

stood is a benefit. Besides, it will keep the ground cool—what the potato wants.

The best mulch for this, as well as for shrubs and young trees of all kinds, is one of green grass or weeds, applied immediately after the last stirring of the soil, and sprinkled well with leached ashes. The ashes will draw moisture from the air and protect the green coat, which in turn will protect the soil below. This, also, will add fertility. We have used it for several years with the most gratifying results. The severest drouth has but little effect; there is a fine growth, seeming in defiance of the weather. We also apply it to grapes, and with benefit.

This for summer mulching. For winter there needs equal protection. Grass must have itself or the snow to protect it. A good aftermath or well drained soil is sure to do this. It will lessen the leaving; and there will be considerable fertility, furnished by the plant itself, which is not lost, but goes at once to form pabulum for the roots, the plant thus reproducing itself, being an addition to the usual growth where the ground is fed close.

Straw is a good mulch for winter wheat. In some parts it is a rule to apply it. You protect the strawberry by evergreen boughs, the best protection, among the many, that can be applied. It prevents smothering, and it keeps off the cold. The roots of grape vines, shrubs and small trees should be covered with leaves held down by a little soil. It will lessen the frost both in intensity and in depth. The winter of 1871-2 was a test. Besides, the leaves will add manure in the spring, and of the right kind.—*W. Farmer.*

TIPTREE HALL, MR. MECHE'S FARM.

In the English agricultural papers for June 17, Mr. J. J. Mechi, the well-known and very successful English farmer, gives some facts concerning his farm of "Tiptree Hall." The original farm embraced 128 acres and fraction, and cost Mr. Mechi (in 1841) £3,150, or about £24 (say \$120) per acre. The tenant then in possession paid £150 rent per annum. The farm buildings were ancient and unhealthy; the land was undrained; the fields and open ditches numerous and irregular in shape, and on part of the premises was a "bog, unsafe for man or beast." Mr. M. removed three and a half miles of fences, and enclosed sixty acres in one lot and forty-two in another, "without a tree," but with some two acres of shrubbery provided for the birds. "The light land was swampy, and the heavy, on a wet day, as loamy as bird lime, but as slippery as butter." Some of the wheat crops in 1842 yielded about one and a half to two quarters per acre. "Now the land is dry and workable, the bog especially so," the drain discharging from 40 to 45 gallons of pure water per minute in summer, and more in winter. It was a fever district—that is all changed. Some of the land produced nothing but furze, broom and ferns, but in 1868, on some of this land, eight quarters (64 bushels) of white wheat were grown per acre, and with the straw realized £28, or £4 more per acre than the land originally cost. In 1869 the same land yielded seven and a half quarters of Rivett wheat; in 1870, 39 tons of mangolds; in 1871, five quarters of red wheat; and this year it has a promising crop of beans, to be followed by wheat. Other fields have often yielded seven quarters of wheat per acre. The example of thorough farming, with its successful results, though greatly ridiculed at first by the neighbors, has been largely copied now among them, and with great benefit. Mr. Mechi concludes his account by pronouncing himself "opposed to fixity of tenure by the laws of entail and primogeniture."

CAUSE OF THE DETERIORATION OF THE WHEAT CROP.

Frederick Watts, Commissioner of Agriculture, in a recent letter, says:—The experience of many years has led me to the conclusion that the deterioration of the wheat crop is mainly attributable to

the improper and untimely use of barnyard manure. In our practice the clover sod is turned down and planted with corn. The ground is again plowed in the spring and sowed with oats, and upon the stubble of this crop all the manure of the barnyard put, and then plowed again and sowed with wheat. This delicate plant is then subjected to the rawness and grossness of barnyard manure, with all its germs of flies, worms, lice and bugs—seemingly a sufficient cause of the unsuccessful growth of a grain so pure and delicate as wheat. Corn is the hog of plants, and will devour food of any quality and thrive upon it. Here then, upon the sod to be ploughed for corn, is the place to put barnyard manure. Bury it deep, and when the corn is cut off break the stubble even with the ground during the winter. In the spring harrow your ground well, sow your oats upon it and roll it. You will thus keep your manure where you put it, and not subject the oat crop to be thrown down by it. When the crop is removed bring your manure to the surface by deep ploughing and thorough tillage. The barnyard manure having thus received proper preparation is a fit food for the wheat plant. Experience has taught me this lesson. On my farm in Pennsylvania I never fail to raise a satisfactory crop of wheat, and I have known no such thing as midge, Hessian fly or army worm."

