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"Hated to England"

Is as much a disease, as Hydrophobia; and the victim of animosity to the staid mother land, is about as capable of being reasoned with, as a subject of the dog bite. The Chronicle of the 6th ult. has two articles full of this national virus--one in Poetry, by a play-writer named Bokan, and the other by our usually good-spirited correspondent, "S. H. F."--"Anglo-American" having taken the latter into custody, we deliver him over to his tender mercies.

Both the gentlemen, whose attacks upon poor little England appeared simultaneously, base the occasion for their diatribes upon the charge that English recruiting-officers were beating up volunteers for the Eastern War, from our Atlantic cities; and Mr. Bokan from that fact pours forth a volley of invective against England, as a proof of its "helpless shame and helpless woe." We interpret the circumstance very differently. We take it as a proof of the progress of the English people in good sense, in patriotism, and in power. In good sense, because in former days the bounty, the drum, the gaudy tinsel, and the intoxicating cup were almost always able to gain sufficient recruits to the armies, in any contest; now, it would seem that with all these combined, the young men of England are not such fools as to volunteer to be shot at for 6 or 8 cents per day, and the recruiting officers are trying America as a more promising field. In patriotism, for England never lacked men for her own defence, and now grants supplies for any amount to defend a weak neighbor from a worse than Gothic invasion. In power, because the day has been when Englishmen were forcibly impressed to fill the army and navy, whether they would or not; whereas now they can not be thus dragged from home to a foreign soil or an undesired service. In every respect, we deem this alleged fact an indisputable proof that the rights and the intelligence of the people of England are increasing, and that the Government is yielding more and more of power and justice to them.

Now, we would institute the inquiry, what is the condition of the Russian people in the same respect? Russia has not the sympathy of any nation, although family connections--an odious Oligarchy--may yet make the Government of Prussia throw its strength on the side of Russia. In the United States, journals like the *Pennsylvanian* may pretend to favor the Russian cause; and a few infatuated, eccentric persons, like Senator Douglass, Mr. Baker, &c., may allow their chronic hatred to England to degenerate into love for Russia. But, after all, the World regards Russia as a heartless, grasping, oppressive, God-defying power. And notwithstanding the Emperor in his capacity as Head of the Greek Church (?) has done his best and his worst to make his subjects believe they are required in a religious war, and instil into their ignorant breasts the fire of fanaticism, still, the people of Russia have no heart for it. In addition to the other evidence before the public, *Dickens' Household Words* notices a recent publication, in 350 pages, of the observations of an intelligent English lady who has just returned from a ten years' domestic sojourn in Russia. We extract a few proofs of the actual state of affairs in Russia:

"It is hard for us in this country to conceive the misery attending the terrible conscriptions which plague the subjects of the Russian empire. Except recruits, hardly a young man is to be seen in any of the villages; the post roads are all being mended by women and girls. Men taken from their homes and families, leave behind them broken ties and the foundation of a dreadful mass of vice and immorality. It is fearful enough under ordinary circumstances. 'True communism,' said a Russian noble, 'is to be found only in Russia.' One morning a poor woman went crying bitterly to the English woman, saying that her two nephews had just been forced from her house to go into the army. 'I tried'--we leave the reader of these things to speak in her own impressive words--'I tried to console her, saying that they would return when the war was over; but this only made her more distressed. 'No,' no! exclaimed she, in the deepest sorrow, 'they will never come back any more; the Russians are beaten in every place.' Until lately the lower classes were always convinced that the Emperor's troops were invincible; but it seems by what she said, that even they have got to know something of the truth. A foreigner in St. Petersburg informed me that he had gone to see the recruits that morning, but there did not seem to be much patriotism among them; there was nothing but sobs and tears to be seen among those who were pronounced fit for service, whilst the rejected ones were frantic with delight, and bowed and crossed themselves with the greatest gratitude."

Reviews were being held almost daily when the English woman left, and she was told that on one occasion, when reviewing troops destined for the South, the Emperor was struck with the forlorn and dejected air of the poor wretches whom he was sending to the slaughter. "Hold your heads up!" he exclaimed angrily, "why do you look so miserable? There is nothing to cause you to be so!"

