

If there were such a variety sown as to give a constant succession of growth, the pasture would always be green, where there was sufficient to support growth. This is not always the case in the United States, and especially in the West. Our annual drouths of July and August are terribly severe on both meadows and pastures. Nevertheless, we believe it will be possible, with care in the selection of the proper grasses for sowing, to have pastures, if not of English greenness, at least such as will compare measurably therewith, except for about a month in the heat of Summer.

As showing the great value of mixed grasses for pasture, it will not be out of place, though this has been heretofore discussed in the *Western Rural*, to note the fact that a single square foot of very rich natural pasture in England has contained 1,000 plants, 640 of them being natural grasses, and sixty of them clover and other plants, the whole number including twenty varieties. Another meadow, irrigated and otherwise carefully managed, contained, in a square foot of sod, 1,702 plants of natural grasses, and ninety-six of clover and other plants.

Again, of showing the necessity of thick seeding, a mixture of twelve varieties of grass, aggregating forty pounds per acre, gave according to Flint, on "Grasses and Forage plants," the enormous number of 54,000,000 seeds, or about nine per square inch. Consequently, to produce the number of plants given in the case where 1,798 plants were found per square foot, we should be obliged to sow about 25 per cent. more seed than forty pounds per acre. From this it is safe to say, first, we sow too little seed for permanent pasture, and also, as a rule, we sow too few varieties.

The following is a list of grasses that it would be well to experiment with for permanent pasture in the West, which we give in the order of their ripening, and with the number of pounds per acre to be sown in the mixture. They are: Sweet scented vernal grass, one pound; Orchard grass, seven pounds; Meadow foxtail, two pounds; Meadow fescue, three pounds; Kentucky Blue grass, five pounds; Redtop, four pounds; Italian Rye grass, three pounds; Timothy, six pounds; Red clover six pounds; White clover, three pounds. This would give forty pounds per acre, and the principal grasses sown are known to be well in the West. If the object be to produce a thick, matted sward as quickly as possible, the red clover may be omitted, altogether it is possible that this grass would soon be crowded out, in any event, and the pasture would eventually consist of those grasses most suitable to the soil and climate.

If the pasture be much shaded with trees, Blue grass, Orchard grass, Rough-stalked and Wood meadow grass and white clover should predominate, with perhaps some Alsike clover. Whatever the kind sown, if a first class pasture is intended, as soon as the sod gets firm enough to bear the tramping of hoofs, it should be closely fed, and kept rich, but never allow it to be tramped when in a soft and miry state as is the case early in Spring and sometimes after long continued rains. — *Western Rural*.

#### THE WAR AGAINST WEEDS.

Dr. Macaulay, who made "a tour of observation in Ireland in 1872," declares that the amount of weeds in the country is a national disgrace. Fields and road sides are alike neglected, and he is sure it is no exaggeration to say that the direct annual loss from this cause alone is about a million and a half sterling. It appears that an effort is made of late to remedy the evil. The secretaries of the National Education Commission say that their inspectors will be directed to see that instructions are given to the half million children attending national schools as to the necessity of destroying all weeds found on the farms of their parents, or the adjacent highways. The officers of the Church Society, who superintend the education of 70,000 children in Ireland, make a similar engagement.

This is a different way from what our people would go to work. We should petition the Legislature to enact a law against weeds, and after a year or so wonder why some one did not prosecute somebody for having weeds contrary to law.

After all, we do not know but the Irish are taking the wisest course of educating the people to understand that their self-interest lies in their own personal destruction of weeds. Our own country is in itself an evi-

dence of the great power of this intellectual force. It has been remarked by travellers in other European countries, as well as by Dr. Macaulay in Ireland, that weeds prevail to a much greater extent in Europe than in America. Here we have in almost every farmhouse, where there is any pretensions to intelligence, an agricultural paper, and in almost every district there is a live agricultural society or farmer's club. Here, and in this way, farmers learn in what consists their true interests, among which they soon find out it is not the permission of weeds to occupy their land. Hence we see so much more clean fields than is usual in Europe; and we think we may say that there is annually an increasing care taken in regard to their extermination.

This is undoubtedly the best weed eradicator. Let there be a continual agitation of the subject. Let every one know how much they lose by weeds, and how easy they are kept down by the "stitch in time" system, and we shall do more to put down weeds in ten years than any prohibitory law would do in a hundred. — *Forney's Weekly Press*.

#### VEGETABLE MANURES.

"The importance vegetable mould to be used in conjunction with fertilizers was tested as follows: One row with enough mould from the woods to half fill the furrow, with ammoniated phosphate at the rate of 220 lbs. per acre, made 990 lbs. of seed cotton. The fertilizer without the mould made 742 lbs. the natural soil, 432 lbs. The fertilizer with the vegetable mould, made 128 per cent. on production without it, only 71 per cent.; showing that the presence of organic matter in a soil adds much to its productions when fertilizers are used.

