ALL ABOUT ALFALFA *(Lucerne)*.

The objections to its general and extended culture are that it takes so long a time—three years—for the crop to arrive at maturity, affording no return the first or second year, and but little the third, while in the meantime it must be cultivated (in rows) so as to keep it clear of grass and weeds, which would otherwise get possession; then, if on rich and deep soil, the crop will last and do well for eight or ten years; but this prevents the land from being brought into any system of rotation, which is now the rule with nearly all British farmers. Besides the amount of time and labor required for its growth, Lucerne will thrive only on very deep and rich soil, with a porous subsoil quite free from water. The root of the plant is like that of red clover, but much longer, penetrating to the depth of four or five feet when fully grown.

Apprehension has been expressed that the Alfalfa (Lucerne) may not endure the winters of our northern climate, and this may possibly be true of such winters as that of 1872-73, or when the mercury sinks to 20 or 30 degrees below zero, with very little snow; but in all ordinary seasons I should have no fears on this point, as I have read of its being grown successfully in New England. Mr. Colman, in his "European Agriculture," after speaking of the value and use of Lucerne in England, refers to the successful culture of it by the late John Lowell, Esq., near Boston. Mr. C. also gives the experience of an English farmer named Rodwell, who sowed eight acres of Lucerne in drills, with barley, in 1838 and in 1841, the fourth season's cutting, commencing cutting the 24th of May; it furnished the entire support for thirty horses for six weeks; then the second mowing, commencing the 3rd of July, fed twenty horses for six weeks; and the third cutting, beginning the 15th of September, kept thirteen horses fourteen days, after which the autumnal feeding of sheep was equivalent to the cost of cleaning the crop the previous spring—which was done with a peculiar kind of harrow—and this needs to be repeated every second year, if the soil is inclined to grass. In this case the soil was sandy, with a dry subsoil of sandy loam, and the crop was manured each year with a dressing of thirty bushels of soot per acre. The quantity of seed used was twenty pounds per acre.

INDICATIONS OF SHALLOW CULTURE.

Now is the time to observe and draw conclusion to this matter. Walking over some farms lately, I as usual, probed the depth of cultivation with my stiff walking stick, and generally found what I expected. Here is a field of wheat which looks promising when the first shoot made its appearance, but now the side or tilled leaves are weak, puny, and as though the plant had to come to a standstill. I said to my friend who farmed the land, Here is a case of a hard or a concreted bottom under a very thin cultivation. In goes my stick, and, as I expected, 2½ to 4 inches an impenetrable resistance is offered. On taking up the wheat plant its roots had already reached the hard subsoil on which every shower rested, and where the roots could not penetrate, and yet this field was called high land not requiring deep cultivation or drainage! Some 40 acres of my land were of a similar character, small stones binding the undisturbed subsoil into a sort of hard pan or concrete; so thirty years ago I opened the land with plow drawn by three horses abreast, a long iron plough drowr by six strong horses following in track of the first plow and loosening and breaking up the concreted subsoil without bringing it to the surface, so that the roots of plants could descend and permeate freely and safe from drought, frost, &c. Never was money better expended than to such an operation. I got into another field of wheat looking broad in the leaf, healthy, and tillering, and I knew at once that the wheat roots had free access to a considerable depth of soil, at a depth of 9 to 10 inches (15 or 20 would be much better); in fact it comes to this (and the stick will prove it), that three fourths of the land of England are, so far as cultivation goes, in a most unprofitable and improper condition. Manure is comparatively wasted on such shallow-ploughed soils, and most of them are hard-bottomed, as may be at once found by a stick in moist weather. Liebig insists upon the necessity and advantage of rendering the passage of of plant roots easy and unobstructed. How deep do roots go! Have we examined the subsoil and satisfied our minds on this point—I am afraid, too often, we have not, otherwise shallow cultivation would soon be at a discount. Roots of wheat and many other plants descend several feet where they are permitted to do so, either by the natural condition, or disturbed condition of the subsoil. I know an instance of a parsnip sending its roots down 13 feet 6 inches in a mass of loosened soil which had become detached and fell into a clay pit. The root broke off at that depth, leaving an additional length. One can easily tell when and where the soil needs deepening, by forcing our stick down in moist weather. My thin sown wheat branch and thicken because their roots have a free access to a deeply-moved and well-drained subsoil. They do not "go to Halstead fair" early in May, and forget to come back again. A deep disturbance of the subsoil lasts for several years—about once in six or eight years it is desirable to repeat it.—In two of my fields of wheat half a bushel drilled per acre, in 9-inch rows, seem quite thick enough, and as harvest approaches it will no doubt be difficult to discover or distinguish these from thick sown. —*J.J, Mechi, Tiptree, Eng.*

AGRICULTURE 1860-70 IN UNITED STATES.