But it did not mean to tell about the war. The vast empire over which the Czar has rule is in a half-civilized--it would be almost more correct to say in an uncivilized state. Great navigable rivers roll useless through extensive wilds. Except the excellent roads that connect St. Petersburg with Moscow and with Warsaw, and a few fragments of road serving as drives in the immediate vicinity of those towns, there are no roads in Russia that are roads in any sense.

The rapid traveler who follows one of the two good roads and sees only the show places of Russian civilization, may be very much deceived. Yet even here he is deceived only by a show. The great buildings that appear so massive are of stucco brick, and even the grandeur of the arches, like that infinitely greater work, the Pyramids, is allied closely to the barbarous. They were constructed at enormous sacrifice of life. The foundations of St. Petersburg were laid by graves of men who perished by hundreds of thousands in the work. One hundred thousand died of famine only. The civilization of the Russian capital is not more than skin deep.

That is Russia--a gigantic, spy-infested despotism, blind, soulless, careless of every thing but its own aggrandizement, and resolved upon that at any cost, without regard to the happiness of the people or their improvement in anything which does not tend directly to increase the martial power and the brute force in the hand of one irresponsible man--a man whose Will is Law, and who in the use of his unfeeling resources--the Knout and Siberia--can only be as Talleyrand declared, "tempered by assassination" and ameliorated by poison!

What England is, in manners and morals, in the happiness and intelligence of her people, in her constitutional government and her high state of legal liberty, in the arts and sciences--in short, in every thing which ennobles and elevates human nature--let history speak. Her monarch never does, never dares thwart the will of the Parliament; the Parliament does not trample upon the prayers of the people. A Cabinet unsupported by Parliament, resigns; a Parliament doubtful of the approval of its constituency, is dissolved! The liberty and power of the people will compare favorably with any nation on earth--the United States not excepted. Our President and Congress will not resign their power until compelled to do so by the force of elections, no matter how they may be condemned by the voice of the people. That England has glorious faults, is not denied; but considering her advantages, the United States has greater sins; and contrasted with Russia, England is immeasurably her superior, in every particular desirable.

England has found that Raglan and other of her officers, once brave and active, are now poor leaders in war; the United States learned the same lesson in the case of Hull, Dearborn, Wilkinson, Smyth, &c. Our short annals confess more disastrous campaigns against English dominions, than England has to own of bloodless ties against Russia.

That England "re-annexes" foreign, barbarous nations, is true; she states in the "manifest destiny" of the "Anglo Saxon" race; but the United States has improved upon her example by "re-annexing" parts of a neighboring, sister republic!

England has emancipated millions of slaves; she is constantly softening the oppression of "caste" in her dominions; and the remnants of her own feudal system are crumbling away year by year. America has bought new slave territory; has fought for more slave territory; has established sacred compacts to gain more slave territory; and is now engaged in every law and practical plan to steal more slave territory! Our nation is abridging, and not extending, human liberty!

In politics, England not only has enlarged power in every Court in Europe, in Asia, in Africa, in South America, but the Tariff Laws of our own country--the rebel daughter--have been adjusted by "English hater's" *par excellence* exactly to her liking!

A few years ago, our people were jealous of the U. S. Bank, because Englishmen owned a few thousands of its shares. Now, Englishmen control whole Banks and Railroads in the United States; and many of the State Governments are living with the money loaned from the "rag barons" of England!

Notwithstanding all this, hatred of England is the stock in trade of half our political demagogues--most of whom do not know when they are playing directly into her hands. For seventy years, on the Fourth of July, and nearly all public occasions, this hatred has been nourished by profound statements and eloquent orators. In many an "Albion of Liberty," and thousands of debating schools, the British Lion has been almost weekly seized, chained, killed, and disembowelled; and yet "he lives," and his roar is that of a monarch among his kind. The fast-anchored Isle still smiles serenely; "her drum beats around the world, and on her dominions the sun never sets."

