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OLD SERIES]

*Nec arancorum sane textus ideo melior, quia ex se fila gignunt, nec noster vilior quia ex alienis libamus ut apes.*

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## Agricultural Journal.

From the American Agriculturist.  
AGRICULTURAL CHEMISTRY.

When a field is kept under cultivation from year to year, without the application of manure, the crops continually decrease, until at length, the land refuses to yield a return sufficient to repay the expenses of tillage. The reason of this deterioration is obvious. Plants, you know, extract a part of their nutriment from the soil, and but a small proportion of the soil consists of those ingredients which are capable of ministering directly to the wants of vegetation. Therefore, the land, in a few years, becomes so far exhausted as to be unable to furnish as much food as the crop requires, and it becomes necessary that it should receive a new supply of the matter that has been abstracted. This matter may be directly returned in the form of manure, or the lost fertility, may, in a measure, be restored by allowing the land to lie idle for one or more years. This last method is termed *fallowing*, of this I now purpose to treat.

Of fallowing, there are two systems—one called *naked fallowing*, consisting in ploughing the fallow land repeatedly, without cropping, thus leaving it naked, and exposed to the full influence of the sun, air, and moisture, until it is supposed to be sufficiently recruited to produce a remunerating crop. The other method is to sow on the ground a fallow crop, (usually clover or buckwheat,) which is afterwards ploughed into the soil. If buckwheat be sowed, it is ploughed in when in blossom, and left to form a bed of humus. This mode is sometimes called *green manuring*. But the more common, and in most cases the most judicious way, is to put clover on the field, which needs fallowing, and leave it for two or three years pasture. By this means, the field, instead of lying idle, yields a profitable return; all benefit ordinarily derived from fallowing is obtained; a firm sod is made, which, when turned over with the plough forms a fine bed of humus, and the fertility of the soil is restored to a remarkable degree.

This method has almost entirely superseded the old one of naked fallowing, and is decidedly preferable, in most cases, though circumstances may occur where the other can be more judiciously practiced. Thus stiff, argillaceous, (clayey) soils, are often very materially benefited by repeated ploughings while lying fallow, as by this means the hard lumps become divided, air and moisture are freely admitted, and the land thus becomes well prepared for sustaining a vigorous growth of vegetation.

While all are willing to admit the advantage of a fallow, all are not agreed as to the manner in which these advantages are brought about. The explanation usually given by the unlearned is, that land after producing several crops in succession, requires *rest*, and like a wearied animal, is recruited by repose. But this explanation conveys an erroneous impression, and shows how easily the minds of many are satisfied by substituting a *comparison*, or a *name for a reason*. The term *rest* is certainly very improperly employed when applied to land in the same sense in which it is used with reference to animals. I will endeavor to explain to you, in accordance with the views of some of our best modern chemists, the process which Nature adopts to reinvigorate an exhausted soil.

I told you in a former number, that soils were originally formed by the degradation and decomposition, (crumbling and wasting away) of rocky masses, and that the solid structures were originally composed of the same inorganic constituents as are found in the soil. Now the agency which reduces rocks to the form of powder, does not cease its operations when the change is effected, but continues acting upon the mineral particles until those portions essential to vegetable life are brought to such a state as to be soluble in water, when the roots of plants can readily imbibe and appropriate them as needed.

The progress of this decomposition is slow, and when a field is required to furnish food for a crop every year, for a succession of years, it cannot be furnished as fast as it is needed; the supply is inadequate to the demand; and time is required to allow a new accumulation, or fresh supply. Although the necessary ingredients, or food, may be in the soil, yet it is not in such a form to be available, and Nature refuses to change her laws, or to act more vigorously than she is wont, merely to gratify the inordinate cravings of her creature, man.

And now another question arises—Can a field *always* be kept in a state of fertility by careful fallowing? I reply, it cannot. The soil does not contain an exhaustless supply of those ingredients which our crops require, and though land can be induced, by fallowing alone, to produce abundant harvests for a limited period, yet the time must arrive, when unless manure be supplied, barrenness will ensue. There are, as I have previously informed you, sixteen elements belonging to the plants, twelve of which must be furnished by the soil, and if any one of these which is required, be absent, the plant cannot mature though all other circumstances be favorable. Now, as by far the greater portion of all soils consists of matter which cannot contribute to the growth of plants, and as nearly every soil is lacking in a full supply of every ingredient which our crops require, it is unreasonable to expect perpetual fertility without returning, occasionally, to our fields a portion of those constituents which have been taken from them.