Coming now to the general department of agriculture, we find as has been said an increase of eighteen per cent., being almost precisely the rate of increase in the whole of reported occupations. In point of fact, however, this denotes a relative decline, though not excessive, in this department of industry, inasmuch as the division of labor and the use of labor-saving machinery cannot, in the nature of things, be introduced into the operations of agriculture to anything approaching the extent which the conditions of manufacturing industry allow; and consequently agriculture, to maintain the same relative share in the production of any country, should call a steadily increasing body of laborers. The causes which have produced this result are not remote or obscure. When it is considered that the staple report product of Northern agriculture are little, if at all, higher, even on the seaboard, than before the war, while the articles which the agriculturist has to purchase for consumption in his business or in the support of his family, have been increased in price from forty to eighty per cent. In the interval when moreover it is considered that the corn, wheat, pork, or beef thus produces at disadvantages, one-third one-half or two-thirds, according to the bulk or location, must go to pay the charges of transportation from farm to tide water, it will not seem strange that, despite our extraordinary agricultural endowment, this great department of industry should have made such scanty increase during the constitutional decay just closed. Indeed, it is probable that the discouraging of American agriculture, with the currency having no value in the commerce of the world, have positively depleted this branch of industry in some degree, but for the fact that a large portion of the farmers of the Western States are held more in hope of the future than for present results, their owners added through all hardships in the confidence that the general growth of the country around them will in time make them independent and even wealthy; putting meanwhile as much of their labor as is consistent with the immediate support of their families, into permanent improvements and increase of stock.—*Gen. F. A. Walker, Supt. of the Census, in Journal of Social Science.*

ADVANTAGES OF THE TURNIP CROP.

Turnips in Britain have supperceded the old-fashion fallow, and for this reason are often called a fallow crop. What an immense gain there must be in permitting no land to be idle. Experience has shown that it is highly advantageous to raise alternately a deep-rooted plant like the turnip and a surface-rooted crop like wheat and other grains. The deep-rooted plants draw up from the lower strata of the soil valuable nutriment, and leave a portion of it on the surface, where it can be readily reached by the shallow-rooted plants. Moreover, the broad turnip leaf attracts and absorbs moisture and fertilizing material from the atmosphere, which it returns to the land, along with the nutriment obtained from the subsoil, in the form of manure. The clean and high culture necessary to this crop rids the soil of weeds leaves it well mellowed, rich and in the best possible condition for a grain crop. Turnips furnish a welcome, wholesome, nourishing green food for stock at a time of year when there is nothing else of the kind to be had. Growing stock will do better on straw and turnips than on hay alone. The manural value of the straw is greatly increased thus, when its decomposition is hastened by the pectic acid of the turnip. Hence to mix turnips and straw is an excellent method of feeding. It is not the least advantage of this crop, that it may be attended to after the hurry of the spring's work is over. Our season is a hurried and short one. Swede turnips do well put in the middle or latter part of June, and the white varieties in July.

THE ENGLISH PRACTICE.

The recent sales of leaseholds in Ireland, one farm of 26 acres—how is that for a farm?—with a lease nine years to run, was subjected to an annual retal of £58 9s. 4d.—something near $300 American currency—equal to nearly $12 per acre. The leasehold of the farm sold for £305. Dividing this over the whole period of nine years, and allowing nothing for interest it would bring up the annual rental to $17 per acre. Another leasehold—length of leasehold not given—of 47 acres subject to yearly rent of £143 1s. 3d. was sold for £620. Assuming this lease had ten years to run, and the annual rental amounts to about $21 per acre in gold. This rent, and taxes, etc., these farmers have to pay in Ireland, and yet they pay it and grow rich, many of them. They do it by paying the greatest attention to live-stock, securing animals which will feed the best, mature the earliest and bring the highest price in the market, and maintain ing as many upon the farm as it will carry with profit. They make money feeding the stock to start with, and the manure it gives them secures the most marvellous yields of cereals and roots. They would grow poorer year by year, and starve with the land, if they followed the shiftless practice of many American farmers in selling the bulk of their produce in the gross form. They do nothing of this, but buy and feed upon the farm as much food grown outside of it as they can, even sending to this country for oil-cake and meal which we had better keep at home.—*National Live Stock Journal.*

SOIL EXHAUSTION—DOES PLASTER PAY?

I remember some thirty years ago, the farmers used to sow new ground or Summer fallow for wheat. The average crop was from twenty-five to thirty-five bushels per acre. Then they would plow the ground three times, and sow about ten to twelve acres each, but now-a-days the same farmers double crop in from thirty to fifty acres, after barley and oats, as they can cut it with machinery and get from sixteen to twenty bushels per acre, and impoverish the land in that way.

There is one thing should be remembered, that frequent seeding with clover and plowing under when about six inches high, will keep the ground in good condition—it being almost impossible to make barn-yard manure enough to keep a farm up. Timothy sod is not worth much as a manure. Ground should not be cropped more than twice or three times before seeding with clover; no matter if you plow it up again the second year, all the better for the ground. The drouth has baffled the best of farmers for the last two or three years, but we don't expect it to continue, and that is not the fault of the ground.

