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ADDRESS,

BY

ASAHEL HUNTINGTON, ESQ.

Mr. President and Gentlemen:

Having again assembled on this twenty second anniversary of our society, and brought up hither the choice and beautiful fruits of the earth, together with the firstlings of our herds and flocks, it becomes us to render the tribute of grateful hearts to the Beneficent Author of all these gifts, who has caused his sun to shine, has given us the early and the latter rain, and has crowned the year with ample and abundant rewards of the labors of the husbandman.

It is no useless or unmeaning pageant that has brought together the farmers of the county on this interesting occasion. Devoted to a high and honorable pursuit—to a most useful, indeed, an indispensable calling, the cultivation and improvement of the earth, from which we all derive our food, raiment and shelter, and to a profession, for the successful prosecution of which, the observation or experience of no single individual, however much aided or enlightened by science, study or reflection, will adequately suffice; why should not the farmers come together on stated times, to interchange opinions, to compare results and different modes of culture, and to devise the best means of advancing the great and paramount interests with which they are intrusted? Men engaged in the other departments of industry or business, have their days and occasions

set apart for these purposes, and have found them attended with highly beneficial results. The merchants have their chambers of commerce, boards of trade, and mercantile associations—those engaged in manufacturing and mechanical pursuits have their institutes and societies—the learned professions have similar organizations—and why should not the farmers have theirs also? If agriculture, the mother of the arts—being coeval and coexistent with the civilization of the race in all past generations—being the primeval trunk of which all other departments of human industry are the branches, and forming the foundation and support of all the great economical interests of society, in its just and true development and expansion, be not worthy of the highest regard of all, and especially of its more immediate ministers and professors, then there is no pursuit or employment in life, which can claim a moment's consideration. Being first in time, and in the natural constitution of things, it is paramount to all in importance. Connecting and blending itself with all the ramifications of human industry, in their endless varieties, by the golden chain of a mutual interest, and imparting to all vitality and strength, from its own inexhaustible resources and fullness, it may justly be deemed the centre and life of the whole. Engaged in a pursuit, eminently adapted to give health to the body, and if prosecuted in a just spirit of inquiry and research, vigor and purity to the mind and moral sentiments, and free from those corroding and anxious cares and embarrassments, which beset most of the avenues in other departments of industry; and second in intrinsic dignity to none, whether we consider the pursuit itself, or the ends which it seeks to accomplish, well may the farmer, who cultivates his own acres, regard his condition a most fortunate one, and apply and realize in his own experience the sentiment of the great Roman poet, "Oh, too *happy* farmers! did you but know your own blessings."

But these are general remarks, and however just or true in themselves, have no particular application to the agriculture or yeomanry of this county, and thus tend to no practical results. We live in a district of the State eminently commercial and manufacturing in its pursuits and character. Our soil, as a general fact, is not remarkable for its fertility or productions. Agriculture is not regarded as the chief or main interest of the county, and is very generally held, as a pursuit, in secondary estimation. Trade and commerce, on the one hand, hold out their enticing and splendid rewards, and on the other, manufactures fill the youthful mind, and often the chastened and sobered imagination of manhood with golden dreams, and excited expectations. But if the youthful aspirant for riches or distinction find the avenues in what are deemed the more lucrative pursuits closed against him here, and feels that he is *doomed* to be a farmer, his imagination kindles at the descriptions of that fairy land, the WEST, and he determines to seek his fortune in the teeming and fertile soil of the great valley. Of all the mistakes, which an Essex young man can commit, this is the greatest, and oftentimes, the most fatal. In executing this determination, he sacrifices a *fortune* in the outset. He gives up his home with all its endearing and hallowed associations, and his New England birthright, which is itself the richest treasure to one who entertains any just notions of the real ends and aims of life. And is it nothing to make such a sacrifice? Is it nothing to surrender this rich inheritance of blessings and enjoyments for the fancied good of a more exuberant soil in the distant prairies of the west? What if we have a less fertile *natural* soil, have we not also a far deeper and richer *moral* soil, laid down and imbedded by the labors and sacrifices of successive generations of a good and glorious ancestry, and producing fruits that gladden and rejoice the hearts of their descendants, giving stability to their purposes and strength to their character, and adorning

and beautifying New England life, with a richness and variety of coloring found in no other portion of this wide earth? All this harvest, garnered up among our moral treasures, and justly esteemed by her sons, as the precious stones—the real wealth, and the chief attraction to a New England life, is cast away in the outset by the rash and speculating adventurer, who seeks for riches and repose in the valleys of the west. If he would make one half the real sacrifice here in old Essex, which he voluntarily or involuntarily submits to in seeking a new home, he might remain, and work out for himself a competence and independence far more satisfactory and enduring, than any he will find away from the home of his childhood, and the graves of his fathers. I would not affirm that no young man should emigrate to the west. There may be peculiar circumstances, which would render such a step expedient, but I do affirm that young men and others, who have been induced to make this change, have been operated on by inducements mainly or wholly delusive; and if we could have the real and honest opinions and experience of emigrants from this county for the last ten years, I believe I should be fully sustained in this remark. The truth is, we have not yet arrived at that point, at which emigration becomes at all necessary or desirable. The resources of the county, with a proper application of skill and industry, might be made ample for sustaining four times our present population. The agricultural productions alone might be quadrupled with the greatest benefit and advantage; and I believe the younger members of this society may live to see an increase of production something in this proportion.

If, then, the young Essex farmer wisely determine to build up his fortunes at home, shall he be allured from the useful and honorable employment in which he has been educated, by the gilded prospects of other, and more gainful pursuits? In other words, shall he risk the certain prospects of a healthful

competence and independence, for the *uncertain* prospects of large and extraordinary gains? He may be *certain* of reasonable success in the pursuits of husbandry, to which he has been trained; he cannot be *certain* of an equal relative success in the more hazardous pursuits of commerce or manufactures. Why, then, should he change the mode of life to which he has been accustomed? I am not inculcating the sentiment that a young man should *never* seek other pursuits than those to which he may have been devoted, but that the young Essex farmer has every reason to be satisfied with his condition; and if he own the unincumbered fee of the acres, which he cultivates, he may justly esteem himself a most fortunate man. Compare the present condition of our farmers, in all those particulars which go to make up the comfort and real independence of *the man*, with that of any other class in the community, or make a similar comparison for the last ten or twenty years, and I am quite sure the farmer will find nothing in such comparison to make him dissatisfied with himself, his employment, or his prospects. Agriculture, then, as a pursuit, if followed with proper enterprise and spirit, is as respectable and honorable in itself, as any other—it is more certain in its returns, and insures competence and independence.

But, however this may be; whether I am strictly correct in this comparative estimate of the different pursuits, is matter of very little practical importance. I believe the views I have expressed to be sound, and such as will commend themselves to the judgment of all practical and observing men. Still, right or wrong, you have *chosen* your profession, and upon reasons and grounds satisfactory, it is to be presumed, to your own minds. The point is settled. You are farmers, and have deliberately determined to dedicate yourselves to this mode of life. If any of you, however, are still doubting and hesitating on this point, I would respectfully advise you to come to an immediate determination, for such a state of

mind is disastrous to all good husbandry. The halting and hesitating farmer, who is perpetually doubting whether he is *in* his proper element, will be very certain to find himself *out* of it, and in no other, or certainly in no better one, in the end. But I have presumed that this is no longer debateable ground, and that your decision is fixed and irrevocable. To such I would say, give to the profession of your choice the best energies of your bodies and minds. Husbandry is no light or easy service. It requires diligent and intelligent labor—and for such it will always return adequate rewards. Be active, industrious, inquiring. Apply the mind with assiduity, as well as the labor of the hands. Carry into your business the same zeal and enterprise, which are the harbingers of success in the other pursuits of life, and they will accomplish as truly useful results for you, as they do for others. It has often occurred to me, that with many, the object of farming seemed to be a sort of experiment, to determine with how *little* labor, industry, and good management, the farm could be made to clear itself from year to year.—Some farmers seem to think, that if they can procure the means of a *tolerable* subsistence, they have accomplished all that is desirable. Others extend their views somewhat farther, and are satisfied if they can obtain a merely *comfortable* support for themselves and families, not having in either case any direct reference to the capabilities or the permanent improvement of their estates.