But Mr. Bokan is a mere tyro in portraying with true "poetic license" the infancy and the decrepitude of Great Britain. One *John Tuckwell*, in his famous work "*Sing Fingal*," written 70 or 75 years ago, indulged in similar fancies, as may be seen by the following quotations from that book:

"For aye I'll see, tho' Britain rose,
Her horses tread the bloody plain,
Her conquering standard wave the main;
The duff with hymns her triumphs grace,
Of arms in war, of arts in peace;
Unharm'd by mortal eye,
Her rising towers flourish'd fair;
Who various wares with liberal hand,
By her own ports, or foreign trade;
But though so bright her sun might shine,
Twas quickly hazy'd to decline;
With fabled rage, she set a cage
The duff that chill the life of age."

"For aye I'll see, tho' she be doom'd as well,
Th' infatigable age to feel;
Her duff with hymns her triumphs grace,
Are we'll with every day's dispute;
Some states have done her wrongs,
Who's not of her own blood;
White o'ers have grown ill and duff,
Or turn'd despots, to be labour;
Each perfect labour and neighbour;
Or with hymns her triumphs grace,
Have broke their strength and lost their wile."

"This now, while Henry years prevail,
Good mother Britain would to fall;
Her duff with hymns her triumphs grace,
Of arms and duff, and duff of state;
That twice her wail could not discharge;
And now 'twas thought, so high thy growth,
With fabled rage, she set a cage
Her arms, of nations over the strand,
The source could ill above her head;
The final trump perhaps might give;
So long they were in strid mood,
Hunt to the hearing of all eyes;
From duff had put her in his wail,
Twas on the evening fall;
And duff o'er, as she grew weaker,
Began to wail her wail to pick her;
And now, her power's departed;
Her grand climatic had she past;
Fall in the vapour much by spell;
Strange whistles on her fancy struck,
Her memory fail, her judgment ends,
The quite forgot her nearest friends!"

Lost all her former sense and knowledge,
And fitted fast for Bedlam's cage;
Of all the poets she once wrote,
Conscion and pride alone remain'd;
As Eve, when falling, was no modest,
To fancy she should draw a dagger;
An evanescent, straw who long have slept on,
Will stay them, Justice, or Neptune;
So Britain, 'twas her aim so rightly,
New took a whim to be a martyr;
Tried on to sleep the rights of freedom,
Affirm'd her own sovereignty;
Would rather toil till her hair grey,
Than that she should suppress an acre;
Assum'd all rights divine, as grown,
The charity's look, like good Pope's Jan;
Saw all the world about her and skip,
To her slightly good ship;
And thought to teach the nations,
And now to live and rule forever,
Her servants humbled every whim,
And now at once her power supreme;
For fallen pleased in all their stages,
For sake of grapes and wagers;
In *Sydney's* *Chapel* then in state lay,
Sat up her own self to be a martyr;
Had lost all sense of eyes or wile,
Presum'd the poet's and right divine,
And call'd for worship at his shrine,
And for poor letters to turn us,
Bede North prepare his fiery furnace;
From his lungs with the British churches,
Infallibility to purchase;
But wife for peep the door,
Made friends to his British churches;
John'd both the nations firm in clan,
No sister made a better span;
No wonder then, ere this was over,
That she should make her children stray;
She was without pretence of reason,
Calm'd right, what'er she had to do on;
And with determined resolution,
To put her claims in execution,
Rode fire and sword, and call'd it, beauty,
Star'd us, and christen'd it, humanity;
For aye, she was our daughter,
Mistook the planet three in nature;
Had lost all sense of eyes or wile,
Took slavery for the bill of rights;
Tumbled at Wiles and down'd them soon,
And stopp'd at wily her low;
Styl'd her own children base and evil,
And knew us from the Indian natives."

From the New York Register & Register.
Savannah, April 14, 1855.

On Sabbath morning I attended divine service with the Presbyterian church, of which the Rev. Dr. Preston is pastor: he was absent, and his place was supplied by a New England minister.

In the afternoon I determined to hear Andrew Marshall, the veteran pastor of the African Baptist church. This soldier of the cross has a world-wide fame, and a very interesting notice of his pulpit services may be found in Sir Charles Lyell's travels. Mr. Marshall preaches in a fair old building, in its interior much resembling a New England country meeting house. The audience, without exception, was well dressed.