WEED SEEDS.

The seeds of cockle, chess, and other weeds that are mixed with the screenings from the fanning mill, should be carefully prevented from getting mixed with the manure in the barnyard. We once permitted a neighbor to run a few bags of grain through our fanning mill, and gave him the run of the barn for that purpose. When he had finished, and during our absence, he—doubtless with good intentions—scattered the screenings all over the barnyard, so that the fowls might get the waste grain. This probably was intended as a sort of recompense for the use of the mill. Alas! we never regretted more than on this occasion the doing of a favor that resulted badly for ourselves. Our manure pile was thoroughly seeded with cockle and chess, and probably ten years of labor will be inflicted on us before these seeds can be eradicated from the field on which that manure was spread. We mention this circumstance as a warning to others, and also as a forcible reminder to all that weed seeds should be consumed with fire and utterly destroyed. Don't feed them to poultry; they won't eat cockle, and the seeds seemed to last for ever; by hook or crook they will get into the fields somehow. Put them in the stove and you will have seen the last of them.—*Ed.*

SUCCESS IN FARMING.

Much of the success we observe among the best class of farmers results from calculation, skill and energy. A man to fully succeed upon the farm must be an intelligent investigator. He should at least understand farm chemistry, that he may determine the character of his soils, and how to handle them, and the best time to do it. He should understand the principles of the laws of nature fully and clearly. He must know the effect of each manure upon each particular soil. To know this, he must understand the first great principles of chemistry, and in natural philosophy should be well versed. In fact, the successful farmer must be a scholar and a teacher. It is not enough that he knows, mechanically, how to plow, sow and reap. He should understand when to do it, and the relations of the elements one to the other. The benefit of a rotation of crops should be a part of his farm knowledge; subsoiling, the application of manures, and their effect upon each particular cereal, should be clearly understood. Any man can be a botch upon the farm if he wills it; but to have success in farming, there is much to learn. To be a complete farmer, there is more study,

research and experiment necessary than to fit a man to be a physician, merchant or lawyer.—*Rural World.*

RESULTS OF DEEP PLOWING.

In the fall of 1869, Mr. D. plowed 37 acres from twelve to fourteen inches deep, using six horses for the work. The ground was sown in September, and the young grain made a fine growth that fall. The next season was very dry, so much so that vegetation generally suffered severely, but this piece of wheat did not show any marked effects. It was remarkably free from weeds, and very even in growth. When it came to be threshed the yield was twenty bushels per acre, while adjoining wheat lands, with shallow plowing, yielded less than half as much.

The next experiment was with the same piece of land and forty acres more adjoining it; the land was plowed with eight horses, four abreast, and the average depth attained was somewhat greater than before. The growth was very fine and uniform, and the yield of the whole piece (77 acres) a little over thirty bushels per acre.

In sowing the new piece of forty acres, an experiment as to the most profitable amount of drilled seed to the acre was made. The quantities tested were half a bushel, one bushel, one and a half, and two bushels. The last two amounts gave the least satisfaction, while as regards the first two it was not easy to decide by the eye which was best, and no test by measuring the actual yield appears to have been made.—*Kansas Farmer.*

PLOWING TWICE FOR WHEAT.

A correspondent of the Cincinnati *Gazette* writes:—If any one will break his ground deeply and thoroughly two or three times during the spring and summer, the extra amount of wheat per acre will pay for plowing, and leave a handsome profit besides. I have tested this practice several times, with the most satisfactory results. In 1869 I had a field of 16 acres of like fertility. I expected to plant half the field in corn, but for some reason I did not. In the half that had been plowed for corn after the ground had been broken, the weeds grew more rapidly. Consequently I broke it again the 20th of June. On the first of September following I plowed the entire field and sowed in wheat. The result was as follows:—The half which had only received a single plowing yielded per acre 13 bushels and eighteen pounds; the half that received three breakings yielded per acre 23 bushels and 40 pounds, which made a difference of more than 10 bushels per acre. At \$1 per bushel this would pay for the extra plowing and leave a net profit of \$6 per acre beside.