"The importance of husbanding the vegetable matter of the soil, cannot be impressed too often or too deeply on the cultivators of the soil. Where a good crop of grass, weeds or of pea-vines or other plants have decayed in a soil, there is enough of all the mineral substances left in an available condition, except phosphoric acid, to make a fair crop of any of the farm products. One thousand lbs. of grass decomposed in the soil will furnish four times as much potash as will be required to make one thousand pounds of corn or wheat, and half enough phosphoric acid, with quite an overplus of all the other mineral substances. The straw of the cereals will furnish more than enough of every one of them except magnesia and phosphoric acid; nearly enough of the former, and one fourth of the latter. To make peas there are enough of all the minerals in grass, with quite an overplus, except phosphoric acid; just half enough of this, and double enough of potash. Pea-vines furnish a superabundance of potash and lime, to make both corn and peas, in fact of every mineral substance except phosphoric acid. There is about half enough of this to supply the demand. There is a sufficiency in grass to make the seed and fibre of cotton, of all these substances except magnesia and phosphoric acid. The stalks of cotton will also furnish enough of all the mineral food except potash, magnesia and phosphoric acid. These three are quite deficient. Thus allowing that the stalks of cotton left in a field weigh as much as the seed taken from them, for every thousand pounds there will be taken away eight pounds of phosphoric acid in the seed, more than is left in the stalk; ten pounds of potash and six pounds of magnesia. And when it is remembered under our system of clean culture, the cotton stalk is about all the organic matter left in the field, and the cattle take off a good portion of this during the winter, it is not wonderful that our lands deteriorate, our crops rust and purges remain empty. The inference is clear from the above facts, that a good crop of grass and weeds, or other vegetable matter covered in the soil and properly decomposed, will furnish a sufficiency of all the mineral substances, to make a good crop of corn, cotton, or peas, except phosphoric acid, and gradually of its potash and its magnesia: That in a system of rational agriculture, it is quite as important to husband the organic matter of the soil as it is to apply fertilizers of any kind: That one of the most important processes for obtaining soluble mineral food for plants, is to furnish the land with vegetable matter by a proper rotation of crops: That the mineral substances of plants become, in the very process which dissolves them, available for a succeeding generation of vegetable growth, by the extreme mechanical fineness to which they are reduced, and the

action upon them of the ammonia and carbonic acid, especially from their albuminoids during the process of decay. — *Dr. Pendleton*.

#### LIME AND CLOVER.

Of all plants none seem more dependent on lime than clover, and it will not grow on land destitute of lime. We find by analyzing the ash of clover that of its inorganic or earthy parts there is 25 per cent. of lime, 27 of potash and soda, 6 of magnesia, 3 of chlorine, 5 of silica, 25 of carbonic acid, 6 of phosphoric acid, and three per cent. of sulphuric acid. Thus we see that lime, potash and soda predominate largely in the earthy part of clover. The carbonic acid is supplied by the atmosphere in abundance. From the peculiar habit of the clover plant, it draws its nourishment from sources not available to other plants. Its fibrous and deep penetrating roots search for food to a depth not attained by other plants, while its numerous and broad leaves drink in its organic constituents from the atmosphere, shading the ground from the decomposing rays of the sun and concentrating near the surface of a mass of those very elements needed for the succeeding crops, and the kind and quality more than sufficient to supply their wants. — *American Farmer*.

#### THE FARM.

Experiments have recently tended to prove that the roots and grains, by being planted much further apart than is usual, will actually yield larger crops than are now obtained. This has been shown to be the case with potatoes, and more recently with wheat. It has been found that the wheat plant increases above the ground in proportion as the roots develop without interference with those of its neighbors. In our experiment wheat thus treated, furnished ears containing one hundred and twenty grains. It was found in the course of the same experiment that on every fully developed plant there is one ear superior to the rest; and that each ear has one grain which, when planted will be more productive than any other. By selecting, therefore, the best grains out of the best ear, and continuing this experiment through several generations, a point will be reached beyond which further improvement is impossible, and permanent type remains at the final result.

#### SPRING PLOUGHING.

It is certain that land ploughed in the autumn will, all other things being equal, yield better than that broken in spring. This is partly because thorough aeration of the soil is essential to its fertility, partly because the frost has free action to break up the minute minerals and hasten their disintegration and the consequent liberation of mineral elements of fertility and partly because in the loosened earth the surplus water drains quicker away, and the warmth of the sun penetrates sooner and deeper. But many fall ploughed fields are so situated that surface water collects in hollows, and thus nullify all the rest; carefully drawn open furrows for such places should be the subject of first work in spring. In newly ploughed land run the furrows in such a direction as to facilitate drainage, and run the shovel as deep (and no deeper) as it can go without turning up the cold, unfertilized and lumpy subsoil. It will pay.

