

WESTERN SENTINEL.

BY J. W. ALSPAUGH.

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Office on West Street, below the M. E. Church. ADDRESS OF W. W. HOLDEN, Esq., AT THE CUMBERLAND FAIR—Nov. 30, 1859.

Mr. President and Gentlemen of the Cumberland Agricultural Society: When I accepted the invitation of your Committee to address you on this occasion, it was with much distrust of my ability to meet your just expectations. Nor has subsequent reflection, and some investigation of the subject usually treated in such address, served to diminish this distrust. So wide and so varied is the field before me—so intimately connected with sciences of which I know but little, and so small is my practical knowledge of agriculture itself, that I might well relinquish all hope, if indeed such hope could exist, that it will be in my power to instruct and inform the large and intelligent audience here assembled. Yet, I could not resist the invitation, because I agree myself to what I maintain in regard to others, that every public man is under obligations to respond to such calls; and since, also, I felt sure you would make full allowance for the numerous defects and the lack of knowledge which would be so apparent.

Though not myself a tiller of the soil, I take a deep interest in this employment, and regard it, as we all should do, as of primary importance. Every thing beautiful, and useful, and durable upon the earth; every object of art which decorates the landscape or floats upon the deep, has had its origin in the soil. Every comfort and convenience of life—every luxury that solaces or enervates us—every gratification based upon material things, and every physical improvement, which, while it dignifies humanity, at the same time attests the superiority of mental power, may be traced directly or indirectly to the soil.

Since, then, agriculture is so important, and so many interests depend upon an enlightened prosecution of it, it is natural that we should resort to every means in our power to add to our information on the subject, and to give to it still greater prominence as a practical science. And what a change has been effected in this respect within the last ten years. Then we had no agricultural associations of any kind; now we have a State Society and numerous County Societies, dispensing their benefits not merely at stated periods, but from year to year. Then our farmers, manufacturers, and mechanics, insulate from each other, knew but little of the progress which was being made in their respective departments of industry, and the stimulus of a general and enlightened emulation was wanting; but now they assemble together at least once a year, to exhibit and compare their productions, the evidence of their intelligence, thrift, experience, and perseverance; to take note of, and take heart from, the success of others in special fields of labor; to investigate and compare the processes by which certain results have been attained; to encourage each other by precept and example; to knit more firmly the ties of brotherhood and interest between different and distant localities; and to rouse up and keep warm those noble sentiments of patriotism and fraternal regard which so much become the citizens of one common State.

It is not the premiums offered and obtained on an occasion like this, which constitute the chief attraction to exhibitors. These are but "small dust in the balance," compared with the triumphs of intelligence and industry, of skill, or of genius, of which the premiums and diplomas awarded are but exterior evidence. Looking over this large assemblage, one would conclude that if all your people were not here, they were at least well represented in the strength of their manhood, in the innocence and candor of their youth, and in the loveliness which is a part of the birthright of the daughters of this favored region.

Truly it may be said of us, as of Israel of old, "The Lord thy God hath brought thee into a good land; a land of brooks of

water, of fountains and depths that spring out of valleys and hills; a land of wheat, and barley, and vines, and fig-trees, and pomegranates; a land wherein we eat bread without scarceness; a land whose stones are iron, and out of whose hills we may dig brass." This goodly heritage is impaired by no laws of descent or primogeniture. No oppressive system of landlord and tenant—no burdens imposed for the benefit of privileged order, retard our industrial pursuits, or restrict the hand of honest labor. Every man in this country may be a freholder. Every man may improve his condition on a solid basis, and count with certainty on transmitting the fruits of his industry, in such modes as he may designate, to his descendants. Our governments, unlike those of the old world, are felt mainly, if not only, in the benefits and blessings they bestow. Industry, genius, skill, are as unrestricted as the sun and air; while the government itself, instead of repressing the energies of its citizens by unjust exactions, has become the patron and promoter of agriculture, mechanics, and the industrial arts.