The preacher was 90 years old, on last Christmas day, and is therefore now in his 100th year. His voice has great sweetness and power; he read his hymns without spectacles--and such reading! in sober truth, I know no Northern "Doctor" that can read as well. It was read as Staughton used to read, and those who remember that style of giving out psalms, will long to hear Andrew Marshall. I came to church expecting to hear a wreck of a negro preacher--I found in the pulpit a master in Israel. Age has not touched his faculties, his mind is as vigorous, and his workings are as true and faithful as are the intellects of men of thirty or forty years of age. He preached for an hour an expository sermon on the man cut of whom Christ expelled the devils who were perverted to go into the herd of swine. The sermon will remain in my memory associated with the discourses of great men. The exposition was scriptural, argumentative, full of imagination, and abounding in wit, yet in all keeping with the place. I was reminded all through the sermon of three great preachers in the old country, each eminent in his peculiar way. I refer to Rowland Hill, Christmas Evans and William Jay. Marshall has much of the wit which emanated from the desk of Surrey Chapel, while the graphic sketching of the Welsh Demosthenes, and the admirable colloquial style of Jay, are found all through his sermon. He made more points of power in that hour than I have heard in any sermon for five years. I regard him as the most astonishing preacher I have ever listened to, when his age, his social position, and his illiteracy are all considered. No pulpit in New York or Boston but would have been honored by such a sermon: the limits of a letter will not permit me to give an outline, but it will live in my memory, and its illustrations would have been a stock in trade for a tyro in theology and many a sprig of divinity. Mr. Marshall's voice is euphonious, his manner dignified. Nothing but his white hair indicates his age, and I should never have supposed him over sixty-five, had I not been informed. I must not forget his prayer; it was man talking with God, reverently wrestling with God. He saw the portals of the city--had been often at its gates, and it seemed as he knew the holy ones.

Among the hearers were several white ladies and gentlemen, and I was glad to meet there with the Hon. Francis Granger and his daughter. They both unite with me in my high appreciation of the preacher, and Mr. Granger told me that he thought the reading of the hymn was one of the most impressive exhibitions of sacred oratory he had ever witnessed.

Mr. Marshall--then a slave--drove General Washington from Virginia to Savannah, and he observed that during the entire journey he never saw him smile.

THE DOOMED SOUL.

There is a time, we know not when,
A point, we know not where,
That marks the destiny of men
To glory or despair.

There is a line, by us unseen,
That crosses every path,
The hidden boundary between
God's patience and his wrath.

To pass that limit is to die,
To die as if by stealth;
It does not quench the burning eye,
Or pale the glow of health.

The conscience may be still at ease,
The spirit's light and gaze
That which is pleasing, still may please,
And care be thrust away.

But on that forehead God's aim set,
Indelibly a mark,
Unseen by man, for man as yet
Is blind and in the dark.

And yet the doomed man's path below
Like Eden may have bloomed;
He did not die, will not know
Or feel that he is doomed.

O, were it this mysterious bourne
By which our path is crossed,
Beyond which God himself hath sworn
That he who goes is lost!

How far may we go on in sin!
How long may God forbear!
Where does hope end! and where begin
The confines of despair!

An answer from the skies is sent!
"YE THAT FROM GOD DEPART,
WHILE IT IS CALLED TO-DAY, RETURN!
AND SALVAGE SOUL YOUR SEAR!"

Self Education.

The education, moral and intellectual of every individual, must be chiefly his own work. There is a prevailing and fatal mistake upon this subject. It seems to be supposed that a young man must be sent first to grammar school and then to college, he must of course become a scholar, and the pupil is apt to imagine he is to become the mere passive recipient of instruction, as he is of the light and the atmosphere which surrounds him. But this dream of indolence must be awakened to the important truth, that, if you aspire to excellence, you must become active and vigorous co-operators with your teachers, and work out your own distinction with an ardor that cannot be quenched, a perseverance that considers nothing done while anything yet remains to be done.