Before closing this article, I will add a few more remarks on the subject of fallow crops, and green manuring. As the crop ploughed into the soil can only return to it the same inorganic ingredients which were drawn from it, we naturally inquire, what benefit can be derived from this source. The question is well worthy of consideration; for it would seem that if land can be thus enriched, it must disprove the theory that the fertility of the soil can only be preserved by returning to it, occasionally, new supplies of the matter which has been withdrawn. But the advantages of this system are only temporary, and may be thus accounted for:—

1. The bed of humus thus formed, improves the texture of the soil: allowing air and moisture to gain admittance, and these agents hasten that final decomposition of mineral particles which fits them for entering the circulation of plants.

2. The green, or fallow crop, draws nutritive principles from the air, especially carbon, and (indirectly) nitrogen, and these becoming incorporated with the soil are ready to aid in promoting the growth of the succeeding crop. (For farther particulars on this point, I would refer you to what I said on the subject of *humus* in my tenth number.)

3. The roots of the green crop, having penetrated for a considerable depth in the soil, lower than the plough has ever reached, have drawn from below such nutritive ingredients as had become deficient near the surface.

These constituents after contributing to the formation of the stalks, leaves, &c., of the fallow crop, are again disengaged and left near the surface when this crop is buried in the soil, and are now within the immediate reach of the roots of the succeeding crop. Clover and buckwheat are well adapted for fallow crops on account of their roots extending to a much greater depth than those of most other cultivated plants.

The effect thus produced, may be compared to that of a very deep or trench ploughing, as in both cases these ingredients, which lie below the reach of most plants, are brought near the surface. The roots also render the hard and compact soil beneath, into which they penetrate, more loose and porous, and thus, as in deep ploughing, the texture is improved to a considerable depth. When after sowing a fallow crop, the land is left for several years undisturbed, we must attribute much of the benefit afterwards ob-

served, to the decomposition of mineral portions, as above mentioned.

J. MCKINSTRY.  
Greenport, N. Y., April 1, 1849.

## AGRICULTURE.

BY C. W. EVEREST.

How blest the Farmer's simple life—  
How pure the joy it yields!  
Far from the world's tempestuous strife,  
Free, 'mid the scented fields!

When morning woos with the roseate hue,  
O'er the far hills away,  
His footsteps brush the silvery dew,  
To greet the welcome day.

When Sol's first beam in glory glows,  
And blithe the sky-larks song,  
Pleased to his toil the Farmer goes,  
With cheerful steps along.

While Noon broods o'er the sultry sky,  
And sunbeam's fierce are cast,  
Where the cool streamlet wanders by,  
He shares his sweet repast.

When twilight's gentlest shadows fall  
Along the dark'ning plain,  
He list his faithful watchdog's call,  
To warn the list'ning train.

Down the green lane young hurrying feet  
Their eager pathway press;  
His loved ones come in joy to greet,  
And claim their sire's caress,

Then, when the evening prayer is said,  
And Heaven with praise is blest,  
How sweet reclines his weary head,  
On slumber's couch of rest!

Nor deem that fears his dreams alarm,  
Or cares with carking din;  
Without, his dogs will guard from harm,  
And all is peace within.

Oh ye who run on folly's race,  
To win a worthless prize!  
Learn from the simple tale we trace,  
Where true contentment lies.

Ho! monarch! flushed with Glory's pride!  
The painted, gilded thing!  
Hie to the free-born farmer's side,  
And learn to be a king!

From the Canada Farmer and Mechanic.  
FARMERS, SAVE YOUR STRAW.