If, therefore, we do not prosper as agriculturists, as mechanics, as manufacturers, as artisans, we must look elsewhere for the cause than to our political and social institutions.

The primary pursuit of our people, as I have already intimated, and indeed of every people who have attained, or who may hope to attain permanent prosperity, is that of agriculture. I know it may be said that some of the most powerful nations of antiquity were commercial in their character, and that England furnishes a striking example in modern times of a prosperous commercial empire. But, after all, agricultural labor and agricultural production constitute the basis of English prosperity and power. In no country on earth has agriculture, chemistry, the nature and application of soils, climatology, animal and vegetable physiology, botany, comparative anatomy of animals, natural history and geology, been so thoroughly understood and so generally practiced as in Great Britain. A good farmer has been defined to be, one who raises the largest quantity of the most valuable produce, at the least expense, in the shortest time, and with the smallest injury to the land. According to this test, the English, the Scotch, and the Irish are among the best farmers. Their cattle and live stock, instead of being a burden, are a benefit to their lands. Diversified as are the pursuits of the English people, and excellent as they do in manufactures, yet the latter are of comparatively modern origin, depending mainly for existence on our great staple, Cotton; while all their pursuits and interests would languish if their agricultural operations should decline. They have availed themselves not only of the atmosphere, light, heat, the rains and dews, in cultivating their fields and in adding uniformity and beauty to their landscapes, but they have sought out inventions with which to till the earth, to lighten the labor of man and beast, and, by thorough pulverization and cultivation of the soil, to draw from it the largest quantity of produce with the least injury to the soil itself. Whenever the business of cultivating the earth begins to decline in Great Britain, when her people come, if they ever should come, to attach more importance to commerce than to the means of commerce; when they come to think more of their ships than of that interest which feeds the people and freights the ships, then may it be said of her, as of other nations in which the commercial feature predominated—

"That trade's proud empire hastes to swift decay, As ocean sweeps the l-bored mole away; While self-dependent power can time defy, As rocks resist the billows and the sky."

This "self-dependent power" belongs pre-eminently to North Carolina. About the same area of Great Britain, North Carolina has as good lands as hers were originally; as many minerals and in as great abundance; a latitude better suited to the grape and other fruits; as many, if not more facilities for manufacturing; and four great staples foreign to British soil, to-wit, rice, tobacco, Indian corn, and cotton. England is an old, ours is a new to the square mile; if equal to that of England, sixteen millions of human beings would swarm upon our surface. Only about one-sixth of our entire area is in cultivation; every square yard of England serves some purpose of adornment, profit, or utility. Comparing the two countries, their natural resources, the advantages we have over her in climate, in the four great staples, in our species of labor, in our exemption from rental charges, from the burdens of Church and State, and from the blight of absenteeism and privileged orders—what a great and glorious future is before us, if we are only true to ourselves!

All soils, to be productive, must possess certain properties or elements. Organic or vegetable matter must exist in due proportions with earthy or inorganic matter. There must be what the chemist call phosphorus, sulphur, potash, soda, lime, magnesia, iron, silica, and alumina. A good fair soil, for example, contains seventy-four per cent. of parts of siliceous sand, five parts of organic matter, fourteen of alumina and peroxide of iron, and not merely

traces but small quantities of phosphoric acid, lime, magnesia, potash, and soda—making in all the one hundred parts of any given quantity. Different kinds of plants require these properties in different portions. The grains, cobs, husks, stalks, leaves, stalks, and tassels of corn, for example, are made up in different proportions, each one containing its own proper quantity. The grains and cob both contain potash and soda, the grains bore of each than the cob, while the two contain the same quantity of lime. The leaves take up silica, potash and soda in large, and lime and magnesia in considerable portions. Wheat requires silica, lime, potash, soda and phosphoric acid in large proportions; the silica for the straw, and the other elements mentioned for the grain. The fifty-eighth part in one hundred of the potato is potash and soda.—The tobacco plant contains forty-eight parts of lime, four of potash, six of soda, nine of magnesia, fourteen of phosphoric acid, and four of silica. The cotton plant, with the seeds, abounds in lime, potash, soda, and magnesia.