Rely upon it that the ancients were right. *Quis que una fortuna labor*--both in morals and intellect, we give the full shade to our own characters, and thus become emphatically the architects of our own fortunes. How else should it happen gentlemen, that young men who have had precisely the same opportunities, should be continually presenting us with different results, and rushing to such opposite destinies? Difference in talent will not solve it, because that difference is very often in favor of the disappointed candidate. You may see issuing from the walls of the same school--may, from the bosom of the same family--two young men, of whom one is admitted to be a genius of high order, the other scarcely above the point of mediocrity; yet, you shall see the genius perishing in poverty, obscurity and wretchedness; while on the other hand, you shall observe the *mediocre* plodding his slow but sure way up the hill of life, gaining steadfast footing at every step, and mounting at length to eminence and distinction, an ornament to his family, a blessing to his country.

Now, whose work is this? Manifestly their own. They are the architects of their own fortunes. The best seminary of learning that can open its portals to you, can do no more than afford to you the opportunity of instruction; but it must depend at last on yourselves, whether you are instructed or not, or to what point you will push your instruction.

And of this be assured--I speak from observation, a certain truth, there is no excellence without great labor. It is the *fiat* of Fate from which no power of genius can save you. Genius unexercised is like a poor moth that flutters around a candle till it scorches itself to death. If genius be desirable at all, it is only of that great and magnanimous kind, which the condor of South America, pitches from the summit of Chimborazo above the clouds, and sustains itself at pleasure in that empyrean region, with an energy rather invigorated than weakened by the effort. It is in this capacity for high and long-continued exertion--this careering and wide-sweeping comprehension of mind--and those long reaches of thought that

Fluck bright honors from the pale and mean,
And drive the dross to the bottom of the deep,
That follow the soul's march to the great,
And drag up dross to meet by the soul.

This is the process, and these the happy achievements which are to enure your names among the great men of the earth.

But how are you to gain the nerve, the courage for enterprises of this high and moment? We tell you--as Milo observed that *de signis tenes*; for this must be your work, not that of your teachers. Be you not wanting to yourselves, and you will accomplish all that your parents, friends and country have a right to expect.--*Writ.*

How We Pay Our Soldiers.

The regular army now consists of about 10,000 men; the militia force of 2,250,000. There are in the United States the astounding number of 120,000 gentlemen who hold commissions in the military service, and are, therefore, in the enjoyment of military titles.

The pay of a private soldier in the army of the United States is \$11 a month, "and found," but if he enlists for a second term of five years, he gets \$2 more.

The pay of a Major General is rather better. He is entitled to \$200 a month, fifteen rations daily, three horses, and four servants. But he generally takes his rations, horses and servants in the form of money, which raises his monthly stipend to \$375. The pay of his aid-de-camp, supposing him to commute for the four rations, three horses and two servants which he is entitled, amounts to \$141 a month.

The pay of a Brigadier-General, including commutation for twelve rations, three horses, and two servants, is \$246 50 per month. A Colonel of dragoons or artillery, \$183; Colonel of infantry \$166; Lieutenant Colonel of infantry, \$129; Captain, 79 50; Second Lieut. 54 50; Surgeon General, \$208 33; Surgeon of ten years' service, \$122; Assistant Surgeon of five years' service, \$98 50; Assistant Surgeon of less than five years' service, \$1 83. All officers above the rank of Captain are allowed one or more horses and servants, or an equivalent in money. One ration goes for twenty cents; one horse, 8 a month; one servant \$15 50

THE FARM: The Garden--The Orchard.

Written for the Lewisburg Chronicle.
Indian Octn.

Considering the great importance of the corn crop, we have thought that as the season for planting it is at hand, we could not occupy our agricultural space better, this week, than by reprinting the following remarks of Prof. Maxon, made at a meeting of the New York Farmers' Club. It is so complete an exposition of the subject that little needs to be added, and it will abundantly repay the studious perusal of our co-operating friends. Even if they do not adopt in detail the methods of culture here proposed, they may adapt the principles indicated to their own methods, though we are but little which may not generally be carried out in full. The recommendations to help out the inefficient supply of manure, such as Guano and Sphagnum-peat, of fine, seems so reasonable in itself, and is so completely sustained by experiment, that we are glad to find some of our enterprising cultivators are resolved to make an extensive trial of them the present season.