The true problem to be worked out by every intelligent and enterprising farmer, I take it to be this, to raise annually the greatest possible amount of the most profitable crops, having a single eye to *income* immediate or more remote, according to his means, and especially to the gradual and permanent improvement of his farm. The practical farmer, whose own personal labor is his principal active capital, cannot afford to make doubtful experiments on any considerable scale. He cannot afford to improve his

farm any faster than he sees the way clear for a certain and compensating profit in the end; and this end may be more or less remote, according to the means at his convenient command. With these limitations and restrictions, the point to be aimed at, is the greatest possible production from year to year.

The earth is a kind, faithful, and generous mother, and she will repay and reward any investment of labor or capital, which is made in accordance with these principles. Particular seasons, from drought, or other causes, may disappoint the expectations, or defeat the plans of the husbandman; but I speak of the cultivation of a course of years; and affirm, that the farmer should make from year to year the greatest possible drafts from the earth, always having reference to income or profit, immediate or eventual, and the improvement and amelioration of his farm. In this way, the productive power of a farm, by judicious and efficient husbandry, may be indefinitely extended. Production, properly applied and expended, increases the power of production, so that it would be difficult to prescribe the limit, beyond which production might not be carried.

I am not now speaking in reference to modes of husbandry or cultivation, unsuited to the circumstances, wants or condition of the county. I have no reference to modern English agriculture, as distinguished from our own. We all know that the agricultural productions of that country have been amazingly increased within the last twenty or thirty years, but by modes of cultivation in part, which would not be suited to the circumstances existing among ourselves. I refer to what has been done, and is now doing by some of the practical farmers among ourselves with eminent success—and with great pecuniary advantage. The cry of the farmer should be perpetual, *give*, GIVE, GIVE, taking care himself to return more strength and nutriment, in the form of manures, than have been exhausted by his crops, in this manner preparing the way for a

more liberal draft, at the next season. Thus good agriculture is in some sort a system of exchange of *kinds*, but not of *values*.

Experience, at all times, has taught the husbandman that animal and vegetable substances, mixed with the soil, afforded nourishment to the plants, which it produced. Science has disclosed to us the fact, that the living plants and the dead manure, whether animal or vegetable, are resolvable into the same elementary substances, though existing in different states of combination; so that in supplying animal and vegetable substances to the soil, in a state more or less decomposed, we in fact furnish the same essence which enters into the composition of the germinating and living plant. In supplying manures to the soil, we return to it the same elementary substances, which are drawn from it by the nurture and feeding of the living plant, and this is what I intended by the remark, that good husbandry is a system of exchange of *kinds*, but not of *values*. We thus see, that to secure an increased and increasing production, MANURE is the great and principal instrumentality. This is the beginning, the middle, and the end of thriving husbandry.

To create from the resources of the farm the greatest possible amount of this food for plants, should be the constant aim of every good farmer. This is the ultimate source of his gains, and he must guard all the avenues to it with an ever vigilant watchfulness. The farm must be washed and scoured for the purpose of obtaining this treasure. In this county, we have abundant sources of supplying it, and though all farms are not equally privileged in this respect, yet none are destitute of the means of doing very much in this way. The sagacious farmer will watch with an eagle eye every possible opportunity for increasing the amount and improving the quality of his manure—especially will he see that nothing is lost. All his plans of improvement will have reference to this main and engrossing object. He will not expose

his stable manure heap at the end, or in rear of his barn, to the impoverishing ravages and inroads of the rains, the wind, and the snow, a scandal alike to good taste and good husbandry. The liquids are of no less value in his estimation than the solids, and the most careful expedients are devised, as circumstances require, to see that nothing be lost, but that everything be preserved, in the greatest order and perfection. His stable, barn-yard, and piggery, are regarded as so many manufactories of manures; and his cattle and swine are each made to contribute in the best possible manner to this end. "Every hog kept by a farmer," says Mr. Phinney, of Lexington, (who is the highest authority on this subject, as well as on all others pertaining to practical agriculture,) "should be *required* to prepare ten loads of compost manure in the course of a year, which he will CHEERFULLY do if the owner will furnish him with the materials, such as loam, peat, or swamp mud," &c.— The same distinguished cultivator assured me, as the result of his experience, that thirty dollars worth of manure judiciously applied to an acre of ground planted with Indian corn, over and above the usual quantity allowed for this purpose, would be compensated the first year, in the increased production of the crop, estimating the corn at one dollar the bushel; and that the additional fertility thus imparted to the soil, available in the greatly increased productions of future years, would be the net profit. He further assured me, and in this I am certain he would be confirmed by the most successful cultivators in our county, that the great secret of good husbandry is LIBERAL MANURING.*

In order, however, to secure the full effect of such a course of husbandry, it is necessary that the ground should be properly prepared, and that the *nature* of the soil to which the manure is to be applied should be fully understood. And here is ample opportuni-

* Appendix, A.

ty for the exercise of all the skill and sagacity of the most experienced cultivator. He must know the constituent elements of the substances with which he is called to deal, else he cannot apply the remedies which the infirmity of the soil may require. It is often the case, that the effect of manuring is in a great measure lost from the shallowness or lightness of the soil, or the nature of the *subsoil*. Such lands, it is sometimes said, will not *bear* heavy manuring. The only cure for this description of soils, is to make them over, in other words, to *create* a soil. This operation, however, in the old modes of husbandry, was found to be too expensive, and not such as to commend itself to any great extent to the judgment of practical men. Deep ploughing, by bringing up to the surface the infertile subsoil, and covering under it the vegetable mould of the soil *proper*, made long and expensive manuring necessary to create a soil suitable to the early growth and nurture of plants. With sufficient time and expense, soils were reformed in this way. But the invention of the subsoil plough, the greatest achievement of modern art, as applied to agriculture, will enable the Essex farmer to convert his sterile soils into fields of fertility and abundance, with the greatest advantage and profit.

Many farmers among us complain much of their light and barren soils. They allege that manuring does but little good; that it excites the land for a short time, and that then the effect is entirely lost. This is undoubtedly true to a very considerable extent, and in this way, those richest of the farmer's treasures, the manures, are partially, and sometimes almost wholly wasted. This is a sacrifice which the interests of husbandry can by no means afford. That mode of husbandry, which leads to such sacrifices, must be a false and defective one. To the farmer, therefore, who makes the complaints above suggested, I would say, reform your husbandry, and use the instruments which modern art has put in your

hands for deepening and ameliorating the condition of those grudging and scanty soils ; and thus lay the foundation wherein your manures may exert all their quickening influences. This is no matter of doubtful and uncertain experiment. The subsoil plough, invented in England, has been used there with the greatest success. It has also been tried, in a modified form, in this country, by some of our most enterprising cultivators, and commended as one of the greatest improvements of our times. I believe it will work a great revolution in our agriculture ; and that with the aid of subsoil ploughing, and liberal manuring, many of our now almost barren wastes will be converted into smiling and fruitful fields.

