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AGRICULTURAL.

From the Western Farmer and Gardener.

CULTIVATION OF CORN.

The difference of opinion among farmers as to the best mode of cultivating corn, induced me some years ago, to give some attention to the subject. The reasons assigned, and the experience of many of the best agriculturists, in favor of the system of level cultivation have convinced me that our present mode is not the best, and that it is susceptible of a decided change for the better.

I am perfectly aware, that to question the propriety of the *exclusive use of the plough* in the cultivation of corn will be laughed at, and that to intimate that *the ridging* of a corn field is not the most certain mode of ensuring a good crop will be denounced as mere "*book farming*," and hence entitled to no respect.

The present mode of cultivation is generally, to burn off the stalks and stubble that may be upon the ground—to break up with a shallow furrow—plant the corn without rolling or harrowing the ground—then harrowing the corn while small, and then by ploughing as often as may be deemed necessary. In ploughing the corn, the prevailing and almost universal rule is, to plough close to the corn hills, "to cut the fibres of the roots so as *to increase and strengthen the stalks, as you cut the roots of trees in an orchard by ploughing, to make the tree grow vigorously ! ! !*"—to throw the earth high up on the stalks, and to lay by the crop by ploughing three or four furrows between the rows, that the ground may be well ridged, *so as to retain the moisture about the hills of corn ! ! !*"

The system of culture, that I believe is sustainable by reason and experience, is the opposite of all this.

1. If the ground intended to be cultivated in corn has a sod upon it, it should be broken up in the fall or winter preceding, if the weather is suitable; if not, it should be ploughed in February, or at least in the first week of March. If not level it should be rolled, and if not mellow it should be harrowed before planting.

2. If stubble or corn ground, no stubble nor stalks should be burned or removed, unless taken to the manure pile—should be ploughed six inches deep, and if not mellow should be harrowed.

3. While small, the corn should be harrowed and the ground should be afterwards kept mellow and loose by the repeated use of the cultivator.

4. On sod ground a plough should never be used in the cultivation of corn.

5. On other ground, the plough should never be used, after the roots have extended any distance from the hills, and at no time unless indispensably necessary to prevent the ground from baking.

6. The fibres or small roots of the corn should not be cut; the cutting off of every fibre depriving the stalk of a part of its nourishment.

7. The earth should not be thrown high up on the hills, as it induces the throwing out of additional spur roots. A very slight portion of mould may be put round the hill.

8. The ground in the cultivation of corn should be kept as level as possible, to permit the roots to extend in every direction and to retain moisture. Ridging, cuts the roots—prevents the extension of the surface roots beyond the middle of the rows—drains the water from the hills—exposes more surface to the action of the sun, and is therefore injurious to a crop in a dry season.

My own limited observation and experience, satisfy me of the correctness of the above rules to be observed, in the cultivation of corn, and I now offer the opinions of the ablest and most practical farmers in the United States to sustain the position I have assumed.

Judge Buel, who for good sense—for a thorough knowledge of the science of agriculture, for general intelligence—practical experience—and for a most extensive knowledge and familiarity with the modes adopted by our agriculturists, was unequalled by any man in the United States, in speaking of the cultivation of this crop, expresses the following opinions:

"The after culture consists in keeping the soil loose and free from weeds, which is ordinarily accomplished by two dressings, and in thinning the plants, which latter may be done the first hoeing, or partially omitted till the last. The practice of ploughing among corn, and of making large hills, is justly getting into disrepute: for the plough bruises and cuts the roots of the plants turns up the sod and manure to waste, and renders the crop more liable to suffer by drought.—The first dressing should be performed as soon as the size of the plants will permit, and the best implements to precede the hoe is a corn harrow, adapted to the width of the rows, which every farmer can make. This will destroy most of the weeds and pulverize the soil. The second hoeing should be performed before or as soon as the tassels appear, and may be preceded by the corn harrow, or a shallow furrow of the plough, or what is better than either by the cultivator. A slight earthing is beneficial, providing the earth is scraped from the surface, and the sod and manure not exposed. It will be found beneficial to run the harrow or cultivator a third, and even a fourth time, between the rows, to destroy weeds and loosen the surface, particularly if the season is dry."

