CAMBRIDGE CHRONICLE
AND
Maryland Weekly Advertiser.

[New Series—Vol. I—No. 23.] CAMBRIDGE—SATURDAY, NOVEMBER 10, 1827. [Vol. IV—No. 175.

Printed and Published by
GEORGE W. CALLAHAN
N. E. corner of High and Poplar streets.

AN ADDRESS

Delivered on the 29th of October, 1827, at the third Annual Exhibition and Fair, of the Dorchester Agricultural Society, at their tent, before the members of the Society, and a numerous audience of other gentlemen and ladies: By Dr. JOSEPH E. MUSE, President of the Society.

Fellow-Members and Friends of our Society:—It is once more my gratifying duty to greet you: not on the arena, gorgeous with emblems of vanity and of folly, with gilded columns, statues and parapets, for pompous exhibition or sanguinary contest; but upon the unadorned theatre of nature; for a friendly, though zealous emulation, for the palm, to be awarded to the richest possessor of rural virtue, and talent; to offer and receive gratulations on the arrival of another, a third anniversary of our popular and auspicious institution, and upon the evidences, which surround us, that no empty ostentatious words, or chimerical views, but operative, and fruitful deeds characterise its designs.

In addition to the improved stocks, and other numerous results of a hardier and more laborious attention, we are presented with multiplied evidences of cultivated taste, and fine execution, displayed by our ladies in their manufactures: whether these efforts be viewed as exemplary to the community; as proofs of *well-timed* economy, and judicious co-operation on the part of their fair authors, to relieve domestic pressure, or, as demonstrations of native inherent virtues; the effect will be the same; the philosophic mind, indeed the soul which is not dead to every moral impulse, will feel a transport of joy, at associations so full of kindness, sympathy and active excellence.

Thus we have secured, for our costs and toils, an ample equivalent: and we have not only a present possession and a flattering promise, in regard to our own interests; but the gratification of an intuitive and paramount sense of parental affection and duty; by transmitting to a grateful posterity, the *example*, the *fruits* and the *records* of a *moral, intellectual* and *social* life.

Upon sentiments so obvious and just, I will not occupy your attention; but will offer a few reflections, which my small experience and studies of agricultural subjects lead me to believe worthy of communication and subsidiary to our designs; it is a contribution, that each member of the society is equally bound to render, as far as his research or observation of the works of nature may enable him; and I may take this occasion to express a regret that the archives of our institution contain so few instances of regard to this important duty, to the observance of this maxim of moral truth: 'Prestat naturæ voce doceri, quam suo ingenio sapere.'

By investigating the operations of nature, we discover our numerous errors; by the discovery and record of those errors, we approach the truth; by the observation and comparison of results, qualities and properties, we are enabled to form a correct judgment of the respective value & character of things and of modes; the human mind possesses no innate, abstract sense of truth or error; but by the divine faculty of reason, exercised upon observation, it masters all difficulties and accomplishes all reasonable designs; and thus it is, the cultivator of the soil must obtain the knowledge he is in quest of; his detection of one error will advance him one step to the attainment of truth; as the celebrated Morveau has justly remarked, "we never profit more than from the unexpected results of experiments which contradict our analogies, and preconceived theories;" a frank, mutual and unreserved communication of these discoveries by the several members of a society entertaining the same objects and the same interests, will necessarily multiply those profitable steps; it will hasten our march through the devious path of research in the ratio of the performance of this, our relative duty.

Another resource is to be found in books and periodical publications connected with agriculture; among these, it is gratifying to repeat the often named, and well known eminence of the "American Farmer," edited in Baltimore by John S. Skinner, Esq. yet the small patronage in Dorchester, of this invaluable work is calculated to produce a correspondent mortification; also (for it is not too broad a scope for the practical farmer) may be named the American Journal of Science and Arts, conducted with preeminent abilities by professor Silliman of Yale College; it contains the most modern improvements and discoveries in chemistry, Botany, Geology, Mineralogy, Mechanics and most of the useful Arts and Sciences associated with Agriculture; accumulated by American enterprise, from the literary funds of the universe; and by the universe except at home, exalted; this work to be commanded, annually, at little more than the price of a common country newspaper; not surpassed, for the judicious selection or original matter, by the experienced and well supported Journals of Europe, is suffered to languish for American patronage; patriotic pride abstracted from the intellectual enjoyment, which it offers to the rational mind, should impel us to sustain this able demonstration of American character.

If the sarcastic epithet of "book learning" shall have operated to delude the judgment; if the frivolous weapon of ridicule shall have penetrated the mind with poisonous impressions, to the prejudice of this channel of knowledge, we must apply the antidote, by the exercise of that faculty, with which, *omniscience* has seen fit to distinguish man; thence, we shall learn to appreciate the labours of others, and to regard with diffidence the self sufficient competency of individual attainment.