Deeming this a matter of great importance, and one worthy of the especial attention of the members of our society, and of the agricultural community at large, and believing that many of the soils of this county, are especially adapted to this mode of cultivation, I have taken the liberty of transcribing a note on this subject, from the first report of our indefatigable agricultural commissioner.*

Having considered thus briefly two of the more obvious modes of increasing the productive powers of soils, viz: manuring, and altering its texture, depth, and properties, by tillage and other means, I shall now advert to another mode, which claims especial consideration in this county ; I mean, changing the relation of the soil with respect to *moisture.* In looking over the surface of the county, we find vast tracts of land wholly unproductive. Much of this land is not susceptible of being brought under cultivation, except at an expense which would be ruinous to the farmer, who is seeking the means of support from working on the soil. But a much larger proportion of this unimproved land, estimated in the gross in the reports of the valuation committee in 1831, at thirty four thousand two hundred and

* Appendix, B.

eighty one acres, is adapted to a most profitable cultivation.

The amount of unimproved land in the county somewhat exceeds that of English and upland mowing, and is more than double that in tillage. A large portion of this land, consisting of low, bog, mud, and peat meadows, is capable of being drained. It is now absolutely worthless, or nearly so. These tracts are distributed through the whole county. Scarcely a farm can be found, which does not contain some land of this description. If susceptible of draining at a moderate expense, these lands, in their present condition, though producing nothing except what is offensive alike to the eye, and a just agricultural taste, are *intrinsically* worth more than the average of the first class of upland tillage bottoms. They are virgin soils, and contain vast accumulations of vegetable deposites, furnishing the best aliment for most kinds of plants, and especially for grasses. When drained of the exuberant moisture, and the soil has been sufficiently exposed to the action of the atmosphere, they become extremely productive, and may be kept so at a very inconsiderable expense. This is not matter of speculation, theory, or book learning, but of actual and repeated experiments, made by practical farmers, who have shown us the results, the processes, and the expense of the operation. The transactions of our society, as published from year to year, contain splendid and most encouraging examples of this kind of husbandry. Among the most recent, I refer you to those of Mr. Osborn, of Lynn, and Mr. Brown, of Saugus. If any farmer doubt, as to the expediency of this mode of cultivation, I would ask him to visit these reformed meadows, as I have done, and see them producing every variety of crop, in the greatest richness and abundance. For three successive years past, in the month of June, I have seen one of these reclaimed meadows, containing about twenty acres, under the cultivation of Mr. Phinney, the gentleman before refer-

red to, producing between two and three tons to the acre of the best English grasses.

This subject cannot be pressed too strongly on the attention of our Essex farmers. These sunken, sterile, and unsightly meadows contain mines of wealth, and require only the hand of the judicious cultivator to work out the precious metals, in all sufficient and reasonable abundance. I say, again, let every farmer, who is blessed with this species of soil, try the experiment for himself. He may do it on a more limited scale, if he please. If he is unwilling to grapple with one or two acres, let him try one or two rods ; and if he should not be perfectly satisfied with the experiment after a fair trial of two or three years, as one of the trustees of the society, I should not be unwilling to assume the whole expense of all the experiments that might be made, and to become, with my colleagues, personally responsible for such an engagement. I have entire confidence in the feasibility and profitableness of this mode of culture ; and I hope I may live to see the day, when these detached prairies shall become the gardens of Essex, rejoicing the heart and eye of the passing traveller, and returning their golden harvests into the barns and granaries of the husbandman.

Before quitting this topic, I cannot forbear relating an anecdote, which will illustrate the general views here presented. Within the last year, an aged farmer, who has made himself rich by this mode of cultivation, adopted extensively, many years ago, was called as a witness before a sheriff's jury, to estimate the value of a neighbor's land, which had been taken for a highway. The land was a narrow strip of three rods in width, running partly over upland tillage or field, and partly over a meadow, producing coarse and sour grass. Several witnesses were called in behalf of the petitioner for damages to appraise these different soils, and all of them, except the old farmer, estimated the upland considerably higher than the meadow. When *he* was called, he reversed the es-

timate; and the counsel for the county, apparently surprised at this judgment of the old farmer, differing from that of all the other witnesses, and thinking he had caught him napping, exclaimed with a loud voice, (the old farmer being quite deaf,) "do you presume to say, sir, that this meadow land is worth $70 the acre, and more than this valuable field?" The old farmer, raised a little by the apparent temper and spirit of the question, replied substantially as follows. I may not give the precise words, but I do not mistake the substance of the answer. "I do *presume*, sir, to say so—and I *know* so, and there is no mistake. I have worked over these meadows, and know all about it. I have sold a good deal of English hay from mine, and I know I get more and better English hay from my old meadows, than I do from my uplands. The fact is, there is a *bottom* and *foundation* in these meadows, which we do not, and cannot find in the uplands, and there is no mistake about it. I do presume, sir, to say again what I have said before, and I know it is true."

In this connexion, it may be proper merely to advert to the improvements, which have been made within a few years in the cultivation of salt marsh by ditching, draining and dykeing. There is a large quantity of this land in the county, fourteen thousand one hundred and thirty nine acres, being just about equal to the quantity in tillage. It is well known that a large portion of this salt marsh is comparatively unproductive. The experiments, which have been made, in several instances, at improved modes of cultivation, in the ways referred to, augur well for success. If it is found, on farther experiment, that these lands are susceptible of improvement in these or other ways, to the degree, which the experiments actually made would seem to warrant us in expecting, it is obvious that a vastly increased productive power may be obtained from this source, and considering the amplitude of the source, it would be difficult to estimate its value or impor-

tance. I commend this subject to the special attention of the seaboard farmers, who are mainly interested in these lands.

Land that is worth cultivating *at all*, is worth cultivating *well*. If, therefore, an individual find himself in the possession of a farm which will not reimburse the expense of good husbandry, he had better abandon it at once, for all experience teaches, that no man can afford to be a farmer under a system of *bad* husbandry. The earth was not made for thriftless, inefficient, or unskilful cultivators, nor will it yield to such its full increase.

No farmer should feel that he discharges his whole duty, unless the *effect* of his cultivation, is to make his farm *better* every year. He may be sure that it is capable of an indefinite improvement, and his constant aim should be, to increase and multiply its resources, and productive power. The question should not be, whether fifty or an hundred dollars judiciously expended in labor or otherwise will add so much to the saleable value of his estate, but whether he can receive it back again with good interest. His mode of cultivation should not be based on any idea of the present or prospective value of his farm in the market, but on that of a permanent and continued possession from generation to generation; and that if he do not reap all the benefits himself, he is laying up a certain treasure for his descendants.

One principal reason, I apprehend, why more attention is not paid by our farmers to the cultivation of fruit trees, is that they do not promise an *immediate* profit. The trees must be planted—they must be nursed in their early growth, and some seven or ten years must elapse, before they will yield any considerable profit. Whereas, the wise and sagacious cultivator calculates *remote* as well as *immediate* profit. If he sees that fifty or an hundred apple-trees, for instance, planted by the side of his fields, or in a lot set apart for this purpose, will *begin* to yield a

profit in a period of from seven to ten years; that the production will gradually and annually increase for some ten, fifteen or twenty years; and that then he may have a matured and full grown orchard, bearing the choicest and richest fruits, and promising its annual treasures for generations even to come, he is not deterred from present expenditure from the remoteness of the return. What is a thrifty apple-tree worth, of twenty years' growth, bearing choice fruit? (and it is just as easy to have such fruit as that which is of inferior quality.) What will it *then* annually produce in money? It would not be an extravagant estimate, to consider a fair average production of such a tree, at from seven to ten bushels of marketable fruit, worth from five to eight dollars, on an average of prices for the last eight or ten years. Some trees, in particular seasons, yield much more than this. I was informed by one of the trustees of our society, that two apple-trees, known to be over a hundred years of age, produced, in one year a net income of about forty dollars.