"Some entertain a mistaken notion, that it is prejudicial to stir the soil among corn in dry weather, and others, that weeds serve to present the evaporation of moisture by a hot sun. The reverse of these opinions is true. The exhaustion of moisture by a plant is in the ratio of the surface of its leaves and stalks presented to the sun and air."

"INDIAN CORN.—There is no crop which habit has rendered more indispensable to the wants of our families and our farms than this. The late John Taylor, of Virginia, termed it our 'meat, meal and manure.' Holding this high rank in our farm economy, it is a subject of moment to adopt the best mode of culture, As many districts are shy in producing wheat, and as this crop is seriously threatened by the new (to us) wheat insect, it becomes more a matter of solicitude to render our corn crops productive. But as this grain demands more labor in its culture than other grain crops, so it is more important, on the score of profit, that it should be well managed, for if thirty bushels an acre be considered only a remuneration for the labor bestowed on the crop—all that the product falls short of this must be a loss—and all that it exceeds, a nett gain on the cultivation. The first consideration in regard to the corn crop, is to give it a dry mellow soil; the second that this soil be rich, fat or fertile; and the third, that the seed be timely put in and the crop well taken care of. Neither wet grounds, nor stiff clays, nor poor grounds, will repay by their product, and labor required on a crop of corn. He who has no other but these, should not attempt to raise it as a field crop. He had better bestow his labor upon other objects, and buy his corn. We think the best preparation for corn is a clover ley, well covered with a long manure from the barn yard, well ploughed, and well harrowed. It is better to give sixty loads of dung to three acres than to ten, upon the ordinary lands of our neighborhood. The difference in product will not make up for the difference in labor. Corn can hardly be dunged too high. What we have to recommend, that is not common in the culture of this crop, is, that double the usual quantity of seed be applied—the number of plants to be reduced at the weeding—in order to insure three or four stalks in each hill; that the roots be not broken, nor the manure thrown to the surface by the plough, but that the harrow and the cultivator be substituted for it, which will sufficiently mellow the surface and destroy weeds, and that the hills be but slightly earthed. By ploughing and hilling we conceive the manure is wasted, the roots broken and bruised, and limited in their range for food, the crop more exposed to injury from drought, and the labor increased."

In speaking of the plough in the cultivation of corn he again thus remarks—"We do not use it. We think its use prejudicial in breaking the roots, and in limiting their range for nutriment."

Mr. James M. Sutton, of St. George, Delaware, who raised upon seventy-nine acres 6,284 bushels of corn, and who gives an accurate and detailed account of the condition and cultivation of each field, makes this remark in relation to the use of the plough:

"In order to attest the advantage of the cultivator over the plough, for tilling corn, he had five rows in this field that he lapped the furrow to, with a plough, previous to going over it the last time with the cultivator. He soon discovered that the growth of these five rows fell short, in height, of those adjacent, and yielded one-fifth less corn.

"There is no doubt but that the true mode of tilling corn, especially where sod ground is used, is to plough deep, and use nothing but the fallow and the flake harrow for its cultivation. By not disturbing the sod ploughed down, it remains there as a reservoir of moisture, and an exhilating principle throughout the season, to the growth of corn."

JAMES M. SUTTON.

Upon Mr. Sutton's report of his crop, Judge Buel adds the following:

"Note.—The management which led to the extraordinary product of corn, should be deeply impressed upon the mind of every corn grower. 1. The ground was well dunged with long manure; 2. It was planted on a grass ley, with one deep ploughing; 3. It was well pulverized with the harrow; 4. The plough was not used in the after culture, nor the corn hilled, but the cultivator only used; 5. the sod was not disturbed, nor the manure turned to the surface; and 6. the corn was cut at the ground when it was fit to top. These are the the points which we have repeatedly urged in treating of the culture of this crop; and their correctness is put beyond question by this notable result. The value of lime and marl are well illustrated in the second experiment.