In no art, in no science, has one individual been so fortunate as to reach this climax of supremacy; we must look to, and respect the observation of others, as well as ourselves; and its *graphical* character, or its *publication*, cannot be presumed to impair the truth or diminish the importance of the subject matter.

In conformity with the principles which I have assumed, I shall offer in the most concise manner possible, a few reflections on some points of agricultural practice and theory, to assist in the proscription of some gross and fashionable dogmas, founded in false reasoning; or, perhaps, in the absence of this faculty, the offspring of *accident*, fostered by the overruling influence of *custom*, into a formidable existence, detrimental to our local interests, and possibly to those of American agriculture.

Among those most conspicuous for their pernicious consequences, may be named the *error* of *deep seeding*: the *error* of *thin seeding;* the *error* of *untimely seeding*, in regard to season; and the injudicious adherence to usual crops, regardless of climate and of other circumstances, and, in obedience to an obstinate and irrational attachment to a customary rotation, because it is customary; and when it has ceased to be profitable; and lastly, the *error* of *too extensive cultivation.*

Of those dogmas, that of deep seeding, and that of thin seeding, are intimately connected, and may readily be associated under one view.

The effect of the former upon the grain is to multiply the culms, and to substitute or countervail a paucity of seed, but the energies exerted for this purpose, are morbid, excessive and debilitating to the embryon plant, and to its subsequent growth.

The first process of vegetation from the seed, is the disclosure of the radical descending into the earth, & the plume which is elevated by a central stem, the caudex into the atmosphere; it is a physical truth advanced upon eminent authority, that nature has affixed to every class, order, genus, and species of the vegetable world, their respective length of caudex, by as distinct limits, as she has bounded the extension of the stalk, body and boughs, after their expansion in their proper element; yet with providential care, she has endued them with a recuperative or self preserving power, to elongate the caudex, if accident or design shall have buried them too deep in the earth, for its natural structure to attain to the surface; and to effect this, new efforts are made, by the multiplied growth of new and less vigorous caudexes, each from the terminating joint of the former, issuing forth new stems: these derive their support, at this stage, from the oil, mucilage, gluten, farina and other proximate principles of the seminal grain, as exclusively, and essentially, as the embryon chick, from those of the animal egg; and thus expending upon many, the supply of parental nutriment, designed for a few, and necessarily enfeebling by the multiplication, the offspring of the parent seed, its energies will be exhausted, and its health and vigour impaired.

From these considerations may be deduced, the errors of deep seeding and thin seeding, & the propriety of throwing into the earth, as much seed, as the powers of the soil may sustain, without having recourse to the artificial mode of supplying the deficiency, by the multiplying effects of an unnatural depth; & though extreme fertility of soil, fine tilth, and propitious seasons, may partially atone for the error, yet, cœtis, paribus, copious and shallow seeding, modified by circumstances, on which the judgment of the farmer must be exercised, will afford the best prospect of a rich and luxuriant vegetation; which theory and practice, the results of my experiments have fully settled to my own conviction.

The error of untimely seeding I have frequently to my disappointment and mortification, reluctantly witnessed, the too late seeding of my wheat, and the too early planting of my corn and cotton, have considerably curtailed my harvests.

A large majority of my cotton of this year, was planted on the 1st of May, and was up by the 15th of the month; a small portion was planted the last of May, and came up on the 10th of June: frequent cold rains more usual at the former than the latter season, foiled the first, in its germ; from which it has never fully recovered; while the latter planting, under a well timed season has grown and flourished without a check.

Most plants have their favorite seasons; and the probability of accommodating them in their habits and preferences, should control the seed time; the anticipation or delay of this period, will be generally attended with disappointment.

Though many may deny the irritability of vegetable life; yet all will consent that some plants will endure a higher and some a lower degree of temperature than others; that, that degree for which they have a natural or acquired appetency, can be but gradually changed, in consistence with their health; and that sudden vicissitudes of heat and cold, are pernicious to all, but more especially to some, and in their earliest development.

These facts are infallibly true, and whether we gratify our vanity by confining to a higher order of beings the attribute of irritability, or allow it to be extended to vegetable life, the deductions will be the same; 1st, that it is consistent with the health and growth of a plant, to select for the period of seeding, that point of time, which will afford from experience, the quantity of heat, and the course of season which is conformable to its habits, whether these be native or acquired: 2dly, to fix this period as remotely from the season of winter as the course will allow, that the sensitive fibrils may not come within the reach of excessive and destructive changes of temperature; from which the young plant, once affected, seldom fully recovers: 3dly, not to risk a period out of time, though apparently promising, or because such a one may have been attended with a fortuitous success; but to adopt that, which is predicated upon the usual climate and habits of the plant.