The point in this article which is likely to be most resisted by a part of our readers, is the advice to plough deeply for corn. We have given a number of strenuous advocates of shallow ploughing for the crop. We have ourselves seen in a few instances very good yields on land ploughed only four or five inches, but never one which seemed to be owing to the shallow ploughing, or where we did not think it would have been better to have ploughed deeper. What can be the hazard deep ploughing for corn? It is a well known fact, that its roots grow in a thoroughly mellow soil, can be traced by the eye to the depth of five feet, and doubtless the microscope would follow them much farther. What has God given them this tendency for, if they are not to be helped to descend? Even if all the nourishment in a particular soil lies immediately at the surface, still, if the deeper earth be not actually poisonous, it may advantageously afford moisture at least from the greater depth.

Without question, such cultivation is more expensive than that of a superficial character; but the prospect of prices will well warrant more than usual costs. And if thorough tillage prevents skimming over so great an extent of surface, we think those who have to buy what is called water now at twenty-five cents a pound, as well as corn at a dollar per bushel, will agree that a double advantage is gained by getting more corn from fewer acres, and letting the rest of the farms "go to grass."

INDIAN CORN.

The subject of the day, Indian Corn, is by far the most important subject which has been presented to the consideration of this Club. It may be said to be the staple and peculiar crop of our country. To it we are indebted, in a very great degree for our present prosperity. The export of this crop is fast becoming the *Hydra* of famine throughout the world. Whenever Europe is short of food America stands ready to supply the deficiency with the excess of her own crop; and every American should feel a reverence for the corn plant beyond all others. No plant is more beautiful and none so well suited to the variousness of our climate; for anywhere between the 44th degree of north latitude and a corresponding parallel south, it may be grown in the greatest perfection. Its mode of hybridization has produced innumerable varieties, suited to every kind of soil and every degree of temperature. We have it suited to summers, varying from three to six months; thus we find it in the North ripening but half the time for its growth that is requisite in the South, and still in good harvest we find kinds appropriated to the different length of the summers. We may say of the Indian Corn crop of America what Mr. Webster said of the Turnip crop of England, that "its failure for three successive years would nearly bankrupt the Nation." Fortunately, however, by the recent improvements in agriculture we are enabled in the growth of this crop almost to defy drought and to render every variety of soils suitable for the production of maximum quantities. It is the food of both man and animals; and even its stalks, by proper treatment, have been rendered equal in value to the whole labor and expense of raising the crop. To it we are indebted for our beef, plentiful supply of pork, and to itself as an article of food. By it every freeman in our broad country is enabled to secure means almost as freely as the wealthiest citizen, and not, like the peasantry of Europe, confined to use to a great degree of their own food alone. We can obey the command not "to muzzle the ox that treads the corn;" the Indian corn crop of the United States, at this time, exceeds 700,000,000 of bushels, per annum; and when we remember the fact that the average crop of the country does not exceed 25 bushels per acre, and yet that often 100 bushels per acre have been produced, it can readily be seen that the value of this crop, instead of being \$300,000,000 per annum, as at this time, may be increased by proper culture that its value may yet at night the necessity for new El Dorados. It is the plant of our country, and the olive branch might with propriety be taken from the claw of our national emblem, and the Indian corn plant substituted in its place. Joel Barlow well said in his ode to "Hasty Pudding":

"My best remembrance in the grateful glow
No mention'd; I praise myself in this.
My fellow-lodgers dine through his length of days;
For these his fields were sown with manure;
From them, what health, what vigor he possessed,
The sturdy throngs spring from his arms;
The consolation meet my natal scene,
And all my letters were made of Indian corn."

I will not tire the club with enumerating statistics relating to this crop. It is sufficient to know that the number of hops fattened on corn in the United States is scarcely less than the number of its inhabitants, and that the quantity of hard coal now exported to Europe, and I am sorry to say, again returned to us in large quantities as olive oil, after purification, is so great as to form a staple of export. The