CONDUCTOR."

Mr. Chares H. Tomlinson, of Schenectady, New York, in giving an account of his experience, says:

"The two last years corn has been raised in the following manner, on the Mohawk Flats, near this city. If in grass, the land is ploughed and well harrowed, lengthwise of the furrow, without disturbing the sward. The last season, the field was rolled after being planted, with evident benefit, as it made level. When the corn is three inches high, the cultivator is passed through both ways; and twice afterwards it is used in the same manner; no hils are made, but the ground is kept level. Neither hand-hoe, nor plough are used, after the corn is planted. Fields manured with coarse manure have been tilled in the same manner. Corn tilled in this way is as clean of weeds, as when tilled in the usual way: it is no more liable to be blown down, and the produce is equally good. It saves a great deal of hard labor, which is an expensive item in the usual culture of corn. Last October, ten rods were measured out, in two different places, in a corn field, or grass-land—the one yielded ten, the other nine, bushels of ears. In one corn field, after the last dressing in July, timothy and clover-seed were sown, and in the fall the grass appeared to have taken as well as it has done in adjoining fields where it has been sown with oats."

Upon which Judge Buel again remarks: "All, or nearly all, the acoounts we have published of great products of Indian corn, agree in two particulars, viz: in not using the plough in the culture, and in not earthing, or but very slightly, the hills. These results go to demonstrate, that the entire roots are essential to the vigor of the crops, and to enable them to perform their functions as nature designed, must be near the surface. If the roots are severed with the plough, in dressing the crop, the plants are deprived of a portion of their nourishment; and if they are buried deep by drilling, the plant is partially exhausted in throwing out a new set near the surface, where alone they can perform all their offices. There is another material advantage in this mode of cultivating the corn crop—it saves a vast deal of manual labor."

The preceding considerations justify us in recommending, that in the management of the Indian corn crop, the following rules be observed, or at least partially, so far as to test their correctness:

1. That the corn harrow and cultivator be substituted for the plough in the culture of the crop.

2. That the plants be no not hilled, or but slightly so—this not to prevent the soil being often stirred and kept clean, and,

3. That in harvesting, the crop be cut at the ground as soon as the grain is glazed.

Again, in referenec to the system of level cultivation of corn, Judge Buel remarks:

"The experience of the last two years has been sufficient to admonish us, that without due precaution, our crops of Indian corn will not pay for the labor bestowed on the culture; and yet, that where due attentien has been paid to soil, manure, seed and harvesting, the return has been bountiful, notwithstanding bad seasons. Having been uniformly successful in the culture of this crop, we feel justified in repeating some leading directions for its management."

"AFTER-CULTURE.—In this the plough should not be used if the corn harrow and cultivater can be had and if used, should not be suffered to penetrate the soil more than two or three inches. The plough tears the roots, turns up and wastes the manure, and increases the injuries of drought. The main object is to extirpate weeds, and to keep the surface mellow and open, that the heat, air and moisture may exert better their kind influences upon the vegetable matter in the soil, in converting it into nutriment for the crop. At the first dressing with the hand hoe, the plants reduced to four, or three, in a hill, the surface is broken among the plants, the weeds carefully extirpated, and a little fresh mould gathered to the hill. At the second dressing, a like process is observed, taking care that the earthing shall not exceed one inch and a half, that the hill be broad and flat, and that the earth for this purpose be not taken from one place, but gathered from the surface between the rows, where it has been loosened by the cultivator."

As an evidence of the practical results of this mode of cultivating corn, I give you, in addition, the statements of two other farmers of their mode, and of the products of their laud.

Georgetown X Roads, Kent Co, Md., Nov. 4th 1837.