It is well known, that *apple*, as well as pear-trees, with proper care, live to a very great age. Take then a tree, in good bearing condition, producing any of the choice varieties of fruit, of fifteen or twenty years' growth, and what is it worth? If such a tree is taken by a railroad company, or by the public for a highway, the owner *then* considers it of real and substantial value, and can prove, that it is worth from sixty to an hundred dollars. Suppose, however, the real value of such a tree to be but fifty dollars, is it not obvious, that a farmer, who is willing to forego present or immediate profit, may by a small investment in the outset, lay the foundation for very greatly enhancing the annual productive value of his farm in the course of a few years? He may, in this way alone, double the real and intrinsic value of his estate. There are, in this county, examples of eminent success in this course of husbandry. It is true, there are risks from the elements, and other

causes, but if one tree fails, another may grow in its place; and with proper skill and care, the actual value of production, taking a series of years, may remain without much variation.

It is believed, that the cultivation of all the choice fruits, to which our climate and soil are adapted, may be very greatly extended with a certain prospect of abundant remunerating profits. A distinguished cultivator, in a neighboring county, informed me that the net income, arising from the sale of his Isabella *grapes* alone, three years ago, exceeded that of his whole farm of one hundred and fifty acres. Another farmer, who has paid particular attention to the cultivation of peaches, informed me a few weeks ago, that his sale of peaches in the Salem market, the present season, amounted in one week to the sum of one hundred and twenty dollars; and that his peach-trees, for a series of years, have yielded him an annual income of between four and five hundred dollars. It is to be considered, that the Essex farmer finds a great and constantly increasing demand for all the choice productions of the earth. He is in the midst of the most densely populated region in this country. He has a cash market almost at his own door for every contribution that he can bring to it; and as the facilities of intercommunication are constantly increasing, by the operation of that great power of modern times, *steam*, which is effecting a revolution, in the condition and relations of the whole civilized world, the only means by which an Essex farmer especially can successfully withstand the active competition and conflict which these discoveries are adapted to produce, are improved modes of cultivation, with particular reference always to the production of the BEST article for the market, whatever it may be. Our husbandry must be a model husbandry. We must make up in fertility of skill, expedients and useful devices, what we lack in the natural fertility of the soil. In this way, and by these means, Essex husbandry, which has a cash

market on her own soil, constantly increasing and craving all her rich and choice productions, may successfully maintain her rightful superiority at home, and by a gradual and certain extension and development of her own inherent resources, preserve it in all time to come.

One of the principal instrumentalities of effecting this great and most desirable change and improvement in the condition of our husbandry, is the society, whose organ I have the honor to be on the present occasion. That this society has already accomplished much good, no one can doubt, who is conversant with the comparative condition of the agriculture of the county now, and at the time of its establishment, twenty two years ago. But it is quite as apparent that our society is yet in the infancy of its usefulness. It may be made to wield a vastly greater influence than it has hitherto done, by more diligence, zeal and activity on the part of its members. In the first place, every farmer, not now a member, and all other citizens, who feel an interest in promoting its objects, should enrol their names among its friends and supporters. This is common ground, on which we may all meet, and cultivate that mutual confidence and respect, which the division and animosities of party and political strife, are too much adapted to interrupt and impair. We can here cherish a common brotherhood of *interest*, as well as of mutual regard and esteem. In this way the social and moral influence of our society may, continue to be, as it now is, highly salutary. Important as this consideration may be, it was not this sort of influence, as a direct object, to which I referred in the remark just made. This is one of the incidental benefits of our organization.

The direct and main object of our union, under the form of a society, is to improve, and extend, as far as may be, the agricultural resources and wealth of the county. This object cannot be fully accomplished, until all its members, and especially the

practical farmers, consider it a personal and imperative *duty* to bring out, and place upon record in our annual publication, all the *valuable results* of their experience. In this way our "transactions" will exhibit a transcript, as it were, of the agricultural mind and heart of the county, and thus true knowledge, founded on experience, may be multiplied and diffused.

The wisdom of the world is founded on the experience of the world. This is emphatically true of the art, which it is our design to promote. Every farmer, who pursues his calling with that zeal, enterprize and intelligence, which all men should endeavor to bring to the prosecution of their lawful business, whatever it may be, will learn *something* every year, which it is important that others should know. That something should be communicated for the common benefit. It should be found in our records, so as to be known and read of all men. The lights of experience and true knowledge should not be suffered to expire in one's own breast, but should shine forth on our published records in all their richness and variety of coloring, for the illumination of the general mind.

To this end, let every farmer who has good reason to believe that in any one thing he is wiser this year than he was the last, bring up here a brief narrative of the matter, to whatever branch of husbandry it may relate; and if this duty should be fully discharged by our intelligent yeomanry, abstracts might be prepared for publication, from such narratives, which would be of invaluable service in advancing the agricultural interests of the county. Essays and treatises on the different branches of husbandry may be made exceedingly useful, and should occupy more or less space in our annual volume; but if our farmers, while they avail themselves to the fullest extent of all the sources of information at their command, will bring out to the public view, from time to time, the results of their own expe-

rience, the *boundaries* of knowledge will be enlarged, and an actual progress will be made in the promotion of this great and paramount interest of society.

I am not calling on you, my friends, to become *authors*, but *witnesses*. I would put you severally on the stand to testify, from year to year, what you do know, or have learned about your own business, and let the judges, to be constituted by yourselves, put abstracts of that testimony into a suitable form for publication. In this way true knowledge may be increased, and the lesser lights of individual experience may be combined in one great central light, which shall shine on every hill top, and in every valley of the county. I cannot press this subject too earnestly on your attention. I believe this to be the great sphere of our usefulness, as a society. Not looking to premiums or gratuities, as the objects of our labors, but to a greater recompense of reward, the consciousness of having discharged our whole duty, let us press forward, in the anxious endeavor to extend the boundaries of a just and true agricultural knowledge, to be applied in making our own ancient and honored county the garden and ornament of the state—rich in its various and useful productions, and the home of a contented, moral, intelligent and thrifty yeomanry.

APPENDIX.

NOTE. A.

SINCE the delivery of the foregoing Address, I have had the pleasure of receiving the following letter from Mr. Phinney, on one or two highly important topics of practical agriculture; and I am happy in having his permission to insert it in our volume of transactions.

Lexington, December 1, 1840.

A. HUNTINGTON, ESQ.

DEAR SIR—The question is often asked, How can farming be made profitable? I answer, by liberal manuring, deep and thorough ploughing, and clean culture. I will venture to affirm, without fear of contradiction, that no instance can be cited, where a farmer who has manured his grounds highly, made a judicious use of the plough, and cultivated with care, has failed to receive an ample remuneration for the amount invested, nay more, that has not received a greater advance upon his outlay than the average profit derived from any other business. One great difficulty is, that most farmers seem not to be aware of the fact, that the greater the outlay, to a reasonable extent, when skilfully applied, the greater will be the profit; they therefore manure sparingly, plough shallow, and the consequence is, get poorly paid for their labor. This has raised a prejudice and given a disrelish to the business of farming, especially among those who are in the habit and

are desirous of realizing something more from their occupation than a naked return of the amount expended.