Another reason why the wheat crop fails is that the country is getting cleared up, and the west wind sweeps so hard that it freezes the wheat out in winter. There should be sheep and cattle enough kept on the farm to eat all the hay, straw, corn fodder and coarse grain also. The ground should be sown often with clover. Meadow lands should be top-dressed in the spring with fine manure, or mulched in the summer or fall, after mowing, with coarse manure or straw. Do not mulch meadows in the spring, for it will rake up in mowing time and make a bad quality of hay. I have mulched meadow land after haying, and the grass on the land that was mulched was from two to three inches higher in the fall than on the land that was not mulched. Plow in clover sod often, and keep plenty of stock, and the farm will improve instead of showing soil exhaustion.

Does sowing plaster pay? Plaster will pay on corn, potatoes and clover, but on winter wheat, barley, oats and old timothy meadows, it is worthless. I have experimented on plaster for 25 or 30 years, and never have received any benefit from it except on corn, potatoes and clover. I have sown plaster on winter wheat in the spring, and could not see any difference in the wheat, but could see a great difference in the young clover that was sown on the wheat. There are often streaks through the grain fields, caused by plowing, that are said to be caused by plaster. I have had them pointed out in my own grain fields, where there has not been any plaster sown in four years.—*J. A., in New York Times.*

NORTHERN PACIFIC LANDS.

Gen. Hazzen, writing to the New York *Tribune* about the lands of the Northern Pacific Railway, says:

"Respecting the agricultural value of this country, after leaving the excellent wheat-growing valley of the Red River of the North, following westward 1,600 miles to the Sierras, excepting the very limited bottems of the small streams, as well as those of the Missouri and Yellowstone, from a few yards in breadth to an occasionnl water-washed valley of one or two miles, and the narrow valleys of the streams of Montana already settled, and a small area of timbered country in north-west Idaho—probably one-fiftieth of the whole—this country will not produce the fruits and cereals of the East for want of moisture, and can in no way be artificially irrigated, and will not, in our day and generation, sell for one penny an acre, except through fraud and ignorance; and most of the land here excepted will have to be irrigated artificially. I write this knowing full well it will meet with contradiction, but the contradiction will be falsehood."

REDUCING BONES.

Mr. Potter Warren, of New Hampshire, at a recent agricultural convention, gave the following easy and cheap method of reducing bones. If the farmer will set aside a cask, in some convenient place, for the reception of bones, and throw all that are found on the farm into it, he will be likely to find a collection at the end of the year that will prove a valuable adjunct to his manure heap:

"Place them in a large kettle, mixed with ashes, and about one peck of lime to the barrel of bones. Cover with water and boil. In twenty-four hours all the bones, with the exception, perhaps, of the hard shin-bones, will become so much softened as to be easily pulverized by hand. They will not be in particles of bone, but in a pasty condition, and in excellent form to mix with muck, loam or ashes. By boiling the shin-bones ten or twelve hours longer, they will also become soft."

IMPROVEMENT OF SOILS.

It is not alone in the variety of her industries that England has achieved a proud position. The perfection of her agriculture teaches us the stern demands of necessity, which have been hers and will soon be ours. England, with a soil inferior to ours, and long worn by a culture far removed from skill and thrift, now produces often sixty bushels of wheat to the acre, while ours is scarce a fourth of that amount. But her system has taught her to buy our corn, oil-cake and bones, with which to recuperate her worn soils, while we are grumbling because we are not able to still further deplete our wealth because of the cause of carrying it away! She finds her market at home, and agriculture prospers; we find ours across the ocean, and must bear our part of the burden of transportation, which is always enough to absorb the profits on our labor. May we learn soon that the nearer the producer and consumer are to each other the better for both, and that the interest of agriculture and the mechanic are inseparably interwoven.—*Iowa Homestead.*

PUMPKINS AMONG CORN.

Almost all "old-fashioned farmers" take off a crop of pumpkins from their corn-fields, much to the annoyance of the theorist, who demonstrates to his entire satisfaction that the one crop must detract from the full force of the other. But the most careful experiments show no loss to the corn. The same weights results from an acre, without the pumpkins. It does at first thought seem as if it ought not be so. If it takes just so many bushels of corn to fatten a hog, it is not clear how we are to fatten two from the same quantity. This is the argument of the theorizer.—But the facts are as we have stated; and the reason probably is, that the pumpkin and corn feed on entirely different foods in the soil, so that the one can go on without the other.—*Western Rural.*

The Duke of Sutherland owns a three-year old ox which weighs 2,500 pounds, and measures in girth nine feet one inch. It was recently on exhibition in Inverness, Scotland, and attracted much attention.