GREAT CROP OF CORN.—*Mr. Editor*—I have just finished measuring the crop that grew this year on a lot of mine of five and a half acres, and have measured 1051-3 barrels and one bushel of ears, making 103 bushels of corn per acre. The corn is called Seaman's corn; it is a deep yellow, and not a gourd seed, but a very deep grain and small red cob, and has from twelve to twenty four rows on the cob. I have taken great pains in selecting my seed for the last three years. I threshed off 230 bushels last May, and found from measurement from the barrel fine bushels and seven-eighths of shelled corn. The following is the manner in which I prepared the ground, &c. The soil is a stiff clay; one and a half acres of said lot was in clover last year, the balance in wheat. I put 265 two-horse cart loads of barn-yard manure on it: the manure was coarse, made out of straw, corn tops and husks hauled into the yard in January and February, and hauled out in March and April, consequently was very little rotted. I spread it regularly and ploughed it down with a large conclave plough, (made by G. Cox, of Middletown, Delaware.) seven inches deep. I then harrowed it twice the same way it was ploughed. I then had the rows marked out with a small plough, three feet ten inches wide, and one and a half inches deep. I planted my corn from 18 to 22 inches apart, and covered it with hoes: just drawing the furrows over the corn, which covered it one and a half inches below the surface. When the corn was four inches high I harrowed it, and thinned it to two stalks in the hill; in about two weeks after harrowing, I cultivated it: about the 5th of June I cultivated it again, which was all the fillage I gave it. We farmers of the Eastern Shore count our corn by the thousand: I had 28,640 hills on my lot, and I think my corn would have been better had I planted earlier: I did not plant till the last of April. I think the planting of corn shallow and working it with the cultivator is much the best way, especially on clover ley. Is you think the above worthy of notice you will please give it a place in your valuable paper."

WILLIAM MILLER.

"JUDGE BUEL.—*Dear Sir*:—I send you a statement of the expense and product of an acre of indian corn, raised by me, together with the mode of its cultivation. The corn was the little eight rowed yellow variety.

"SOIL AND CULTURE.—The soil is a warm sandy loam. It was ploughed deep in the autumn of 1836. About the first of May, I carried on, and spread all over the ground, about thirty loads of stable and barn-yard unfermented manure, then rolled and harrowed the ground well, being careful not to disturb the sod, which was timothy, and mown the summer proceeding; and on the 9th and 10th of May planted the same, two and a half feet between the hills. It was dressed with ashes when it made its appearance above ground. On the 10th June commenced weeding and thinning, leaving from two to four of the best spears in each hill, the whole averaging about three spears in each hill, the whole averaging about three spears i an hill. After this I ashed it again, using in all about ten bushels of good unleached house ashes. On the 10th of July commenced heeing, and at the same time took off all the suckers—put no more about the hills than we took from them, but carefully cleaned out all the weeds from the hills. The seed was prepared by simply wetting it with warm water, and rolling it in plaster.

"HARVESTING.—The corn was cut up on the 18th September at the ground, and shocked in small shocks; and on the 9th of October it was housed and husked, and subsequently threshed and measured.

"PRODUCT.—Ninety-nine bushels of first-rate corn, without even a nubbin of soft or poor grain, owing to the fact probably, that there was no suckers on which to grow them." H. HOPKINS.

I am aware that these views and the the authority in their support will find but little favor with a majority of corn raisers who insist upon the necessity of "*cutting the roots of the corn to make it grow.* With such, I know that reasons unanswerable, and the experience of the most practical farmers in every state of the Union, weigh nothing as against their own *absolute knowledge.*

Notwithstanding this apparent unwillingness to tolerate innovations upon old established usuages, I have confidence that there are some who will investigate the subject, and who will yield their own opinions, however long practiced upon, to the teachings of reason and to the experience of the practical and intelligent farmers of the United States.

JOHN M. MILIKEN.

SILK CULTURE.—We learn that Mr. Robert Sinclair, of Baltimore, has raised in his cocoonery the past season one hundred bushels of cocoons, which he has disposed of the advantage. A Mr. Allen, of Brockport, New York, devoted eight acres of his farm to the silk culture, and was so well satisfied with his success that he has since appropriated fourteen acres to the same purpose. Several of his neighbors have each raised, with small attention from fifty to sixty bushels of cocoons, and in all cases at a less expense than the bounty allowed by the State.—*Journal of Commerce.*

From the Maine Cultivator.