Though chance may embolden us to deviate from general rules on this subject, yet success will more generally attend their observation.

Unfortunately, the Hessian fly has thrown our wheat crop too much upon the winter, a circumstance greatly conducive to the disasters, for many years incident to this, our once most valuable staple; one, whose loss we must deplore; one, I emphatically predict, gentlemen, you will not shortly regain; and from which you must consent to release, what I will venture to pronounce your natural inveteracy of attachment.

The fly, the long culture, the change of climate, want of market, or deficiency of demand, most imperiously call upon you, to rid yourselves of this incubus; to divest yourselves of this bewitching infatuation, this morbid addiction to ancestral customs and practices, which though consistent with the best and kindest moral feeling, is pregnant, in this instance, with physical evil.

Numerous crops better adapted to our present climate and our present market, are within our command; it is a duty we owe to our country, our neighbours, our families, & ourselves, by inquiry, by experiment, by every mode of research, to explore the vegetable kingdom for such as will best suit our purposes; to discover if possible, and promulgate the results, and receive, if no more, the self approving consciousness of having performed our obligations, as well to God as to man; of having applied those talents, with which he may have seen fit to endow us, for the promotion of his great design, the happiness of his favorite creation.

The deplorable misfortunes of the agriculture of this county; indeed, of this state; and perhaps a wider extent, for this and a few years past, call upon us; not for despondency; it is unmanly; it is unrighteous; but, for redoubled exertions, well directed efforts to regain what we have lost, to supply those wants, those enjoyments, those luxuries, the fruits of agricultural labour, which providence has placed in our power; by the proper exercise of those faculties with which she has kindly invested us.

Among the causes which have led to agricultural distress, perhaps none have had a more steady operation, a more effectual agency, than that, which I proposed for discussion, as the last, and possibly the worst of enumerated dogmas; one which is repugnant to the dictates of experience and of theory; and could the expression avail, I would venture to add, of common sense; it is an overweening sentiment, in favor of "*extensive cultivation*" without regard to competent abilities.

This may be pronounced a general and radical error of Maryland Agriculture; it is, in this county, one of the most prominent, and one of the most disastrous, practically, in our agricultural community; and it would seem that we had been riveted to it, by some demon-chain, for past offences, for which, we must atone; it is one, whose detection needs neither the abstruse research of the metaphysical inquirer, nor the profundity of the mathematician; it is one, within the reach of the simplest school boy, who knows the quotient of two in four, and yet it is one, which most of us adopt and practice, because it is adopted and practiced.

Three hundred acres of arable land constitute a usual farm in Dorchester, for a beginner, without experience, and without the means of stocking and cultivating one half, probably one fourth of the quantity: these are laid off into three fields, one, for wheat which he knows he can't grow, one for corn, which he knows he can't sell to repay him for his labour: and one, (call'd an old field) for nothing, except possibly, a few impoverished cattle, fit emblems of his forlorn and hopeless system.

This is notoriously the general practice of Dorchester; it is one of those morbid addictions, based upon custom; it is one of those ancestral relics, one of those sanctified patrimonies, which the habit of devotion, seems to have made sacrilege to violate, and it is ruinous, as it is general and steadfast.

It is demonstrable, that one acre which is manured and well cultivated, is worth many of our common lands.*

The expense of cultivating one poor acre, yielding five bushels of grain, a fair average of our wheat crop, is as great as that of a rich acre, yielding twenty bushels; but the one yielding four times as much as the other; the expenses of cultivating the one, will be in reference to the crops, only one-fourth of those of the other; and this ratio of three-fourths of the expenses saved, on a farm of usual size, will make a considerable improvement in the profits of the cultivation.

This gentlemen, is not visionary; it is easy too, of adoption and of practice.—Consent to devote your attention to one-fourth of your present undertakings; concentrate upon this, the energies you had dispersed on the whole, and it is adopted. And what do you gain by it?

Grant the cost of cultivation of an acre, to be two dollars for rent or interest of purchase money, and two dollars for other expenses—making four; and grant you have made five bushels of grain, and sold it for one dollar per bushel, making five dollars; deduct your expenses before stated, at four, & you have only one dollar, for profit. But apply your improvements to one acre which you intended for four, and you will thenceforth have the product from one acre which you would have had from four; that is, twenty bushels at the price allowed for the former, will be twenty dollars; from which deduct expenses of one acre, as before stated, at four dollars, & your profit will be sixteen dollars on the acre, instead of one; or, an advance upon the intrinsic value of the capital, equal to fifteen hundred per cent; with less trouble too—because you have less space to cultivate; and with less uncertainty, because the richer the soil, the more rapid and vigorous the growth; and the more rapid and vigorous the growth, the less subject to casualties.