Now, these are hard names, and the practical farmer may be curious to know in what respect they affect his business; but they are not more difficult to the agricultural chemist thoroughly scientific farmer, than compass and planes are to the carpenter, or chases or shooting-sticks to the printer, or adownsons, detinue, or trover to the lawyer. Every practical farmer, who has succeeded well in his vocation, who has made good crops, and at the same time preserved or increased the original fertility of his land, has availed himself of the elements or agencies just referred to. He may not have known these agencies or elements by name, and he may have attached but little importance to what is called book, or scientific farming; yet whenever he ditched, or drained, or horizontally ploughed, or thoroughly cultivated his land,—and whenever he applied fertilizers to it, whether in the form of stable manures, lime, plaster, guano, or green crops turned in, he practiced the principles of agricultural chemistry, and was, to that extent, a scientific farmer.

In order to produce, as we have just stated, there must be, first, fertility of soil for the seeds planted; second, warmth; third, moisture. The air is a reservoir or holder and dispenser of substances which improve the soil, and water is the medium of communication. Earth, air, water, light and heat; these are the agents in the laboratory of nature by which production is constantly maintained. Without the earthy inorganic matter—without light or heat in due proportions—without the ammonia and carbonic acid of the atmosphere, and without water, which holds both ammonia and carbonic acid in solution, and, in descending, imparts it to vegetation, the husbandman would plant in vain. For example, the soil is prepared, and a grain of corn is deposited in the ground. Under the influence of warmth and moisture it expands and manifests life. Gradually but surely, obeying the life-principle infused into it by the Creative hand, it first sends its root downwards and fastens it in the soil, while it shoots up its green bud to drink in the light and the richness of the air. Soon the tap-root, which steadies the stalk, sends out smaller roots in all directions, which feel for and absorb the nutrient properties of the earth. The plant now lives and breathes. Taking up substances from the soil, by the aid of water and the combined action of air and light, it deposits them in the stalk and blades. Now the tassels appear, and then the shoot, with its delicate silk; the pollen from the tassel, shaken by the winds, is showered on the silk, and the grains are formed. The plant then matures, and lo, we have "the ripe corn in the ear." Thus, since the creation, has all vegetation been formed, varying only in the modes and periods peculiar to each plant.

It is obvious, then, that agriculture does not merely imply clearing, plowing, digging and harrowing, but that it is a science or art, and must be pursued with the same intelligence and perseverance which are indispensable to success in other vocations. The soil in its primitive state generally yields abundantly, and the first tiller enjoys its productiveness without thinking of the exhaustion going on, or of the importance of renovating measures. This has been peculiarly the case in the old Atlantic States. Vast bodies of land have been cleared, sowed and exhausted by farmers, many of whom entertained the erroneous opinion that land was made to be worn out; and having, as they thought, accomplished their work as farmers in their first localities, they have removed to distant regions and settled on new soil.—

This exhausting process was formerly as common in the Northern and Eastern States as in this; but their means of inter-communication and of reaching the markets of the world, which were early established, and the demands for breadstuffs and life-sustaining food of all kinds, created by their rapidly increasing population—the result in a large degree of emigration from Europe—gave an extraordinary impetus to agricultural production, which has been steadily kept up, and the fruits of which are seen in all directions in neat and almost perfect farms, and in a pro-

perity which no common depression or calamity can seriously impair, much less destroy. Large portions of New Jersey, for example, which were formerly barren and apparently unprofitable, have been reduced to cultivation, and are now yielding the most remunerating returns to agricultural labor. The marls of New Jersey alone have added millions to the income of her people, while the value of the permanent body thus given to their hands cannot be estimated in dollars and cents. We have in abundance, along the Cape Fear, the Neuse, and throughout our eastern plains, the same fertilizer, in as great variety as in any State, and quite equal to any richness and fitness for the soil. If I had time I could lay before you numerous examples of its profitable application to lands in this State. It is true, it requires labor and expense to get it out and apply it; but where it is in the neighborhood of the farmer, there can be no doubt that it will amply repay the labor, expense and care bestowed upon it.