SOIL FOR WHEAT.

Wheat will not thrive, where there is no lime in the soil. It may be artificially applied to soils destitute of it, and a tolerable crop will be mainained, but this is forcing things to quite too great an expense. Thirty years ago, we never saw a wheat stalk growing in the Old Colony. There is no lime in the soil of that region. Since it has been discovered that lime is indispensable for wheat, many of the farmers, in that region, purchase Thomaston lime, sow it broad cast on their field designed for wheat, mix it with the earth by plowing and harrowing, and in this way obtain a great rarify—a tolerable crop of wheat. But the application of lime, as well as of manure, must be renewed annually, or no wheat kernels will fill out. We recollect that in September, 1837, we were in the town of Marshfield, Mass., and had the curiosity, whilst there, to visit the principal farm of Hon. Daniel Webster, once the old Gov. Winslow homestead. As we approached the mansion, passing down the avenue to the house, we noticed a "large pawed" man on our left, with a slouched hat and canvass or tow cloth frock on, marching first this way and then that, with a half bushel measure under his left arm, and with his right scattering air slacked lime over the greund, till it appeared quite white. We paused for a few moments to chat with the old codger, as to the operation he was engaged in, and to inquire if Mr. Webster was at home. It was Mr. Webster himself. He was preparing his field for wheat. He was very anxious to raise wheat and make Graham bread of it; and in this way he had met with some success.

Our soil in Maine is generally of a limestone, formation, and therefore is naturally adapted to the growth of wheat.—We need not to scatter lime on our fields. But there are soils of different consistency, some of which are more favorable to the growth of wheat than others. We find it statedin the Memoirs of the New York Board of Agriculture, that "wheat grows better on land that contains just as much clay as can be combined with it, without subjecting the wheat to be frozen out."

We inquired two weeks ago, whether the danger of frost to winter wheat, even in our latitude, is greater on well selected locations, than the danger of spring sown wheat, from the weevil, rust, mildew &c. In our opinion there should be more attention given to the cultivation of winter This is in hazard from nothing but the frost, and when it succceeds, it makes a better grain and a whiter flour. The location should not be in a low place, where the water will stand, but some elevated or side-hill situation, where the land is dry, and if it is where the snows naturally drift, in, so much the butter.——The author of the Memoir above alluded to, observes—"Since it is the clay which absorbs and retains most of the water injurious in wheat soils, I adopted a rule for the consideration of farmers, founded on that principle, and confirmed by all the observations I have been enabled to make." His *Rule* is as follows: "Wash a little of the soil in a tumbler of water, and observe the time required for it to become clear. If the time required exceeds three hours, it may be considered that in such a soil, the wheat is liable to be injured by frost." This is a simple Rule, easily applied by any farmer, who chooses to make the right selection of land for winter wheat.

Wheat that is sown the latter part of August or early in September, will have time to extend its roots in the soil, and will stand a better chance to retain its hold as the soil "heaves under the operation of frost.

In relation to the depth the seed should be covered, Mr. Featherstanhaugh, in his Essay on the Principles and Practices of Rural Economy, says:

"A grain of wheat when put into the ground at the depth of three inches, undergoes the following transformations as soon as the farinaceous matter which envelopes the frame of the young plant contained within it is softened into a milky state, a germ is pused out, and at the bottom of that germ small roots soon follow. The roots are gathering strength, whilst the germ, by the aid of the milky fluid, is shooting upwards; and when the milk is exhausted, the roots are in activily, and are collecting nourishment for the plant from the soil itself. This is analagous to the weaning of the young of animals, which are not abandoned by the mother till they can provide for themselves. But the care of nature does not end here; when the germ has fairly got above the surface, and become a plant, *a set of upper roots* are thrown out, close to the surface of the ground, which search all the superficial parts of the soil with the same activity as the under roots search the lower parts; and that part of the germ which separates the two sets of roots is now become a channel, through which the lower roots supply the plants with the nourishment they have collected.