The farmer who is so sparing of his manure that he can get but thirty bushels of corn from an acre, gets barely enough to pay him for the expense of cultivation, and in addition to this, by the ordinary method of ploughing, his field, at each successive rotation, is deteriorating, his crops becoming less, and in a few years he finds he must abandon his exhausted and worn out fields to seek a subsistence for himself and family in some other business, or in some other region, where the hand of man has been less wasteful of the bounties of nature.

Instead then of his scanty manuring of ten cart loads to the acre, which will give him but thirty bushels of corn, let him apply thirty loads. This additional twenty loads, at the usual price of manure in this part of the country, will cost him thirty dollars. But he now, instead of thirty bushels of corn, gets sixty bushels, and the increased quantity of stover will more than pay for the excess of labor required in cultivating and harvesting the large crop over that of the small one. He has then added thirty bushels of corn to his crop by means of the twenty loads of manure, which at the usual price of one dollar per bushel, pays him in the first crop for his extra outlay. His acre of land is laid to grass after taking off the corn, and the effect of his twenty loads of additional manuring, will be to give him, at the lowest estimate, three additional tons of hay in the first three years of mowing it, worth fifteen dollars a ton standing in the field. Now look at the result. His thirty dollars expended for extra manuring was paid for in the first year's crop, and at the end of three years more, he will have received forty five dollars profit on his outlay of thirty dollars; and in addition to this, his land is improved, and in much better condition for a second rotation. There is no delusion in this. It is a practical result,

of the reality of which any farmer may satisfy himself, who will take the trouble to make the experiment.

From no item of outlays can the farmer derive so ample, or so certain a profit, as from his expenditures for manure to a certain extent. This has been most strikingly verified by some of our West Cambridge farmers. It is not uncommon among some of the farmers in that town to put on their grounds one hundred dollars' worth of manure to the acre, and in more instances than one, the gross sales of produce from ten acres under the plough have amounted to five thousand dollars in one season. This is the result of high manuring and judicious cultivation of a soil too which is exceedingly poor and sandy.

The subject of subsoil ploughing is one upon which there has been little said, and less done in this part of the country. In all our grounds except those which are very loose and sandy, there is no doubt that great benefit would be derived from the use of the subsoil plough. In England the effect of subsoil ploughing in increasing their crops, as stated by some agricultural writers, would seem almost incredible. By this means, the crops in that country have been doubled, and in many instances trebled. The expense, however, is stated to be very great, so great, as to be beyond the means of most of our farmers. In one case the expense of subsoil ploughing on a farm of over five hundred acres, was estimated by the owner, to cost the enormous sum of thirteen hundred pounds sterling. This calculation took into consideration the use of the heavy Deanston plough which always required four, and, in some stiff clays, six horses to work it. I am aware that an implement might be constructed, which though it might not do the business quite so well, could, nevertheless, be made highly beneficial in the hands of our farmers, and obtained at a far less cost. I am informed that Mr. Bosson, of the Yankee Farmer, has with a highly praise-worthy zeal in the interest of agriculture,

imported from England, a subsoil plough, which may be worked with a less powerful team than the one commonly in use in that country.

In a climate like our own, which at that season of the year when our crops, particularly our root crops, most need the benefit of moisture that may be derived from deep ploughing, and are most likely to suffer from drought, the use of the subsoil plough would be attended with unquestionable benefit. On a field of my own, which had been set to an orchard, and therefore kept under the plough for some years, in attempting to under drain a part of it, that was usually flooded by water in the spring of the year, I noticed what the English call the "*upper crust.*" This lay some inches below the surface, at the depth to which the land had been usually ploughed, formed by the treading of the oxen and the movement of the plough over it. This I found to be so hard as to be apparently as impenetrable by the roots of plants as a piece of marble, and discovered to me at once the cause of the failure, in a great measure, of my crop of potatoes the year before. Having discovered what I supposed to be the cause of the failure, I set about devising measures to remedy it.

I had never seen a subsoil plough, there never having been one seen or made in this part of the country. I consulted my ingenious friends, Messrs. Prouty and Mears, and, at my request, they made an instrument of very cheap and simple construction, consisting of a wooden beam, about three inches square, and three feet long, with three tines or teeth of the common cultivator, placed in a direct line in the beam, extending about eight inches below the beam; to this handles were attached similar to the handles of a plough. On trying this by running after the drill plough, I found, in my hard, stony subsoil, it was quite inadequate to the business, being too light and of insufficient strength. I then had one constructed of similar plan, but much heavier and stronger. The beam five feet long, six inches square,

of white oak, well ironed, with three tines in nearly a right line, made of the best Swedes iron, one and a half inches square, extending twelve inches below the beam, with a spur at the foot, some less than that of the tine of the cultivator, with strong handles and an iron beam extending from each handle to the centre of the beam, by which the balance is easily preserved. This implement, drawn by two yoke of oxen, followed the drill plough in getting in carrots, and performed the work better than I had anticipated. The "*upper crust*" gave way, the resistance made by the hard gravelly bottom and smaller stones was readily overcome. The earth was loosened in most places twelve or fourteen inches from the surface, and though not so thoroughly pulverized as it probably would have been by a perfect subsoil plough, yet, in my very hard stony subsoil, I am inclined to believe, that for simple drill husbandry, this will be found to be a valuable substitute for the English subsoil plough. And considering the small price of the implement, and the greater ease with which it is worked, the friction being much lessened by dispensing with the sole, I shall continue to use this until I can find a better. A part of my crop of carrots was sowed upon the same land, appropriated to that crop last year; no more manure was applied than in the previous year, and notwithstanding the very severe drought which greatly injured most of our root crops, my crop on this piece of land was nearly double to that of last year. There is no known cause to which I can attribute this great increase of the produce, but the use of my new constructed substitute for a subsoil plough. The soil was stirred to the depth of fourteen inches, by this means the roots of the carrots were enabled to strike deep and thereby not only to find more nourishment, but to overcome, in a great measure, the effects of a very pinching drought. With great respect, your ob't. servant,

E. PHINNEY.

NOTE. B.

SMITH SUBSOIL PLOUGH.

"I HAVE prefixed to this report two engravings of modern implements, which, in England are deemed of immense value; and which bid fair, if adopted, to be of great importance in our husbandry; they are the Smith Subsoil Plough, and the Rack Heath Plough; both intended for the same object. The original engravings are imperfect; but they will at least give a clear idea to our ingenious mechanics of an implement that is much wanted among us, and I hope, lead to its early invention. An implement is wanted by which the cold gravelly subsoil, often found in our lands, our wet lands especially, may be effectually stirred and loosened and rendered permeable to air and water, without, at the same time bringing it to the surface, where it must require a length of time and a most copious supply of manure to render it productive; and also without burying the loam and richer parts of the soil under the subsoil as is necessarily done in such cases by deep ploughing with a common plough. We want to keep the richer parts of the soil, that is the mould, on the surface; where the plants can derive all the advantages possible from it, and where too, the manure applied to it will be most efficacious. At the same time it is important to loosen the subsoil, so that the water may pass off; and the roots of the plant, if so disposed, may spread themselves into it; and likewise, that we may be gradually but constantly deepening the upper soil. I have myself seen so much the importance of doing this that I am persuaded this invention must be duly appreciated by the farmers. Its great utility likewise in draining many kinds of land will be at once apparent. In many instances it

will completely obviate the necessity of open or covered ditches. Its utility too in clay soils, but especially in many of our wet meadows, where the upper surface is thin and resting upon a hard pan, cannot admit of a question. It is of course designed to follow in the furrow of a common plough. The trenching of ground in considerable tracts in other countries, and in gardens of our own, has been followed with the best effects. Here the soil is dug thoroughly to the depth of two or three feet; and at the same time it is so managed, that the substratum is completely loosened and turned over, and the rich vegetable mould is returned again to the top, where it was at the commencement of the operation. These ploughs are adapted to operate in the same way as this trenching by the spade. The increase of crops in grounds thus managed has been always an ample compensation for the labor. The loosening of the earth and the consequent removal of the water and admission of the air, besides affording room for the expansion of the roots, without doubt by a chemical action, assists the nourishment and growth of the plant. The great objection to deep ploughing has always been, that the cold gravelly pan was brought to the surface; the vegetable mould buried beneath it; and, that it required a great length of time and an extravagant amount of manure, to bring the land into a healthy and fruitful condition. These models are copied from a late number of the British Farmer's Magazine; and I subjoin the accounts which are therein given of them."

