees, it is only another proof of the necessity for more deeply disturbing and manuring the soil by removing them after having exhausted their surface food, they thus go to a new supply and prosper accordingly. That removal would not be necessary if they had an ancient piggery or well manured soil to feed on deep below the surface. Said my bailiff to me this morning, "Do you know why these calabages don't grow as they generally do?" I said "No." "Well," he replied, "because we omitted to follow the plough with a second one going some inches deeper. We were busy and could not spare the horses, and now the roots are on an untilled bottom.

The fact is, the ploughmen are always too glad to escape the subsoiling, because it is harder work. The loss in crop by late and shallow ploughing is, taking the whole country, something fearful. The roots of crops soon strike through the thin furrow slice and come on to what I call a paved-floor, and then the pale and sickly plants give evidence of their uncomfortable and unprofitable condition. Many a mangold crop has failed to make its appearance because the thin furrow-slice has been dried through. We never miss our plant of mangold, because the soil is deeply, double, or trench-ploughed before winter, and it thus holds and gives moisture, as well as being a good filter in wet weather.

I attribute the general satisfactory appearance of all my crops to very deep cultivation, and I would make it much deeper had I steam-power, keeping, however, the lower soil still under the older cultivated surface.

I consider it both a national misfortune and disgrace that our general agricultural pie crust is only as thick as an old family Bible. It ought to be as deep as our tables are high, and it is so in the case of Mr. Campbell, of Boscot, who, after draining 4 feet deep, cultivates with 30-horse power engines 36 inches deep.

We are now about to manure and plough our land for transplanting cabbage after green tares mowed off. After spreading 20 loads per acre of good rich shed manure (no rain on it), two horses will be on the first plough, the second one, without its breast, following in the track of the first one, and drawn by four strong horses. That is the way to grow maximum crops. Draining, where required, should precede deep cultivation.

It should always be remembered that we cannot manure the subsoil through the top soil, for a few inches deep of the latter have the power to arrest and fix a much larger quantity of manurial elements (especially ammonia, phosphate of lime, and potash) than is ever applied in ordinary farming. This is why clover and other deep-rooted plants can only be grown at long intervals, for only a very small portion of manurial elements can pass the surface soil or escape being fixed by it. The raw and unaltered appearance of undisturbed soil immediately beneath the ploughed land gives unmistakable confirmatory evidence of the fact stated. Liebig and Way explain the cause of this fixing.

It is therefore quite certain that if we desire to manure the subsoil the manure must be incorporated with the subsoil, or the subsoil must be intermixed with the surface soil. The Rev. S. Smith, of Lois-Weedon, used to throw aside the cultivated soil and incorporate the manures with the undisturbed subsoil.—*J. J. Aecki, Tiptree, June.*

Cockle in Wheat.

A correspondent writes as follows:—"You can get rid of cockle in a single year by the use of a good fan, and in summer weeding out as much ground as will be sufficient for your seed in the fall. I have a rich soil, excellent for weeds, and some farmers would say natural for chess, and yet I know from experience that I have neither cockle nor chess in my wheat if I choose to do without it."

We can endorse the last paragraph from the pen of our correspondent, but not the first one. We do not think that cockle can be cleared out in one year. It is true that enough may be picked over to insure clean seed for next sowing, but if the whole crop is not so picked over, the cockle seed will be threshed out with the wheat, and pass into the barnyard with the straw and chaff the next season, if the manure is put in for wheat, the cockle seed will sprout and produce a fine crop.

If our correspondent will add one year to the time for getting rid of this pest, we will then endorse him; but we do not think it can be done the way he proposes; simply picking over enough for seed.—*Journal of the Farm.*

California has a wheat field of 38,000 acres.

From one grain of wheat planted three years ago, Burrell Green, of Florida, now has three acres of grain.

MANDRAKE ROOTS FOR POTATO BUGS.—A gentleman residing in Brecksville, says the *Ohio Farmer*, which is in the part of this county of Cuyahoga, reports a very successful treatment of potato bugs, with a decoction of mandrake root tea. The roots are boiled in water and the decoction sprinkled on the potato vines, the same as directed for the solution of Paris green.

SALT FOR CUT-WORMS.—A great deal of attention is attracted to the application of salt to corn-hills to prevent the attacks of cut-worms. The late Isaac Newton, Commissioner of Agriculture, said: "Take one part of common salt and three parts of plaster or gypsum, and apply when the plant first makes its appearance, about a tablespoonful around every corn-hill. It will be found a sure protection. The mixture should not come in contact with the plants, as it may destroy them. This method has been tried over and over again by some of our best farmers in Pennsylvania, and when properly applied has never failed." Newton further said that he tried this in alternate rows, which completely proved its efficacy, as while those where it is not used suffered greatly from the grub, not a plant of the other rows were touched. Let it be tried, as it can be so easily done by those who are troubled with cut-worms in the corn-field about these days.

ANALYSES OF MARLS.—Ryland F. Brower, the chemist of the Department of Agriculture, in the July report, shows in his three analyses that some green sand marls contain eighty-four parts sand, and nine carbonate of lime; yet it is much richer in alkalis and phosphoric acid than shell marl, which is all lime and sand. But he says one and one-half tons of the former and two and one-half tons of the latter will supply mineral elements enough for an acre of wheat. No wonder, he says, that the large amount of lime and sand with which the more valuable ingredients are mixed with forbid the transportation of this marl to any great distance. It may be well however, to remark that no geological report that has yet appeared from New-Jersey has ventured to publish so low an estimate of the green sand marls of that State, as every published analysis in those reports gives a much higher percentage of both phosphoric acid and potash.—*N. Y. Times.*

THE NATURE OF GUANO.—It is a generally received opinion that the deposits of guano are exclusively the excrements of birds. Dr. HABEL has investigated this matter microscopically and chemically, and has found that after treating the substance with an acid, the insoluble residue is composed of fossil sponges and other marine animals and plants precisely similar in constitution to such as still exist in those seas. The fact, too, that the anchors of ships in the neighborhood of guano islands often bring up guano from the bottom of the ocean, is quite in opposition to the prevalent belief. Dr. Habel therefore considers that the deposits of guano must be the result of the accumulation of fossil plants and animals whose organic matter has been transformed into nitrogenous substance, the mineral portion remaining intact.