What an admirable contrivance to secure the prosperity of the plants? Two distinct sets of roots serve, in the first place, to fix the plant firmly in the ground, and to collect nourishment from every quarter. The upper roots are oppositely situated to receive all the nourishment that comes naturally from the atmosphere, or artificially as manure, to the surface; and serve the further purpose of being all the base of new stems, which are tillered up, and so greatly increase the productiveness of the plant. The excellence of the drill system in grain may be probably perceived in this explanation; for in broad-cast sowing the seeds lie very near to the surface, and in this situation it is not only more exposed to accidents arising from birds, insects, and the weather, but the two sets of roots are necessarily crowded together so as almost to become indistinct; the plant is less firm, and has fewer purveyors collecting food for it.

REMARKABLE FECUNDITY.

We were informed a few days since by Mr. Williams, of Wallingford, that he purchased in May last, thirteen Sheep, each of which bore a lamb in December or January last, eleven of which lambs came to maturity for the knife, and were butchered by him. In June, eleven of the same sheep again bore twelve lambs, all of which are now living. We believe instances have been known of sheep bearing lambs twice in the same year; but we doubt whether another so remarkable a case of fecundity in a whole flock is to be found on record. Had Mr. Williams anticipated the birth of this second generation of lambs, he would not have killed the first, but would have exhibited the whole at our County Cattle Show.

Cour. Farmers' Gazette.

WHY WILL MILLS GRIND MORE IN THE NIGHT NHAN IN THE DAY-TIME?

It is known to every miller, says a modern who argues philosiphical, that the valocity of water wheels is increased at the approach of night without the volume of water or aperture through which it passes being enlarged. The solution of this well-known and singular fact is found in two distinct causes.—Water-wheels generally, are impelled by the specific gravity of water.—The specific gravity of water, in some measure depends on its temperature; for instance, say water at 60 deg. weighs 61 pounds per cubic foot, while at 40 degs. it weighs 62 pounds. Supposing the temperature of water during the day to be 60 degs. and 40 degs. at night, it follows that the specific gravity of water used at night, is 1-62 greater than the water used during the day, consequently, the power, impelling water-wheels, is 1-62 greater at night than day, *the aperture through which the water issues being the same.* The volume of water expended in a given time is the same at night as in day, but the weight of water consumed is greater at night than in day caused by the greater density of water at night.

The second cause producing this singular fact alluded to is, that at the approach of night, the vapours suspended in the upper regions of the atmosphere during the day, descend and rest on the surface of the water in forebays of mills, and aid their weight and density in forcing an increased quantity of water through the aperture. The difference of the specific gravity between cold atmosphere charged with vapour, and air heated by the noonday sun, is the pressure added at night to water in forebays of mills.

THE BANKRUPT LAW.—This law seems to be misapprehended by many; and the attempts of some of our contemporaries to set the public right on the subject have not been very successful.

If we understand the provisions of the law correctly, the persons who come under its operations are divided into two classes, *volantary* and *involuntary*.

In the class of *voluntary Baxkrupts*, are included "*all persons whatsoever*," rich or poor, merchant, trader, mechanic farmer, laborer, &c. without any reference whatever to the amount of their indebtedness, *provided* their debts shall not have been created by a defalcation as a officer or, as executor, administrator, guardian, trustee, or while acting in any other fiduciary capacity. Such defaulters cannot have the benefit of the law at all.

In the class of *involuntary Bankrupt* are included all "persons being merchants or using the trade of merchandise, all retails of merchandise, and all bankers, factors, brokers, underwriters, or marine insures, *owing debts to the amount of not less than two thousand dollars*," who shall leave the state with the intent to defraud their creditors, o shall take any other measures to accomplish such a design.

So that all debtors can *voluntary* take the benefit of the act, except defaulters; and no one can be *involuntary* declared a unless is proved their is an intention to