#### CONDITION OF WINTER WHEAT.

From the Ag'l Report of April and May, we glean the following: Four-tenths of the wheat sown in the United States is winter wheat. The crop is more promising this spring than for several years past, at some season. In one-fourth of the countries in the Ohio Valley, an unpromising appearance is reported. The reports from Missouri and Kansas are less unfavorable. New York reports a good appearance and every county in New Jersey reports excellent. Pennsylvania reports but four counties unfavorable, and Delaware says one-half better than last year. And so it goes over the states—but few localities reporting adversely. In summing up the evidence in favor of drilling instead of sowing, the former has it by the least ten per cent. The proportion of spring wheat sown is about 40 per cent. of the whole crop. It is grown mainly in Wisconsin, Minnesota, and Iowa. One-third of the crop in Illinois is spring. Forty per cent. of the whole crop in the United States is drilled in, and nine-tenths of the testimony favors the

drill. Five million bushels could be saved annually, by the exclusive use of the drill. — *National Agriculturist and Bee Journal*.

#### SOOT AS A FERTILIZER.

I have a considerable quantity of soot, which I have saved. How should I apply it as a manure? — *E. E. Delavan, Wis.*  
Soot is said to be an antidote for smut; soot is largely consumed in carbon, and contains, also, a considerable quantity of nitrogen, besides salt and lime, potash, soda and ammonia. 100 pounds of soot have been estimated as equal to one ton of cow dung. It is especially valuable as an application to work off the attacks of insects, and may be sown with profit in the garden, or in fields infested with these pests. It is also efficacious mixed in the proportion of six quarts of soot to a hoghead of water, for watering flowers and other plants, enhancing their bloom etc.

#### SEED WITH CLOVER.

Some timely hints relative to the sowing of clover were given at a meeting of a farmers' club in Scotland. The speaker said that owing to the small size of the seed a large proportion of them are buried too deeply and fail to germinate. It has been found by experience that the greatest success with red clover is attained when the seed is covered with only half an inch of soil; when covered one and a half inches deep fifty per cent. of the seeds germinate, but at the depth of two inches not a single plant appeared. When clover will show above the surface if the seeds are covered one and a half inches deep, and at three quarters of an inch only fifty per cent. of the seed produced plants. It is necessary therefore, to prepare carefully a soil for clover, and to sow and cover it with discretion. Rolling helps to secure a fine seed bed, and consequently an even distribution.

#### SALT AS AN AID TO MANURE.

About five o'clock one fine summer's morning, I noticed that, where the salt had been sown the previous day, every grain of salt had attached to itself the dew, and formed on the surface a wet spot about the size of a sixpence, the ground being generally very dry. On our light lands it consolidates them and makes them especially firm and acceptable to the wheat plant, whose straw will stand firm and erect, although four and a half to five feet long. It is also unfavorable to certain weeds by this consideration. It prevents the ravage of wire worm. It is especially favorable to saline plants, such as mangolds, whose ashes contain fifty per cent. of salt. I never sow guano, except mixed with its own weight of salt. Like everything else, it has, I am sorry to say, greatly risen in price. I observe that all crops seem to thrive well on land near salt water, especially where the land is drained. — *Western Rural*.

#### PERMANENT SEED CORN.

John B. Sands, at the New York Farmers' Club, said: I always soak my corn in tepid warm water, in which I dissolve about one pound of saltpetre to two gallons of water, for eight or twelve hours. I do this so that the corn will taste of saltpetre; then draw it off and roll in land plaster. No wise crow, or crow black-bird, chipmunk or any other insect will pull up more than two or three grains before leaving it disgusted. I have tried it for eight years. While two of my neighbors had, last year, their corn pulled badly, mine was not touched. Smoke is next best thing to keep crows away, but the crow and blackbird do not care for it.

IMMIGRANTS FOR MUSKOGA.—The steamer Nipissing, on her first trip to Bracebridge, took up forty immigrants, who intend to settle in the township north of that place.

GOOD PRICES.—At the sale of entire draught horses at Mr. John Thompson's, Pickering, "Earl" was sold for \$1,750; "Prince of the West," for \$2,600; "Lorne" for \$3,075, and "Time O' Day" for \$1,575.

A Western paper says dealers in butter classify it as wool grease, cart grease, soap grease, variegated tasselled cow grease, boarding house breakfast inferior tub, common tub, medium roll, good roll, and gilt-edge roll. The terms are strictly technical.