But it by no means follows, because agriculture is a science or art, that, for practical purposes, it is difficult or abstruse. In the early ages of the world, when the leading orders were devoted to the chase or to war, and when the wants of mankind were few, agriculture was neglected, inasmuch that any prominent or learned citizen or subject who turned his attention to it, became at once, from the novelty and singularity of his taste, a noted, and afterwards an historical character. Cato and Cincinnatus were really very indifferent farmers, compared with those of the present age. If they cultivated the earth at all, it was upon a small scale. The facilities for successful farming in Egypt, Greece and Rome proper, were not, altogether, worthy to be compared with any one modern improvement in the science. The plough, by horse and by steam—the reaping, the threshing, and the mowing machine—the cotton-gin, separating the seed from the fibre with the rapidity of lightning and the delicacy of the human touch—the flouring-mill, receiving the rough grain and bolting it out in snow white flour, worthy to have graced in its wheat-excellence, the tables of all the Pharaohs or of Solomon himself—the corn-planter, dropping the seeds with the mathematical precision—the various contrivances for draining, breaking, slicing, and pulverizing the soil, and the chemical knowledge which separates, solves, and determines the nature of soils,—these improvements were unknown even to modern Europe, and are characteristic only of this the most advanced and most prosperous condition of mankind. The plough is a great civilization. Without it the axe would be wielded in vain. Cultivation means the plow; and the plow always does, or always should imply cultivation. But soil must be had or made, before it can be cultivated. If it be already good, care must be taken to preserve and improve it.—

This can be done, first, by hillside ditching and horizontal ploughing, to prevent washing, for the loss is often greater from washing than from the absorption of plants; secondly, by ditching and draining where there is too much water; and thirdly, by a proper rotation of crops, by following, and by fertilizers, not thoughtlessly applied, but such as are needed. Stable manure contains in abundance nearly every element requisite for grain or other crops, and is, with wood ashes, the best fertilizer. But as these are not to be had in sufficient quantities, we must look for substitutes.—Guano, which contains a large amount of phosphoric acid, ammonia and lime—of all which enter in greater or less proportions into wheat, corn, tobacco, and cotton—has been much used recently. I know the opinion is entertained by some that it only stimulates, and really impoverishes the soil; but this opinion is not sustained by the best farmers who have used it. It is true, if we depend on guano alone, and cultivate the land year after year for the same crop, it will be exhausted,—and the same result would follow any other fertilizer. We must not expect too much from any one fertilizer, for it can only bestow the peculiar properties it possesses. When these are exhausted of course the fertilizer fails; but a rotation or change of crops, with now and then a green crop turned in, will not only restore but improve the fertility. Those crops, says Dr. Emmons, selected for enriching the soil, should be such as grow vigorously and send their roots deep to bring the fertilizing matter to the surface. That learned gentleman mentions clover and peas particularly, as best calculated to preserve or restore fertility; and though he says "it is not perhaps possible to estimate the real value of a clover crop as a fertilizer," yet, on account of the heat of the suns and sands of this latitude, especially south of Raleigh, he inclines to think that the pea, from its composition and adaptation to climate, is the best crop to precede wheat and to act as a general fertilizer. The pea, he adds, after a careful analysis of both plants, "is considerably richer in the expensive elements of nutrition" than clover, and will not doubt "take the place of red clover, in this State." "Experience," he continues, "has already proved its superiority. It is easily cultivated, and is not liable to so many accidents. It takes deep root, spreads widely, and is rich in valuable fertilizers."