In truth, the question I am discussing, is so plain, that I touch it with embarrassment; yet I press it for the necessity, the prosperity of that class of society to which I belong, from which I derive my well-being, and on which I rely for the comforts of life, demand it of me, and will plead my apology.

Many errors of cultivation, beside those enumerated, might be adduced as concurrent causes of the present embarrassment; they are considerably within our control, and should be corrected. I have, on a former occasion, expressed my conviction of the existence of some of them, and the grounds on which it rested; and shall now only repeat, that, in the catalogue, that of an extreme paucity of crops, in point of character and kind, has had a considerable agency.

The advantages derivable to the soil, from a diversification of crops, were known to ages past: the classic farmer of Mantua, more than eighteen centuries ago, has recorded those sentiments, "Sic quoque mutatis requiescunt fetibus arva;" the practice was adopted in the highly cultivated region of Italy. It has been recognized, at all times and in all places where agriculture has flourished, until, in the modern age, Maryland, & some neighboring states, have seen fit to disclaim it.

By a mutation of crops, your fields are quasi—at rest; diverse proximate principles, diverse elements, in various proportions are called into requisition, for various plants; and their respective demands, when annually diversified, are supplied by the accumulation of a common stock; which, if otherwise perpetually drawn upon, must of necessity, be exhausted.

As a proof of my conviction of the truth of the principles of physiology and vegetable economy, which I have been endeavoring to support, I shall transfer them the next year, practically, and on large, to an experimental farm of one hundred acres of arable land, about eight miles from Cambridge, on the Transquakin river, to which I invite your attention. In the menacing aspect of the times, no apology is due for my design, or my invitation; no effort should be omitted or deemed superfluous, which may possibly meliorate the condition of agriculture.

Upon these lands I shall introduce, as far as the friends of our profession at home and abroad, or other opportunities to procure them may enable me, (which I now unreservedly and publicly solicit) every species of crop, apparently consistent with our climate, and our market, with a view to select such as will best answer the purpose of diversifying rotation to advantage; and I shall there have a full scope of experiment, for the principles which I profess to entertain, and further against those errors which I have theoretically and practically denounced.

To form a judgment of those families or species of plants, which may supply our accommodation, though experience must finally decide, yet much is to be learned from reflection upon the influence of *climate*, of *soil* and of *culture*.

Of the first, where a parallel may be drawn between the country of the exotic and that of its intended adoption, in reference to the native or acquired habit of the plant; analogy will justify the experiment. Experience too, will sanction under a great diversity of habits, the attempt at acclimation; and frequently may the change of its nativity, even ameliorate and highly improve the character of a plant.

It is affirmed as a general truth, that in southern countries, vegetables enjoy a higher degree of energetic properties than in northern climes; if so, from the boundless fields of higher latitude, we may derive unlimited advantages; extremes of heat and cold, we know to be unfavorable to vegetable growth. Inhabiting a mediate space and a mediate temperature, far removed from the arid deserts of Nubia, or the frigid plains of Siberia, we have much to anticipate, in respect to *climate*.

In point of *soil*, we possess the most multiplied advantages; from the wet and dry silicious, to the rich and humid alluvial; every texture, every useful combination are notoriously within our command.

And lastly,—By the influence of culture, many of our indigenous plants, now useless, and even poisonous, may be metamorphosed into wholesome and nutritive food; we have the authority of Buffon, for the fact, that wheat is a factitious production, from a worthless weed, by the force of culture: and Columella states, that the peach possessed deleterious qualities, when first introduced, from Persia, into the Roman empire; it is well known, that the potatoe, a native of South America, (there a wild and common weed,) "bearing small tubers, too bitter for use," has been reclaimed by cultivation; and ranks among our choicest vegetables.

In the language of an acute enquirer into the arcana of nature, if there be any who feel sceptical upon the subject of such metamorphoses, let him visit the fairy bowers of Horticulture, and he will there percieve, that her magic wand has not only converted the tough coriaceous covering of the almond, into the soft and melting flesh of the peach; but, by her spells, the sour sloe, has ripened into the delicious plum; and the austere crab, of our woods, into the golden pippin; the acrid and poisonous apium gravcolens, has been changed into delicious celery; and the common colewort, appears, by culture, under the improved forms of cabbage, savoy and cauliflower.

The magnitude of my subject, the providential mysteries and fascinations of agriculture, will palliate the offence of my devotion; its *science* is enchanting and boundless; its *practice* is co-equal and co-ordinate with the creation of man; its march is pari passu with that of his moral virtue, and his intellectual character; it has been employed as the first instru-

*See report on my corn crop, at the last Maryland Cattle Show.

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