"The most astonishing effects appear to have been produced by a new agricultural implement, the invention of Mr. Smith, of Deanster, near Sterling in Scotland, called the Subsoil Plough. This machine is a necessary accompaniment to draining; but when that is done effectively, it seems calculated to render the most sterile and unproductive soil fertile and profitable. There is no difficulty more fatal to the practical farmer than that of cultivating a thin shal-

low soil with a stiff retentive subsoil. Whatever pains may be taken with the tillage of the former, however expensive the dressing which may be used in its cultivation, the nature of the subsoil will always counteract its beneficial effects. Many persons have endeavored, by trenching, to obviate this difficulty, but where the subsoil is of that sterile nature, and requires exposure to the atmosphere for so long a period to make it produce, few farmers have been found bold enough to repeat the experiment. Mr. Smith's ingenious invention by breaking the subsoil without bringing it to the surface, renders it pervious both to air and water. The same chemical changes, which take place in a fallow, owing to its exposure to the action of wind and rain, are thus brought into operation in the subsoil; whilst the upper is in the ordinary course of cropping, and when, after a few years by a greater depth of ploughing, the subsoil is mixed with the upper, it is found to be so completely changed in its nature as to be capable of producing every species of grain. The experiment has been tried for twelve years, and with uniform success."

THE RACK HEATH PLOUGH.

"The plate introduces to public notice, what in my humble estimation, promises to be one of the most useful inventions ever exhibited to the farmer, whether of sharp clays, or stiff gravels; and when I say this, I do not mean in the slightest degree to disparage the subsoil plough of Mr. Smith. I would rather include his implement in my encomium; because the objects of each being the same, viz: *loosening* not *turning up* the subsoil, I do not see why each invention should not have occured simultaneously, without either of the authors being chargeable

with plagiarism. The one is a *foot* the other a *wheel* plough. The public must decide which is best.

"Sir Edward Stracey says, he invented his plough in the year 1833. He adds, I have broken up nearly five hundred acres of heath land with this plough; my crops have been nearly doubled, the wheat produced on the land so broken up, has been fine plump grain, weighing about sixty three and a half pounds to the imperial bushel; and it has brought the best price in the market, when before the deep ploughing, the land scarcely produced the seed; the wheat was poor and shrivelled; and as I had no manure to lay on the ground I can ascribe the goodness of the crop to nothing but the deep ploughing."

"For planting trees this plough far exceeds digging, as, by proper management, the soil may be broken two feet deep all around; instead of the young trees being crammed into a little hole, where they have no room to breathe; and the whole may be done at a fourth of the expense of trenching. Some of my neighbors are getting these ploughs for the express purpose of planting."—*British Farmer's Magazine, for July*, 1837.

REPORTS, &c.

OF COMMITTEE TO AWARD THE PREMIUMS OFFERED BY THE STATE SOCIETY.

The Committee on Animals offered for the State Society's Premiums, Report:

By the liberality of the Massachusetts Society for the promotion of agriculture, our society were enabled to offer one hundred dollars to be awarded in premiums for working oxen, bulls, milch cows, and heifers, and the claimants were not confined to our own county. But Essex being at the extremity of the commonwealth, there was but little competition from other counties. Mr. Horatio C. Merriam, of Tewksbury, in the county of Middlesex, presented some superior animals, which contributed greatly to the interest of the show.

The committee were assisted in their examination and award by Mr. Henry Codman, deputed by the State Society. Eighteen pairs of working oxen were entered, some of which, however, were not shown by their owners. A fair trial of the strength and docility of the oxen was made, and it is not strange that the committee should have found it difficult to give a preference among so many fine cattle; they, however, determined to award,

For working Oxen,

To Dr. Joseph Kittredge, of Andover, the first premium of . . . $12 00

To Mr. Perley Tapley, of Danvers, the second premium, of $6 00
To Mr. Horatio C. Merriam, of Tewksbury, a gratuity of . . . 5 00

For Bulls.

To Mr. William S. Marland, of Andover, for his Ayreshire bull, the first premium, of 15 00
To Mr. Perley Tapley, of Danvers, for his Durham bull, the second premium of 6 00

For Milch Cows.

To Mr. George Spofford, of Georgetown, for his Durham cow, Flora, the first premium of 15 00
To Mr. Horatio C. Merriam, of Tewksbury, for his Durham cow, Spot, the second premium, of 6 00

For Heifers

To Mr. Horatio C. Merriam, of Tewksbury, for his heifer, Juno, in milk, a premium of 5 00
To Mr. Horatio C. Merriam, of Tewksbury, for his yearling heifer, a premium of . 5 00

For the best Cow of native Breed.

To Mr. Albert Johnson, of Lynn, the first premium of 15 00
To Mr. Josiah Crosby, of Andover, for his cow and calf, a gratuity of . . 10 00

Respectfully submitted.

For the Committee,

DANIEL P. KING.

Georgetown, September 30, 1840.

ALBERT JOHNSON'S STATEMENT.

To the Committee on Milch Cows.

GENTLEMEN—I present you a milch cow which I bought of Mr. Draper, of Danvers, April 22, 1839. He said she was then five years old. She had a calf with her which I sold when twenty one days old for eight dollars. We used all we wanted in a family of eight persons, and sold one hundred and twenty five dollars' worth of milk, at five cents per quart, from the 22d of April, 1839, to February 12, 1840.

The present season she calved the 27th day of March. I then commenced keeping an account of her milk, and the result is as follows: the calf was taken from her when nineteen days old, and weighed twenty five pounds per quarter, sold for six dollars.

From	March	27,	to	May	1,	33 days,	1102½ lbs.	or	441 qts.	430
"	May	1,	to	June	1,	31 "	1397	"	559 "	545
"	June	1,	to	July	1,	30 "	1337½	"	535 "	522
"	July	1,	to	Aug,	1,	31 "	1145	"	458 "	447
"	Aug.	1,	to	Sept.	1,	31 "	998½	"	399 "	389
"	Sept.	1,	to	"	28,	28 "	859½	"	344 "	335
		Total	.	.		184	6,840		2,736	2,668

or 3 tons, 840 lbs. Averaging, within a fraction of 15 quarts per day, without any estimate of the quantity that the calf took, which was all that he wanted.

The milk sold for five cents per quart, making an income from the milk, for six months $136 80
From sale of calf, ... 6 00

$142 80

The largest quantity any one day, fifty two pounds, or twenty quarts one and a half pint. Her pasture, until the drought came on, was good, after that I gave her some hay and one bag of shorts. Her milk

makes the very first rate of butter, as also a large quantity, the milk is rich and good.

ALBERT JOHNSON.

September 30, 1840.

—

This may certify that I milked the above described cow this whole season, and that the amount is correct and truly stated.

NEHEMIAH JOHNSON.

GEORGE SPOFFORD'S STATEMENT.

To the Committee on Milch Cows.

GENTLEMEN—My Durham cow calved the 4th day of April last; the calf was kept on the cow five and an half weeks, and was then sold for twenty five dollars. The whole quantity of milk she gave from the 15th day of May, to the 29th day of September instant, weighed 3,900 pounds. The greatest quantity in any one month, was 1,071 pounds, given in June; the greatest in any one day, was 48½ pounds.

The quantity of butter made from the first day of June, to the 26th day of September, instant, was 127 pounds; 43½ pounds of which was made in the month of June, when no milk was taken for other uses. From the first day of July, to the twenty sixth day of September, three quarts of her milk was used, or sold daily, for other purposes.

Her keeping has been a common pasture, with six quarts of shorts in two pails of water per day, to the twenty sixth of August; since then she has had four quarts of oat-meal in the same quantity of water per day. Your ob't. servant,

GEORGE SPOFFORD.

Georgetown, September 30, 1840.

CHARLES F. PUTNAM'S STATEMENT.

To the Committee on Milch Cows.

GENTLEMEN—The cow offered by me for premium this day, was raised in Vermont, and is six years old. She calved the twenty fifth of October, 1839, and the calf was taken away November fourteenth. Her feed, from the fifteenth November to May fifteenth, has been English hay and one and an half peck of sugar-beets per day. From May fifteenth to this date, she has been in a very poor pasture, and has had two quarts of Indian meal, or three quarts ground oats, per day, with hay at night. I have kept an exact account of the milk taken from her at each milking since November fifteenth, and shall furnish you with a copy; I shall also furnish the expense of keeping, with the amount of sale of milk. I should be pleased to continue the account to complete the year, if it meets the views of the committee.

The cow is remarkably gentle, and her milk is of very superior quality. Mr. James Holt, of Danvers, sold me the cow; she was considered superior for butter, having made in one week 10 lbs. 3 oz., with her second calf. She has had three calves, and will calve again in March.

I am very respectfully, yours,
CHS. F. PUTNAM.

Salem, Sept. 28th, 1840.

GENTLEMEN—Having kept an accurate account of the milk obtained from my cow, for which a premi-

um was awarded at Georgetown, I submit it to be used as you may think proper.

	Qts.	Pts.	Gills.
From 1839, Nov. 15, to Dec. 14,	433	0	1
" " Dec. 15, to Jan. 13, 1840,	425	1	2
" 1840, Jan. 14, to Feb. 12, "	405	0	0
" " Feb. 13, to Mar. 13, "	375	1	0
" " Mar. 14, to Apr. 12, "	370	1	3
" " Apr. 13, to May 12, "	342	1	3
" " May 13, to June 11, "	368	1	1
" " June 12, to July 11, "	376	0	0
" " July 12, to Aug. 10, "	302	1	0
" " Aug. 11, to Sept. 9, "	275	0	1
" " Sept. 10, to Oct. 9, "	205	1	0
" " Oct. 10, to Nov. 13, "	273	0	1
	4214	0	1

being nearly an average of 12 quarts per day for the year.

This milk I value as follows :

3333 quarts at 6 cents,		199 98
881 " at 5 "		44 05
Gross amount of produce,		$244 03
Costs of keeping :		
$2\frac{1}{2}$ tons of hay at $15,	37 50	
$68\frac{1}{4}$ bushels sugar beets,	13 05	
6 bushels ground oats,	2 88	
8 bushels indian meal,	5 20	
Pasturage and driving,	11 00	
Milking, estimated 6 cts per day,	21 90	—91 53
Net produce for the year,		$152 50

CHARLES F. PUTNAM.

Salem, December, 1840.

—

NOTE.—I have compared the foregoing with Mr. Putnam's book of original entries, made daily, and

find it to be correct. It forcibly illustrates the importance of selecting animals of the best quality. The difference between keeping good animals and poor ones is, that one are profitable and the other are not.

J. W. P.

JOSIAH CROSBY'S STATEMENT.

To the Committee on Milch Cows.

GENTLEMEN—I have entered for premium the cow Countess, and her calf. The cow is a native, has been fed entirely upon hay and grass. Averages about sixteen quarts of milk per day; and her milk contains an uncommon quantity of cream. Her calf is five weeks and four days old, was sired by the *Durham bull, Wye Comet*, from the celebrated stock of Hon. John Welles, of Dorchester. The sire of the bull Wye Comet was sold to Mr. Woodbridge and others, by Hare Powell, for five hundred dollars. The calf has fed entirely upon the milk of the cow.

Which facts are respectfully submitted by

Your obedient servant,

JOSIAH CROSBY.

Andover, Sept. 20, 1840.

MR. WELLES'S LETTER,

GEORGE HOOD, Esq.

Dear Sir—It is now about forty years since I began the raising of cattle. The Hon. James Bowdoin, my neighbor at Dorchester, purchased of Stewart, the painter, a cow, given Mr. S. by Bakewell or

some of his friends. From this Bakewell cow I bred for several years, *in* and *in*, and had a fine show of animals, much admired.

The first imported animal was "Cœlebs." I crossed my Bakewell stock first by him. Second, I then took a cross from "Holderness," a bull imported by Mr. Gorham Parsons. Third, I availed next of Denton, an animal imported at great expense, by Mr. Williams, of Northboro'. Having sent much of my stock up to Northboro' I had them kept there. Fourth, I then purchased "Admiral," and kept him several years. Fifth, I then took a cross from a red bull with a brockled or speckled face, sent out to the Agricultural Society, by Admiral Coffin. Sixth, Having thought a new cross expedient, I presented Admiral to the Worcester Agricultural Society, and went to Hartford. Here was a fine young bull, from a male animal, sold to Mr. Woodbridge and others, by Hare Powell, for five hundred dollars. From this bull and an imported cow, I got of Israel Munson, Esq. a fine young animal, which I called Young Wye Comet, from his sire.

The cows I have reared from were the Bakewell cows I have mentioned, and a fine cow, said to have been imported by Capt. E. Davis.

I believe I have omitted one cross, from a full-blood bull of Gov. Gore's.

The Bakewell cows gave me a premium from the Agricultural Society of Massachusetts. The cow said to have been imported by Capt. E. Davis, gave, when tied up aside the Oakes cow, more milk than that celebrated cow; though the Oakes cow's milk made more butter. I think the Oakes cow's milk made thirteen pounds of butter; my cow, eleven pounds per week, if I rightly recollect. The account was published by Hon. Josiah Quincy, to whom I sold her at a high price, I presume mostly for the experiment.

I am, &c. Yrs. JOHN WELLES.

Boston, October 12, 1839.

ON MULBERRY TREES, SILK, ETC.

The Committee on the cultivation of the mulberry tree, silk, &c., respectfully report, that after examining the several claims for premium, they have voted the following:—

That the premium of $7, for the best specimen of silk produced within the county be awarded to Mrs. Harriet M. Tappan, of Newburyport. Not less than one pound.

That the premium of $10, be given to Mr. Temple Cutler, for the best conducted experiment on silks, reeled and manufactured.

That a gratuity of $1, be given to Mrs. D. Foster, for specimens of silk exhibited in cocoons, reeled, and a pair of stockings.

That a gratuity of $2, be given to Mrs. ——— Titcomb, for silk stockings, very fine.

That a gratuity of $1, be given to the Misses Charlotte and Caroline Larkin, of Byfield, for speciments of cocoons.