The improvement of his land should be a constant object with the farmer. He should look not merely to the present, but to the future. Whether his farm be large or small—and, as a general rule, the smaller the better—a prudent foresight should govern all his labors. If he cannot afford to pay for fertilizers, let him make them by composting; let him save all his ashes and apply them to his land; let him resort to green crops turned in, which never fail to remunerate for the labor and expense bestowed; let him protect his soil by deep ploughing, where it is necessary, and by a succession of grasses, which will afford nutriment for his stock, and at the same time prevent the land from washing. Let him resolve, and always bear in mind that his home and the home of his children is just where he is; that if this or that improvement, or fixture, or adornment, should not be profitable or needful this year, it may be next year, or years thereafter; and that nothing valuable in its nature which he may put in or put on his land, will be lost to him or his descendants. It is this spirit of thorough cultivation, of permanent improvement, which can alone attach our people as they should be attached to the soil, and make the State what she deserves to be among her sisters. The farmer must labor intelligently, and with a well-defined object in view, or he will labor to little profit. Knowledge is not only power, but it is money. We see this truth illustrated every where, in all human occupations. We must know before we can do; and he that knows most in pursuit or business, no matter in what way he may have acquired his knowledge, will be sure to excel the stupid and the unimproved.

North Carolina may be divided into three parts, to-wit: the plains of the east, the rolling lands of the interior or middle region, and the mountains and valleys of the west. She occupies the best latitudes on the surface of the globe, being shielded by her situation from the extreme cold of the North and the blasting heats of the South. Every cereal or grain, every species of grass, every leguminous plant, every berry, every fruit-tree, and every vine, common to the temperate zone, together with rice, tobacco and cotton, attain perfection in her soil. Her timber of various kinds, and her naval stores, are more abundant than those of other States and equal in quality to the best. From the county of Nash to the Tennessee line, her hills and mountains are richly stored with minerals of all kinds; while nearer the ocean, and almost on its very shores, are elements of nutrition for the soil, and stone marl for building purposes, unexcelled in other quarters. Her swamp lands, situated in the Eastern Counties, though they have long been a source of profit, and though at this time they are attracting more attention than heretofore, have never been sufficiently appreciated. It is estimated that at least one million of acres of these lands, capable of yielding ten barrels of corn to the acre, are still unreclaimed, and consequently unfitted for cultivation. Estimating their yield at eight barrels to the acre, it would give eight millions of barrels, which exceeds the corn crop of the entire State in 1849, by two millions of barrels. In productiveness, and in the sustenance which they will afford to animal life, these lands are destined to become the Egypt of the South. They are so rich—so well supplied with organic and inorganic matter—that they will wear as well as the best bottom lands of Arkansas or Texas. There are lands in Hyde which have been cultivated in corn for nearly a century, without any apparent diminution of their fertility. Lands like these, whether so naturally or rendered so by art, are really more valuable to the State than naval stores, or mines of gold and silver. The best evidences of wealth always consist in fat cattle and poultry, fine horses, good mules, handsome and well-constructed dwelling houses, stables and barns, and well-fed and well-contented laborers; and these evidences are generally seen on fertile, well-conducted farms. Gold and silver, and naval stores, though property in themselves, are only the means for obtaining these results. Yet every pursuit is to be commended in its time and place, inasmuch as a just distribution of labor, created by a diversity of pursuits, is indispensable to a high state of civilization and refinement.

Our leading staples are rice, corn, wheat, tobacco and cotton. The value of the tobacco crop of the United States in 1858, was one hundred and seventy-eight millions; its value this year, at the generally received estimate of four millions of bales, cannot be less than two hundred millions. The value of four Southern products—rice, sugar, tobacco and cotton—rose from sixty-six millions of dollars in 1840, to two hundred and thirteen millions in 1858; and of this all but fourteen millions were due to cotton and tobacco. There is no prospect that the British and French governments will succeed to any considerable extent in producing cotton in Asia and Africa. Even if the plant should mature, and yield as well there as here, involuntary or slave labor is wanting, without which this staple cannot be successfully cultivated. Experience has shown that we can sell as much rice, wheat and corn as we can produce; while the extension of our commerce to China, Japan and other

quarters, and the increased use of tobacco in our own country, give assurance that the cultivation of this plant will continue to be profitable. North Carolina produced in 1849, about twelve millions of pounds of tobacco, and about seventy-five thousand bales of cotton. That both these crops have doubled since that time, I entertain no doubt. The demand, then, for these staples must increase; and this demand should operate as a constant stimulus to our farmers. It would be better for them, and better for us all, if they could reach their own sea-ports with their produce, and dispose of it on advantageous terms; but if they cannot do that, let them make all they can, and sell all they can, to whomsoever will buy.