sugar estates of the West India Islands and elsewhere are mainly sustained by the use of American corn meal. When our Congress gentlemen, shall become convinced of the necessity of a Department of Agriculture, the farmers throughout the United States may then know the means by which a few of their number are enabled to raise four times the average crop of the country per acre. On the present occasion, I propose to enter fully into the best modes of culture. There of course must differ in different parts of the country. The same culture which will answer for the small farmers of the Atlantic seaboard would be impracticable in the immense corn-fields of the far West; for there the amount of labor which may be judiciously and profitably applied would be impracticable here; and hence it will be necessary to state the methods applicable to different districts. Land at \$200 per acre and at 85 per acre cannot generally be manured alike, even although their constituents and requirements may be the same; for the cheaper lands are so far from the manufacturing districts that in some cases the necessary amendments to be used as manure for the soil cannot be obtained, and scarcity of labor requires the use of tools by horsepower in place of any other mode of culture, and that of the simplest and most expeditious kind. It is known to those who have observed closely, that the roots of the Indian corn plant, in soil prepared to admit of their full ramification will average in length 52 feet, and hence the necessity of deep and subsoil plowing for this crop, must be evident to all. When the constituents of this plant shall be spoken of, it will be evident that its inorganic requirements, received principally, in many soils, from the subsoil, render deep disintegration necessary. It will also be evident that soils habitually wet cannot be profitably employed in the growth of corn without thorough drainage; for soil surplus water ceases to occupy the spaces between the particles of the earth, atmosphere cannot enter. Nor can the pulverulent condition of the soil result from this disturbance by the plow during the growth of this crop, if partially immersed in water, for their surplus water acting as a lubricator to the particles, causes them to settle in so compact a form that the corn roots cannot travel freely in search of their proper aliment. The different modes of culture adopted, should always embrace such manipulations as will give the greatest amount of disturbance to the soil with the least amount of abrasion to the roots of corn, hence the original preparation of the soil before planting should be such as to secure the most mellow condition, and to the greatest depth. This will be perfect security from drought, for wherever air can circulate among particles of soil colder than itself, it will deposit moisture, therefore corn grown on subsoiled land free from excess of water never suffers from drought. The after cultivation during the growth of the crop should be such as to render the surface at all times penetrable to the atmosphere and free of parasitic growth.

The importance of our subject must be my excuse for entering thus minutely into detail. Of what is the Indian corn plant composed? what means can be adopted to supply such as are missing from the soil? It is well known to you that I have full reliance in the doctrine of adding to the soil such constituents of crop as may be missing from it; and by presenting the proper conditions and necessary stimulants for their appropriation, that they will be taken up by the plant and that success is certain under such treatment. You are also aware that I received from your institution a premium for a corn crop raised by the use of amendments costing less than \$3 per acre but which had the previous year refused; and that this crop was raised on soil which had by analysis been found to be absent from the soil and required by the crop. The details of that experiment have been published many times. I will, therefore, refer in brief to the analyses of the corn crop. You are all aware that these are different in different stages of growth, and they have been so often published that it would be unnecessary to repeat them separately. I shall therefore, speak of the necessary constituents of the soil for the entire completion of the corn crop, embracing all its stages of growth. You are, doubtless, aware that the surface of the corn stalk has a coating of silica, which gives strength to the stalk. Indeed it is to be found throughout the stalks, leaves and grain, and when insufficient in quantity, a perfect organism of the plant cannot be maintained. The silica is the base of that, the base of common sand, and as found in some soils is insoluble and cannot be appropriated for the use of the plant. When, however, the soil has a sufficient amount of alkalies which have the power to combine with silica, and thus render it soluble, the plant can readily receive and appropriate it, and from this fact arise the necessity in part for the presence of those alkalies. Analysis shows that corn requires potash, soda, lime, magnesia, and that each of these is capable of rendering the silica soluble and ready for appropriation; hence soils deficient in potash, lime, or soda can seldom be made to produce a full corn crop, and in soils which are very deficient of those constituents, the use of barn-yard manure will not give their separate addition, will not give full corn crops. Among the necessary constituents of corn, phosphoric acid is the most important; thus we find that Letellier in his analysis of the ash of the kerocle states, that 50 per cent. is phosphoric acid, 30 per cent. potash and soda, and a trace of sulphuric acid. As minute as the amount of sulphuric acid may seem to be, it is most necessary for the success of the crop. But the phosphoric acid is most important of all. Fields, which have been prepared for a series of years for the food for growing animals and which consequently become denuded of phosphoric acid to

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