

FARM AND FIELD.

BARE FALLOWS.

Prof. Caldwell, in a recent contribution to the *N. Y. Tribune*, shows that there is a constant tendency in a well-tilled soil, bare of vegetation, and in which the air has free circulation, to the passage of nitrogen in any of its forms of combination into the final form of nitrates. This is alike the case with organic matter—as stable manure, bone meal, animal refuse, and the remains of former vegetable growth; or in the more valuable, because more soluble, form of ammonia. In the form of nitrates, large quantities of nitrogen pass off in the drainage, when the land is in a bare fallow state; but when vegetation is growing on the surface, much less nitrate is found in the drainage water. Considering the loss of time and crop while the land lies fallow, and the loss of fertility by the leaching away of nitrogen in the way described, the Professor thinks there is good reason for the doubt many entertain whether bare fallows are profitable at all, and whether prudent farming does not require that some crop should always be growing on as large an area as possible, and on every foot of tilled land. The waste from the soakage away of nitrates is greater during a wet season than a dry one. In a year of average rain-fall, with a drainage of 9.8 inches of water, Mr. Lawes estimated that from a bare fallow plot thirty-two pounds of nitrogen per acre would be carried off. This, if replaced by commercial sodium nitrate, would cost at present rates about \$8. We are glad to find our views as to the impolicy of bare fallowing sustained by the patient and thorough investigations of such eminent agricultural scientists as Prof. Caldwell and Mr. Lawes.

Observant practical farmers have arrived at the same conclusions. In the last issue of the *Country Gentleman* a correspondent of that journal discusses this very subject, and shows the superiority of green crops, even if only raised for manurial purposes, over fallows, because they "catch and hold the nitrates that would otherwise be washed away." This writer considers clover the very best of all the green crops for this purpose, especially because it has long and deep feeding roots, which reach down and seize upon the partly escaped food elements, bringing them back to the surface, where they are stored in the roots and decayed leaves of the clover.

BLACK WALNUT CULTURE.

At the meeting of the Indiana State Board of Agriculture, Mr. W. H. Ragan read a paper on the black walnut, in which he gave the following directions for planting and cultivating: Prepare your ground by breaking and harrowing in the fall. Furrow it off each way as you would for corn, except that the rows should be about seven feet apart. Take the nuts fresh from the tree; it is not necessary that they should be hulled; placing two nuts in each crossing. This is to insure getting a good stand. The nuts should be covered very shallow—just enough earth to hide them. In the spring the land should be furrowed off midway between the rows of nuts, and the spaces planted with corn or potatoes. Cultivate as you would a corn crop by cross ploughing, being careful to give the young trees a fair chance and good clean culture. The second spring thin out your plants to one tree to the hill. If there are spaces entirely missing, they may be filled by transplanting from the hills containing duplicates. The second and perhaps the third year it will pay to plant corn between the rows, after which the trees should be regularly cultivated until they fully occupy the ground so as to keep down by

their shade all weeds and grass. The period at which cultivation may be discontinued cannot be definitely stated, as much will depend on the character of the seasons and the quality of the soil. Of course seven feet each way will be too close for permanent trees, but as they will protect each other when small, and make much better growth, it is preferable to have them closely planted. When they begin to crowd, the alternate tree in each row may be removed. The trees thus removed will be of sufficient size to be useful in various ways on the farm. A second thinning will in a few years be necessary, taking the alternate trees the other way. Your permanent trees will now stand fourteen feet apart each way, a sufficient distance for a number of years, though not for large trees, but the thinning will always pay a large percentage on the value of the ground occupied.

THE FARMER.

The king may rule o'er land and sea,
The lord may live right royally,
The soldier ride in pomp and pride,
The sailor roam o'er ocean wide,
But this, or that, whate'er befall,
The Farmer he must feed them all.

The writer thinks, the poet sings,
The craftsmen fashion wondrous things,
The doctor heals, the lawyer pleads,
The miner follows the precious leads,
But this or that, whate'er befall,
The Farmer he must feed them all.

The merchant he may buy and sell,
The teacher do his duty well,
But men may toil through busy days,
Or man may stroll through pleasant ways,
From king to beggar, whate'er befall,
The Farmer he must feed them all.

The farmer's trade is one of worth,
He's partner with the sky and earth,
He's partner with the sun and rain,
And no man loses for his gain,
And men may rise, or men may fall,
But the Farmer he must feed them all.