The culture of the grape for table use and for wine, is at present exciting attention in North Carolina. That a considerable portion of our territory, extending from the seaboard to the Cherokee mountains, is adapted to the culture of the vine and that this business will be profitable when judiciously pursued, there can be no doubt. If common wines were as cheap in this State as they are in France and Germany, they would soon become the prevailing beverage, and would banish the vile compounds, which, under the names of whiskey, gin, rum and brandy, are now so productive of drunkenness, and so injurious to the souls and bodies of our people. The use of "wine, that maketh glad the heart of man," is not forbidden either by divine or human law. In the language of Dr. Hooper, whose sobriety and piety no one will question, "what God gives as a tonic and stimulant, along with the nutriment of man, cannot if soberly and prudently used, be hurtful either to body or mind." He advises the culture of the vine for wine. Referring to the "light, giddy and impetuous French people, he says, their 'superior sobriety cannot be attributed to any moral cause, and is probably due to the fact that a cheap and innocuous beverage is accessible to every body.' Mr. Jefferson expressed a similar opinion sixty years ago. It is the interest of all classes to encourage the culture of the grape. Let us hope that the efforts which are in progress here and elsewhere in the State, to produce grapes in perfection, and to manufacture a pure and cheap beverage in the form of wine, may be crowned with success.

Agriculture and the mechanic arts have been greatly stimulated in this State during the last six or seven years, by works of internal improvement. No people can hope to prosper without means of communication with the markets of the world.—If North Carolina began at a late period to project and establish these means of communication, and if large and fertile portions of her surface are still unfortunately cut off from markets it cannot be said that she has moved slowly since 1848. Ten years ago the Raleigh & Gaston Road was in a languishing and almost worthless condition; the Wilmington & Weldon Road are paying handsome dividends; a Road has been constructed from the sea at Beaufort to the Catawba river westwardly; the Manchester Road has been completed; a portion of the Road from Wilmington to Rutherford has been constructed; a ship channel has been opened along our coast, connecting our seaboard by inland navigation with the Chesapeake Bay; a Road has been projected, and is now nearly completed, from this place to the Coalfields on Deep River; and various other enterprises designed to facilitate and cheapen transportation and travel, are engaging the attention of our fellow-citizens. The day is not distant when the iron horse, with thundering hoof and lungs of flame, will dash through the swanannan gap, and thus unite together, and unite forever, the people of the East and West. Let those who have so long labored and looked for that day, take courage. The State is pledged to the work. It may be retarded or postponed, but it will be done; for North Carolina has never yet pledged her faith in vain.

Our State and County taxes are thought by some to be heavy and almost oppressive; yet I am sure they are not as heavy as those of many other States. But what would be our condition if we had no public works?—if our Railroads had never been constructed?—or if they were now arrested in their operations? Are there any among us who would prefer such a condition of things to the prosperity which is so apparent in almost every department of industry, and which is the result in a large degree, if not entirely, of internal improvements? Emigration has nearly ceased, and our population is increasing.—The next census will most probably show that North Carolina contains one million of inhabitants. One of our Railroads is paying twenty-four thousand dollars per annum into our Common School Fund; while two of them are together contributing about ninety thousand dollars to the Sinking Fund, which has been created to pay the principal of the State debt as it falls due. Why, gentlemen, the income of a portion of our people West of Raleigh—the fruit-growers—is at least equal every year to the interest on the whole of the public debt; and but for Railroads not one bushel probably of the article of commerce which yields this income, would ever have reached the Northern markets. This portion of the State, fellow-citizens