SOURCES OF FERTILITY IN FARMS.

The sources of fertility to farms are the refuse of the crops which they bear, modified by the farm stock, and preserved and judiciously applied by the husbandman. There is not a vegetable matter grown upon the farm, be it considered never so useless or obnoxious, but will, after it has served ordinary useful purposes, impart fertility to the soil, and contribute to the growth of a new generation of plants, if it is judiciously husbanded and applied. There is not an animal substance, be it soil, liquid or gaseous—be it bone, horn, urine, hair, wool or flesh, or the gasses which are generated by the decomposition of these matters—but, with like care and like skill, may be converted into new vegetable, and afterwards into new animal matters. To economize and apply all these fertilizing materials, is the province and the duty of the husbandman.

Agricultural Items.

THE *Michigan Farmer* estimates the average wheat crop of that state this year at 19 bushels per acre.

U. S. APPLE CROP.—According to the monthly report of the Department of

Agriculture, we observe that the apple crop promises to be above an average.

THE *Western Farmer* says that in Wisconsin especially some sections have suffered very severely from the drought, but, taking the state as a whole, the crops are fair, and prices also promise to be very remunerative.

ILLINOIS.—We learn that the army worm has committed great injury to the oat crop in this State. No better means for guarding our crops from its ravages have been discovered than those given in this month's *FARMER'S ADVOCATE*.

A FARMER of the vicinity of Indianapolis a few years ago sold his farm for \$4,000 and went West to grow up with the country. Recently he was in that city seeking employment at \$60 a month, while the ground that used to be his farm is now worth nearly a million dollars.

SUBSOILING.—C. W. Homk, Ball's Co., Mo., writes that he has tried running a subsoil plough in the rows where corn or potatoes were to be planted, and gained an astonishing increase in the crop. This is the general testimony in regard to subsoiling, which loosens the deeper soil, without burying the surface soil.—*Am. Agriculturist.*

EARLY SPRING WHEAT.—One of the pioneers of agriculture in Lower Canada says:—"This spring (1862), finished our spring wheat, sowing in the month of March about 30 acres. I had the second year of my clearing one hundred acres of the best wheat I ever saw." The yield was over 3000 bushels. From one measured acre, he had forty bushels of wheat.

SUBSOILING.—A. D. C., in *Moore's Rural New Yorker*, thus speaks of his experience in subsoiling:—"We subsoiled a lot for corn in 1869 (been greenward, we used two teams, that being a very dry season), and planted it to corn. We had a very large crop; where we subsoiled, the leaves did not roll in the dry weather, but where the subsoiler was not used, they rolled badly, showing that subsoiling is a remedy for drought."

POTATO STARCH.—We were informed, during a recent visit to the White Mountains in New Hampshire, that the potato crop, for the manufacture of starch, was the most remunerative of all farm products in that region. We observe that a New Hampshire paper states that there are over sixty factories of potato starch in that State, nearly all in the most northern counties. Over 3000 tons were made last year. Will the potato bugs interfere with this business, and when?—*Country Gentleman.*

THE ENGLISH HARVEST.—A letter appears from Mr. J. J. Mechi, in the London *Times*, on the 28th ult. In it he delivers the following opinion of the crops:—"Fourteen days of bright and dry weather have permitted the free use of the scythe and reaping machines, so that harvest is nearly completed in this neighborhood, and threshing machines have been set at work. These results prove unmistakably that straw is out of proportion to corn (grain), and in fact that the wheat crop hereabouts is, in too many instances, a decided failure (belying their appearance), both in quantity and quality, more especially on stiff tile earths, and undrained soils. In many cases, the crops have been ruined by ice, storms and weeds. The amounts of the fine white wheat called 'rough chaff,' which in dry seasons are produced so abundantly and extensively on the stiff soils of the Dengie Hundred, are quite deplorable. Red wheats have stood the season better than white. Rivetts are very good and perfect, the season having suited their growth and development. This will be a bad season for heavy-hand arable farmers, for labor and expenses are heavy. Light-land farmers have the best of it."

A CORRESPONDENT of the *Woodstock Review* says of Lower Canadian farming: