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Farmers' Department

From the *Genessee Farmer*.

THE CULTIVATION OF WHEAT.

The following paper, on the cultivation of Wheat, was read before the Agricultural Society of this State, at its meeting in February last, by H. Hickock, Esq., of Rensselaer county:

There are two causes which, when our winters are open, operate injuriously on wheat crops.—One is, the high and dry winds, which prevail in March; these blow off the soil in many situations, and by leaving the roots of wheat exposed, occasion their destruction. Another cause is the heaving of the soil, occasioned by the alterations of cold and warm weather. The water in the soil, in the act of freezing, expands and raises up the earth, and also the roots of the wheat plants which the earth embraces when a thaw succeeds, the earth being heaviest, falls down first and leaves the roots of the wheat a little elevated, and by repeated changes of the weather, the roots are so far thrown out as to perish.

Farmers, when convenient, usually sow their winter grain early in September, upon a supposition which guides their common practice, that grain thus early sown withstands best the action of unfavorable seasons. This supposition is founded upon the very plausible theory, that as the oldest roots will be longer and more numerous and take a firmer hold of the soil than those which are younger, they will be less exposed to be thrown above it, and at the same time, from their strength, be more tenacious of life. But experience informs us, that wheat, sown as late as the first or even the second week in October very often survives with less injury than that which is sown in the early part of September. Indeed farmers very generally admit, as the result of their experience, that rye, whose laws of vegetation must be nearly the same as those of wheat, sown so late in the season as barley to come up, is most likely to withstand an unfavorable winter. Still the very plausible theory, which has been mentioned, very generally induces them to sow rye early as well as wheat, in direct opposition to conclusions, which have been drawn from actual observation.

An experiment was made last autumn for the purpose of collecting some further information on this subject. On the first day of September last, I excavated a spot of ground six feet square. On the one side, the excavation was about six inches deep; on the opposite side, its depth did not exceed one inch. Seed wheat was placed over the bottom, so that the kernels were about four inches distant from each other, the excavation was then filled up. The soil was a suitable mixture of gravel, sand, and clay, for wheat, and of ordinary fertility. This was the latter part of the extreme drought which prevailed last summer, and the soil was dry, warm, and finely pulverized before it was thrown on the wheat. The circumstances, except the extreme dryness of the soil, were highly favorable to the vegetation of seed at the greatest depth in the earth. On the fourth of the month there was a heavy shower which not only wet the soil, but brought it down close and hard. On the night of the fourth, the plants began to show themselves; but none came up from a greater depth than about three and one-half inches. Two or three days after the second leaf had displayed itself, some of the roots were taken up and examined. It now appeared that, nearly an inch below the surface of the ground a new joint was found which was the basis of the second leaf, and also of a new system of roots.—There were now two tiers of roots; the seed or knot adjoining it, had generated the lower tier, and the new joint the upper one. These two tiers or systems of roots were connected together by a root resembling a cord or thread, and in one instance, I cut off this connecting thread and transplanted the upper part. This grew with little apparent check from its curtailment; but the under part died, although the soil above it was opened so as to afford it the advantages of air and solar heat. On the 20th day of September, I examined another plant, which had its regular formations as expected, and, what was not expected, a blade was discovered about an inch long, which had started from the lower system of roots, and would doubtless have found its way to the surface, had it not been disturbed. It is to be remarked, that this plant sprung from seed placed under cover of nearly four inches of soil, which was about an inch deeper than any of the other plants examined, and that some of the tops of the wheat plants had been eaten off and trodden down by accidental intrusion; a fact unregarded at the time. On the 26th day of September I examined another root, expecting to see the blade from below more perfectly developed, none however was discovered; but a third tier of roots was found at the surface of the ground, which proceeded from the second, as that had from the first system of roots. On the 16th day of October I placed some seed wheat about two inches in the ground; their delay in coming up induced me to suppose that they had perished from cold and wetness; but at the expiration of three weeks they made their appearance, and although the ground remained open several weeks longer, no second leaf appeared, of course no joint or second system of roots had been formed. The very different formations in the roots of wheat, which this experiment has disclosed, proceeded from causes appropriate and capable of being ascertained, but to distinguish them with certainty, other trials must be made and conducted with greater accuracy than the one of which an account has been given.

From these experiments, though inaccurate, some conclusions may perhaps be drawn of practical use. All plants which live over winter, possess an apparatus, by which they supply themselves, in autumn, with food for their sustenance in spring. This food consists mostly of saccharine matter, which is enclosed in a proper receptacle. When this receptacle is formed near the surface of the earth, the

fermentation of its contents is excited by frequent changes of weather, the saccharine matter is decomposed, and the plant perishes from the want of food, and perhaps also from a rupture of its vessels. All wheat, shallow-sowed, must have its reservoirs of food but slightly covered with soil, and of course they are fully exposed. When wheat is sown early at any depth, a second, and sometimes a third system of roots is formed within an inch of the surface. In these, many stems originate, each of which has its receptacle of nourishment at its base, and it is quite certain that in most instances, the food, which was contained in the seed and the adjoining knot, is entirely exhausted by the supplies of nourishment it affords the upper portions of the plant. The life of early sowed wheat must, then, like that which is shallow sowed, depend upon the preservation of the reservoirs of saccharine matter which are placed at or near the surface of the ground, and of course exposed to the unfavorable action of variable weather during winter.

When wheat is late sowed, generates no second blade or new system of roots, and of course the nourishment for spring's use is retained in the receptacle which adjoins the seed. If, then, we sow sufficiently late in autumn, and place the seed deep in the soil, we shall provide every security against the hazards of bad weather, which the nature of the case admits of.

In the ordinary course of husbandry, some of the wheat is necessarily deposited at a considerable depth in the soil, and when this takes place sufficiently late in the season, the receptacle of food will be protected by its covering of earth, and a partial crop will often be realized, although there may be, when the spring opens, no signs of life on the surface of the field. In such cases as the destruction of the blade, which issues from the seed-roots in autumn can be but of little importance, one would suppose that the surviving plants will grow the more vigorously, from their being less in number, and by tilting produce many stems with large well filled ears; such, however, is not the fact; usually the stems are single and the heads are not large. To account for this, it must be recollected, that after the ground has thawed in the spring, the earth settles and often becomes so extremely hard that doubtless many plants die, in their struggle to overcome the opposing resistance, and the surprise is, that any one should possess vigor enough to protrude even a single stem through the hard earth that covers it.

From this view of the subject, the practice may be recommended, of effectually harrowing the field in the spring after the ground has settled, in order to supply the plant with fresh air, and give a free passage to its upward growth. After the harrow has been used, the roller ought to be employed to reset such roots as have been displaced, and diminish the evaporation of the moisture.

In England, a wheat plant has been taken up, separated into eighteen parts, and replanted, and by successive divisions and replantations, a crop of three and one-third pecks of wheat was obtained in less than eighteen months from the time the seed was sown. If the roots of wheat can be so minutely divided and successfully replanted, there is little danger that the finest use of the harrow can be injurious, provided the roller be also used. The fact appears to be, that nothing is necessary to the vertical growth of the plant, but the preservation of the apparatus which contains the saccharine matter, which is its proper vernal food; so, that if the roots and top be cut off, and the bulb be planted in a genial soil, the plant will grow.

Notwithstanding the arguments which have been urged in favor of sowing wheat late, it must be conceded that when early sown and our fields are cultivated in the usual manner, it produces the largest crop, if it survive the cold season. Whether such improvements may not be made as to combine the benefits of a sure and large crop, is a question still open to investigation; the probability is, that both advantages may be secured, by a more correct knowledge of the proper time to sow, and of the best methods of culture.

In the first volume of the transactions of the society for the promotion of Agriculture, arts and manufactures, instituted in the State of New York, it is stated that in Huntington, Suffolk county, fifty-two bushels of wheat had been raised by manure on an acre of land, and Mr. Downs is said to have raised, on a poor, gravelly, dry soil, by the use of fish as a manure, at the rate of 128 bushels of rye per acre. In this case, the rye would doubtless have lodged and been of little value, were it not that it was twice eaten off by his neighbors' sheep, which broke into the lot; once, when the rye was 9 inches high, and again when it was about 6 inches high.

The production of so large a crop of wheat and of rye must have proceeded from causes which are steady and uniform in their operations, and if all the circumstances which had occurred to produce them had been distinguished and noted down, similar crops might have been again raised. Some things which occurred during the cultivation of this rye crop may be ascribed to accident or chance, so far as Mr. Down's sagacity was concerned, but the cause which proximately occasioned the crop, did not work by accident or by chance, but agreeably to the laws or rules from which they never deviate. This uniformity of operation lays the foundation for making future discoveries, and brings within the grasp of our faculties the knowledge of increasing our crops by methods the least laborious and expensive.

The period may arrive when the farmer shall pursue his methods of culture with an anticipation of the consequences which will result, analogous to that of the mechanic in the construction of a machine, and when, by direct means, he shall produce greater crops than ever were obtained by mere empirical trials.

Time was, when the greatest philosophers taught the doctrine, that all things pertaining to the surface of the earth were too irregular and too much under the government of chance, to admit of scientific inquiry; this error has, within the two last cen-

turies, been dispelled. But a similar error, in regard to rural affairs, is embraced by almost all our practical farmers, and the task of correcting and exposing it is devolved, it would seem, upon the united efforts of a few individuals. Here then is the difficulty.

From the *Richmond*.

LAST HOURS OF JOHN RANDOLPH.

The subjoined deposition of Dr. Parrish, of Philadelphia, read before the General Court of Virginia, in the case of Mr. Randolph's Will, has excited a very general interest:

Joseph Parrish, of the city of Philadelphia, Doctor of Medicine, aged fifty-five years, or thereabouts, being produced, affirmed and examined on behalf of William Meade, named in the annexed commission, deposes as follows: That, being legally required to make a deposition relative to John Randolph of Roanoke, I hereby state my recollection of such incidents as I consider calculated to show the state of his mind during the period of my medical attendance.

John Randolph died under my medical care on the morning of the fifth month, (May) twenty-fourth, eighteen hundred thirty-three, at one quarter before 12 o'clock. He breathed his last in a chamber of the City Hotel, No. 41 North Third street. I was present at his departure, closed his eyes, and placed his limbs in a decent position. I was called to visit him, on the 20th of said month, by Edward Badger, one of the proprietors of the City Hotel. It was a stormy night—the patient had arrived that afternoon in the steamboat from Baltimore. He was bound for Europe, and had been disappointed in getting on board the packet. He soon informed me he was acquainted with me by character. I know you through Giles—alluding, I presume, to Wm. B. Giles, late Governor of Virginia, respecting whose case I was repeatedly consulted. The patient appeared much disturbed on account of some difficulties he had encountered after leaving the steamboat. It was evident he was extremely ill; his debility was such that caused much distress in respiration. He appeared fully aware of his danger, told me he had attended several courses of lectures on anatomy, describing his symptoms with medical accuracy, declaring he must die if he could not discharge the puriform matter. On inquiring how long he had been sick, he replied—"Don't ask me that question; I have been sick all my life." He soon told, however, that he had been afflicted for three years with his present disease, which had been greatly aggravated by his voyage to Russia—"this had killed him." On feeling his pulse he said: "You can form no judgement by my pulse, it is so peculiar." I soon perceived, that to manage the case before me would be like steering between Scylla and Charybdis; and concluded to proceed by cautious soundings, rather than advance under full sail.

I told him he had been so long an invalid he must have acquired an accurate knowledge of the general course of practice adapted to his case. He replied—"Certainly, at forty a fool or a physician, you know." I remarked there were idiosyncrasies in many constitutions, and wished to ascertain what was peculiar about his. He said, I have been an indolent man all my life. This appeared truly a most trite and correct view of the subject, although the quæstion did not consider it necessary to give a concurring reply. He informed me that all the preparations of camphor invariably injured him, and, as to ether, "it would blow me up." Not so of opium and its preparations; for I soon discovered he was accustomed to the free use of this drug in some form or other. On one occasion, he told me that he either did or could (I am not clear as to the words did or could) take opium like a Turk; but I certainly received from him the impression, that he was in the habitual use of opium in some shape or other. His conversation was curiously diversified, and he complained with no small asperity of the difficulties he encountered after leaving the steamboat. He was put into a wretched hack—the glass of the carriage was broken—he had been obliged to go from one hotel to another, in search of lodgings, exposed to the peltings of the storm, and every thing was in a state of discomfort. He soon introduced the subject of the Quakers, complimenting us in his peculiar manner of neatness, economy, order, comfort in every thing, except politics—"there, always twisted." Before I retired, he repeated a portion of the litany of the Episcopal Church, with apparent fervor. The following morning he sent for me early; I was called from bed. He apologized handsomely for disturbing me; and from this period we appeared mutually to enter into our new acquaintance in the capacity of patient and physician. After considerable experience in sick chambers and death beds, I may say I never met with a character so perfectly original and unique. He might sometimes be compared to a spoiled and fractious child; but a little observation convinced me that, in the midst of his extreme constitutional irritability, petulance, impatience, and sarcasm, there were some noble traits of character. Among these, was a keen sense of property. And when this was greatly appealed to, there was a disposition to be convinced and acknowledge indiscretions.

On more than one occasion, it seemed proper for the patient to understand, that while his physician felt every disposition to treat him with kindness and respect, he was not insensible to what was due to himself. On one occasion, when I proposed something for his relief he petulently and positively refused compliance. I paused, and addressed a few words to him. His good sense predominated, he apologized, and was as submissive as an infant. One evening I proposed a medical consultation, leaving the choice to himself. With an assurance of entire confidence in his medical attendant, he promptly objected to the proposal, with the remark, "In a multitude of counsel there is confusion; it leads to weakness and indecision; the patient may die while the doctors are staring at each other." On parting with him, and especially at night, I would receive the kindest acknowledgments in the most

affectionate tones, generally with the addition, "God bless you—he does bless you—and he will bless you." It seems as if his disposition to criticize on the pronunciation of words could not be restrained under any circumstances of bodily suffering or immediate danger of death. The slightest deviation from his standard of propriety must be met and corrected. In the application of words to convey ideas, he was extremely exact. He once remarked to me, that although the French was a vile language, yet it was preferable to any other for treaties and public documents, because every word was in its exact place—"no double meaning—there it stands." The night preceding his death, I passed about two hours in his chamber. He told me, in a plaintive tone, that his poor John was worn down with fatigue, and compelled to go to bed. A most attentive substitute supplied his place; but neither he nor I were like John, who knew where to place his hand on any thing in a large quantity of baggage prepared for an European voyage. The patient was greatly distressed in breathing in consequence of difficult expectation, and requested me, at my next visit, to bring instruments for performing the operation of bronchotomy, for he could not live unless relieved. Yet, in the same interview, he directed a certain newspaper to be brought to him. It was found, after a difficult search. He put on his spectacles, as he sat propped up in bed; turned over the paper several times, and examined it carefully; then placed his finger on a part, he had selected, and handed it to me, with a request that I would read it. It was headed "Cherokee." In the course of reading, I came to the word "omnipotence." I gave it the full sound, omnipotence. He checked me instantly—repeating it according to Walker. I offered my reasons for pronouncing it as I did. He did not rebut, but quickly said, "Pass on." Not long after, I pronounced the word "impetus" with the e long. He corrected me instantly. I hesitated on his criticism, and in an inquiring and doubtful tone, repeated the word as he had pronounced it. He sharply replied, "There can be no doubt of it." An immediate acknowledgment of the reader, that he stood corrected, appeared to satisfy the critic, and the piece was concluded. I now observed to him there was a great deal of sublimity in the composition. He directly referred me to the Mosaic account of creation, and repeated, "Let there be light, and there was light," and, "There is sublimity." He spoke, in this interview, of the slanders and lies that had been published against him in the newspapers. Even his domestic arrangements, his silver cups, &c., had been noticed, when every one might know that silver was more economical than highly finished china, or cut glass, that was liable to be broken. I believe the patient never fully relinquished his hold on life until the day he died. It is true, he had often said he was dying, he must die—or words to that effect; but these were rather to be considered as ebullitions of a morbidly irritated mind. The hope of getting off to Europe still lingered with him. In proof I will state, that perhaps on the third day of my attendance, he informed me that he intended to go on to New York the next morning, and wished my bill to be left at the bar. I understood it to be his intention to embark at New York for Europe. Instead of going in the morning, as he expected, he was so exremely ill in the night that I was called from my bed to visit him. He also requested me to have some sulphate of morphia, which he had in his possession as a pure imported article, divided into papers of one grain each. This was done by my direction at the apothecary store of Charles Ellis, No. 56 Chestnut street, who put up my prescription for the patient. The morning of the day that John Randolph died, I received an early and urgent message to visit him. Several persons were in the room, but soon left it, except his servant John, who appeared affected at the situation of his dying master. I remarked to John, soon after I arrived, that I had seen his master very low several times before, and he had revived, and perhaps he would again. The patient directly said, "John knows better than that." The interview of this morning was peculiarly impressive. I had not been long with him before he looked at me with great intensity, and said, in a very earnest and distinct manner, "I confirm every disposition in my Will, especially that respecting my slaves, whom I have manumitted, and for whom I have made provision."

This declaration was to me altogether unexpected. It involved a subject which in our previous interviews had never been touched. It was one I should not have introduced. I assured him I was rejoiced to hear such a declaration from him. He appeared anxious to impress it on my mind. Soon after this I proposed to go, for a short time, to attend an urgent message received just before I left home, assuring my patient I would return as speedily as possible. He positively objected to my leaving him. "You must not go; you cannot, you shall not leave me." He called to his servant John to take care that the Doctor did not leave the room, and John accordingly locked the door and soon reported, "master I have locked the door and got the key in my pocket, the doctor can't go now." My proposal to leave him for a short time, even on a promise of return, evidently irritated him for a moment. It may show the situation of his mind, when I state that in the moment of excitement to which I have referred, he said, "if you do go you need not return." I appealed to him as to the propriety of such an order, inasmuch as I was only desirous of discharging my duty towards another patient who might stand in need of assistance. His manner instantly changed, and he said, "I retract that expression;—and, probably a quarter of an hour afterwards, casting on me an expressive look, he again said, "I retract that expression." I told him I thought I understood him distinctly on the subject he had communicated, and I presumed the Will would explain itself fully. He replied in his peculiar way, "No, you don't understand it; I know you don't. Our laws are extremely particular on the subject of slaves; a will may manumit them, but provision for their subsequent support requires that a decla-

ration be made in the presence of a white witness; and it is requisite that the witness, after hearing the declaration, should continue with the party and never lose sight of him until he is gone or dead. You are a good witness for John—you see the propriety and importance of your remaining with me, your patients must make allowances for your situation." I saw and felt the force of the appeal.—The interest of the scene increased every moment. I was now locked in a chamber with a dying statesman of no common order—one whose commanding talents and elevated political station, combined with great eccentricity of character, had spread his fame not only through his native land but over Europe. He then said, "John told me this morning—master you are dying." I made no attempt to conceal my views. On the contrary, I assured him I would speak to him with entire candor on the occasion, and told him it had been rather a subject of surprise that he had continued so long. He now made his preparations to die. Between him and his faithful servant there appeared to be a complete understanding. He directed John to bring him his father's breast button, which was immediately produced. He then directed him to place it in the bosom of his shirt. It was an old-fashioned, large-sized stud. John placed it in the button hole of the shirt bosom; but, to fix it completely, required a hole on the opposite side. When this was announced to his master, he quickly said, "get a knife and cut one." I handed my penknife to John, who cut the hole and fixed the valuable relic to the satisfaction of the expiring patient. A napkin was also called for, and was placed by John over the breast of the patient. For a short time he lay perfectly quiet, his eyes were closed, and I concluded he was disposed to sleep. He suddenly roused from this state, with the words "Remorse!" It was twice repeated; the last time at the top of his voice, evidently with great agitation. He cried out "Let me see the word." No reply followed, having learned enough of the character of my patient to ascertain that when I did not know exactly what to say nothing. He then exclaimed "Get a dictionary—let me see the word." I cast my eyes around, and told him I believed there was none in the room. "Write it down then—let me see the word." I picked up one of his cards from the table. "Randolph of Roanoke," and inquired whether I should write on that? "Yes, nothing more proper." Then with my pencil I wrote Remorse. He took the card in his hand in a hurried manner, and fastened his eyes on it with great intensity. "Write it on the back," he exclaimed. I did so, and handed it to him again. He was excessively agitated at this period; he repeated "Remorse! You have no idea what it is, you can form no idea whatever, it has contributed to bring me to my present situation, but I have looked to the Lord Jesus Christ, and hope I have obtained pardon." He then said, "Now let John take your pencil and draw a line under the word?" which was accordingly done. I required what was to be done with the card? He replied, "Put it in your pocket—take care of it—when I am dead look at it." The original is now in my possession.

"This was an impressive scene. All the plans of ambition, the honors and the wealth of this world had vanished as bubbles on the water. He knew and he felt that his very moments were few, and even they were numbered. It afforded his physician an opportunity, without being obtrusive, of offering to him a few serious observations, and pointing the expiring statesman to a hope beyond the grave.

"My situation at this period was serious and embarrassing. Locked in the chamber of a patient, and solemnly called upon as a witness, confirming a will already made for the liberation and support of his slaves, when the only human ear that heard the declarations, except myself and the testator, was one of the very slaves included in the bequest, it required no unusual foresight to anticipate the construction that might be put upon such testimony, perhaps in a distant court where the witness might be personally unknown. When, added to this, it was found he was a member of the religious society of Friends, who had long since washed their hands from the stain of slavery, and whose sentiments on that subject were universally known, I saw that even under a charitable construction of the testimony, the force of early impressions, and the bias of education, might be supposed imperceptible to influence even an upright mind, and give a coloring to words and facts which, to others differently educated, might be viewed in another light.

"Under these views, I introduced a subject of calling in some additional witness, and suggested sending down stairs for Edmund Badger, whose attentions were very great to him. He replied, "I have already communicated that to him." I stated it was my intention to be with him as much as possible until his death, but with his concurrence I would send for two young physicians who should remain and never lose sight of him until he was dead, and to whom he could make the declaration. My son, Doctor Isaac Parish, and my young friend, and late pupil, Dr. Francis West, were proposed to him, saying that the latter was a brother of Captain West. He quickly asked, "Captain West of the packet?" On receiving an affirmative reply, he said, "Send for him—he is the man—I'll have him." From some circumstances that had come to my knowledge, I had reason to believe that Captain James West was a favorite with the patient. Before the door was unlocked, he pointed towards a Bureau, and requested I would take to it a remuneration for my services. To this I promptly objected; informing him I should feel as though I were acting indelicately to comply. He then waived the subject by saying, "In England it is always customary." The witnesses were now sent for, and soon arrived. The dying man was propped up in bed, with pillows nearly erect. Those only who knew his form and singular physiognomy, can form an idea of his appearance at this moment. Being extremely sensitive to cold, he had a blanket over his head and shoulders; and he directed John to place his hat on over the blanket, which aided in