It is a common practice to thrash out a large portion of a wheat crop directly after harvest, by those who live so convenient to market that they can speedily deliver it, so as not to seriously affect the autumn seeding, and other labor on the farm. By thrashing out a pretty large proportion of the wheat crop, so as to push it into market during September and the early part of October, the exporting merchant will have no difficulty in being able to make his shipments and get returns, in the short period of from three to four months, and frequently this may be effected much sooner. When there is a certainty that business may be thus done with promptness, a respectable export merchant will find no difficulty in effecting a loan from our banks, to any reasonable amount, for the purchase of the leading articles of export. That class of customers, from the first establishment of banks in the Colony, have had the preference over all others. This, to some extent, has been advantage to the rural population, who have been unfortunately in other respects, shut out of the money market owing to the peculiar genius of our banking institutions, and the existence of absurd and useless laws on our statute books affecting the legal rate of interest. But bankers, for their own purposes, have conceived it most advantageous to have the principal portion of their capital employed in the purchase of wheat, flour, pork, and lumber, and the farmers have, doubtless, derived benefit from such a policy. This has been, and will continue to be, a much greater advantage to them than at first sight might be supposed. The competition created in our markets, from the superior facilities

for obtaining money to speculate in wheat and flour, and the prospect of immediate returns, induce those engaged in the business to pay the outside value of the article. The Farmers by this means are enabled to get for their wheat full value, and not unfrequently more than it is worth. Besides they derive an advantage from the use of their money at a much earlier period than if those facilities were not held out to them.

With all these advantages, it must not be forgotten that care should be taken to husband the straw made on the farm, as a means of keeping the cattle in comfort during the winter, and for the purpose of increasing the manure heap. Although it may require some little time and trouble to carefully stock straw, yet no careful farmer will neglect this important matter.

From the Scientific American.

## FLAX CULTIVATION AND MANUFACTURE.

Flax and hemp are now grown to a considerable extent in some of the Western States. In 1847, there were imported into New Orleans from the interior States, 2654 tierces of flaxseed, and 1090 barrels of linseed oil. At Cincinnati there arrived by the Miami canal, in the same year, above 43,000 bushels of seed, and 1400 barrels of oil. At Portsmouth there arrived 4600 bushels of seed, and at many other cities in the central and western States, the arrival of flaxseed or oil was proportionately great. The American produce of flax fibre varies from 300 to 1000 pounds per acre; the Irish produce in scutched flax varies from 500 to 900 lbs. the acre. Perhaps the great benefit of flax growing to any country is, that it is a profitable crop agriculturally, and a great source of manufacturing industry. In this point of view, it is a crop far superior to any food crop which could be raised. Flax crop is a source of industry, of skilful labor, or manufacture.

American farmers generally sow their flax too thin. They have a strong stalk and a coarse one, therefore the flax produced is not so fine.

It has been found that 1630 pounds of dressed flax, when converted into cambric cotton handkerchiefs, spun by hand, employ constantly for twelve months 153 women in spinning, 18 weavers during the same period, in weaving it, 40 women in hem-stitching or veining the handkerchiefs. Thus giving in all, employment to 210 persons the year round, arising out of the growth of three acres of one plant useful in manufactures. This does not include the hands that are supported in raising the raw article. What a field for employment in a home market. At present, we could in no shape compete in price with the linen made in Ireland.— French embroidered linen collars and linen cambric handkerchiefs are the beau ideal of grandeur to our fair and gay ones, but the most of these articles come from the North of Ireland, which sell under a French name, and by giving "honor to whom honor is due," we say that they surpass the French goods. Much as has been said of Irish linen, and the fame it has conferred upon Ireland, it was the banished Huguenots of France that first introduced the manufacture into that country. This is one good that religious persecution in another country, did to Ireland.

A very valuable improvement has recently been invented in this State in the preparation and manufacture of flax. The flax is prepared, drawn in a certain state upon the common drawing frame and it is spun like cotton and on the same machinery. In short, the flax is so prepared as to be drawn and finished on cotton machinery; producing yarn far surpassing in beauty any ever produced in the common way and at a great deal less cost, as it dispenses with the use of the Heichel Gill Frame, except merely for spreading the flax into strakes. The linen trade will yet be prosecuted vigorously in the Northern States, for it is not likely that in the cotton manufacture, the North will be able to compete with the South, in 30 years hence.