The farmer dares his mind to speak;
He has no gift or place to seek;
To no man living need he bow;
The man that walks behind the plough
Is his own master, whate'er befall;
And, king or beggar, he feeds us all.

God bless the man who sows the wheat,
Who finds us milk, and fruit, and meat;
May his purse be heavy, his heart be light,
His cattle and corn, and all go right.
God bless the seeds his hands let fall,
For the Farmer he must feed us all.

—Lillie E. Barr.

MANAGEMENT OF PASTURES.

To be kept in the best condition through the summer, pastures need some special attention during the present portion of the season. We rarely see, even in those fields which are allowed a liberal growth of grass instead of close grazing, that evenness, uniformity of surface, and dense luxuriance which should characterize a perfect pasture. Cattle select and gnaw down the sweetest and most palatable patches of grass, and allow other spots to grow up, form seed heads, and yield coarse and woody herbage. If the field has been newly seeded, certain weeds spring up and deface the surface; or in old fields certain other weeds are seen. The weeds and the hard and dry seed-stalks of grass prevent the cattle from grazing beneath them, and thus a considerable portion of the field is lost.

There is a very simple and easy remedy. Set a reaping machine so as to cut eight or ten inches high, and sweep over the field as soon as the heads of grass have pushed out, and before the seed has formed. The machine will thus shave off all that ought not to remain, and the soft herbage below will be easily reached for the grazing of the animals. The whole surface will present a uniform appearance. Weeds will not shade or injure the sweetness of the grass below them. The seed-heads will be cut off before they have exhausted

the roots. Such a pasture will present a green and fresh appearance much longer in the summer than with a growth of dry grass and dead weeds. This practice is to be recommended more particularly on account of the little labour and expense required for its thorough performance, the only cost being a man, team, and machine for one day, to go over ten or fifteen acres.

There are, of course, other important requisites for good pastures. Land which is not rich enough to raise heavy crops of corn will not give heavy crops of grass. A meadow yielding only half a ton of hay per acre, will not yield more feed when trodden and grazed by animals. Poor land must be made rich whenever an opportunity occurs. A light grass field, if well manured in autumn, turned over the following spring, and planted and well cultivated with corn, and in a year or two seeded down on a crop of winter wheat or rye which has had a finely-pulverized top-dressing of manure after the last ploughing, will probably be at least doubled in the quantity of grass it will yield; and the top-dressing just mentioned will insure a more even and dense growth of the new grass.

It is not, however, always necessary to plough, plant, and seed down in order to get an increased crop of herbage. Top-dressing with manure in autumn, for the autumn, winter, and spring rains to wash in among the grass roots, will give the crop a vigorous start. This treatment is particularly applicable to strong or heavy soils. If the field has been seeded in patches, the manure which remains on the surface may be finely pulverized with a sharp-tooth harrow early in spring, a new sowing of seed given and brushed and rolled in. A repetition of this top-dressing in subsequent years will make a rich pasture of a poor one.—*Country Gentleman*.

PLANT FOOD IN AN ACRE OF CLOVER.

Let us see what is the actual value of red clover as an accumulator of plant food, and compare its treasures with the demands of other crops, or more especially with wheat, which has little power of accumulating plant food for itself.

An acre of good clover will make 5,000 pounds of hay, containing 282½ pounds of mineral matter, or ash. In this ash will be 97½ pounds of potash, 96 pounds of lime, 84½ pounds of magnesia, and 28 pounds of phosphoric acid. The hay will also contain 108 pounds of combined nitrogen. These are the stores of available material which an acre of red clover can offer to any succeeding crop when it is ploughed under the soil, and is also available material which an acre of clover sod is capable of furnishing to a succeeding crop when a clover sod is ploughed up, for it is found that the scythe leaves to the field as much material, both organic and inorganic, as it removes in the hay it cuts.

Let us suppose that for every bushel of wheat we raise we have 100 pounds of straw, and on this basis from the average composition of wheat and its straw, let us estimate how large a crop of wheat and straw we may have furnished in each of the leading manurial elements contained in an acre of clover hay or clover sod.

In two and a half tons of clover hay, or in an acre of clover sod of corresponding quality, there will be, both for grain and straw, enough phosphoric acid for a crop of 84 bushels of combined nitrogen for 71 bushels, of potash for 102 bushels, of magnesia for 120 bushels, and of lime for 270 bushels. In other words, the clover hay or sod contains enough phosphoric acid for more than double an average crop, enough nitrogen for more than four average crops, and potash for more than six average crops of wheat! With such figures before you, do you wonder that