That a gratuity of $1, be given to Mr. Moses P. Atwood, of Bradford, for specimens of cocoons and silk-worms at work.

That a gratuity of $2, be given to Mrs. Mehitible Burbank, of Bradford, for a silk dress, manufactured by her twenty five years since, when she was rising seventy years of age. Mrs. Burbank is now at the advanced age of ninety six, in the enjoyment of good health and a cheerful mind; the result, no doubt in a great degree, of the industrious habits which she has cherished through life.

That the first premium of $10, be given to Mr. Temple Cutler, of Hamilton, for the best nursery of mulberry-trees, not exceeding two years' growth.

That the premium of $15, be awarded to Gardner

B. Perry, for his orchard of mulberry trees, numbering between five and six hundred, and being over three years' growth.

That a gratuity of $5, be awarded to Mr. Joseph Foster, of Beverly ; of $3, to William C. Richardson, and $3, to Moses P. Atwood, for their nurseries of mulberry trees, which the committee think have been cultivated with good success.

With this report of their doings the committee present to the society the statements made by the several claimants, and it is only justice to say, that the committee, as far as they have been able to examine the articles presented, have found these statements fully sustained.

The committee would have accompanied this report with some more extended remarks, but forbear, so as to give place for the communication of Mr. Cutler; observations, coming as they do, from one whose opportunities for experiments of his own, and of gaining information from the experiments of others, are fully entitled to high consideration, and will no doubt be justly appreciated by the Society and an enlightened community. It would not however be just to themselves nor to the community at large, to send out that communication, without observing that there exists in the committee a diversity of opinion in respect to the comparative value of the hardy mulberry trees and those of the multicaulis, in a climate and soil like those of the county of Essex.

For the Committee,

G. B. PERRY.

December, 1840.

TEMPLE CUTLER'S STATEMENT.

To the Committee on Mulberry Trees, &c.

GENTLEMEN—I offer for premium a Nursery of Mulberry trees, raised from roots and cuttings of

the Perotted, or Morus Multicaulis, consisting of about 8,000 plants. Most of the original trees were raised by myself near Zanesville, Ohio, last year, and taken up in October, while the leaf was still green and flourishing, packed in boxes with a small quantity of earth, and arrived here in December. They were then placed in a cellar and the roots covered with earth. The latter part of May last, (not so early by a month as would have been best,) the branches and stocks were cut into what are called "single bud cuttings," about an inch in length, and planted separate from the roots. Every root, and nearly every bud to the very extremity of the green branches, vegetated and grew rapidly and are now from three to over five feet high, with numerous stalks and collateral branches covered with foliage.

These 8,000 trees include a few that survived a long passage from the south, in the extreme hot weather of June. They were then cut up and planted; few of these vegetated at all, and those that did delayed to start till some time in July. These are not now more than six inches to two feet high. This disaster, together with the loss of about fifty ounces of eggs by premature hatching, frustrated my design of feeding a large number of worms the past season.

I fed about twenty thousand worms in the early part of the season, which by accident had prematurely hatched, but owing to the misfortune that happened to my southern trees, I was obliged to have recourse to the white, and native mulberry, to aid in bringing my worms to maturity. My Ohio Perotted trees afforded foliage as early as the native or white, were devoured more greedily by the worms, and were procured from the trees with one quarter part the trouble.

I also present for premium, three small specimens of silk, from the worms above-mentioned; reeled and manufactured in my family. No. 1, is a speci-

men of raw silk, reeled on a silk-reel of my own construction, on the principle of the Piedmontire reel, differing in some measure from any I have seen described, but it worked extremely well. No. 2, is a few hanks of sewing silk, reeled as above and twisted on a common high wheel. No. 3, is a specimen of stocking-yarn, spun direct from the perforated and coarse cocoons. The management of these I conceive very important, as the perforated cocoons, (such as the miller has been allowed to cut through for the production of eggs,) have generally been considered of little use, and even accounted as waste. The cocoons, and floss with them, were put into a bag and placed in a kettle with water, and with one quart of soft soap to about six pounds of cocoons, and boiled four hours, then taken out and hung up until thoroughly drained, to eradicate the water which becomes colored by the skins of the chrysolite. They were then put again into the kettle, with the same quantity of water and soap, and boiled one hour, then well rinsed in clear water and hung out to drain. After draining they were spread to dry, but not wrung, as this would cause them to mat together. They were then spun into yarn on a common foot wheel, by holding the cocoon in the right hand and spinning from the perforated end. The yarn, or thread, was then wound into balls, twisted on a high wheel, and boiled out.

The worms which produced the silk herewith presented, were hatched on the twenty third, twenty fourth, and twenty-fifth of June last. The parent stock from whence these proceeded, were hatched on the 9th, 10th, and 11th of May, last year, 1839. They were of the variety called 'Mammoth Sulphur,' raised by myself, and the eggs preserved on papers where they were deposited by the miller, were folded up, put in a tin box, not made air tight, and kept in an upper room until March last, when they were placed in an ice cellar, in a temperature of 45 to 50 degrees, Fahrenheit. Three

days before they were exposed to hatch, they were placed in a cellar, in a temperature of about 55, where they began, the third day, to hatch, and the next morning came out in great numbers on the table, in a room where the temperature was 82, that of the common atmosphere at the time.

I mention these particulars, as great disasters have befallen the late broods of silkworms, in every portion of the Union, the present season, owing undoubtedly to the erroneous management of the eggs, particularly, in improperly retarding them for successive hatchings. These disasters seemed for a while to threaten to blast the prospects of the great cause of silk growing in the United States. But a remedy proposes itself in what is termed the "new theory," which supposes that the eggs cannot be retarded a length of time beyond the natural season for hatching, or forced to premature hatching, without doing violence to the nature of this insect. The supposition is, that the silkworm, like many others, is an annual insect, taking just one year to complete the circle of all its changes and of its existence. All my experiments tend to aid in demonstrating the truth of this position. The parent worms from which my present stock was produced, hatched spontaneously in a common cellar, just about the completion of a year from the production of their parent worms. These worms were unusually healthy, only twenty out of ten thousand failing to produce each a cocoon, only 226 of which were required to make a pound. But their progeny, which I have fed the present season, it will be perceived, were retarded forty-five days from hatching, beyond the proper time, according to our new theory. These worms were apparently unhealthy, which could be perceived on their first hatching. They appeared dilatory, some died in infancy, and some survived to the fifth age and then died. Many at that time manifested a sluggishness, and although many good

cocoons were formed, yet I do not consider my experiment as successful.

Another lot of worms, whose proper time for hatching would have been on the 27th of July, but were forced to premature hatching by being exposed to the extreme hot weather, about the tenth of that month, seventeen days before their annual period, did somewhat better than the first brood, owing, as I conceive, to being hatched nearer their proper period.

From all I can collect on the subject, from the more accurate experiments of others as well as my own, I come to the conclusion that no difficulty exists as to keeping eggs for successive hatchings, as all producers of eggs can easily produce them at the different seasons required, marking on the papers on which they are deposited the date of their production. It has been found by all experiments promulgated, that a week or two variation from the proper time will make little or no difference as to the health of the worms. Common sense will suggest all other precautions necessary in preserving silk worms' eggs, as every one knows that all kinds of eggs would be ruined by improper exposure after the germ has started.

The trees on which I contemplated raising my worms this season were the Morus Multicaulis, or "Perotted" Mulberry. They were planted the last week in May. The leaves at the time I commenced feeding were somewhat larger than those of the native red mulberry, but I was reluctant to rob the tender branches of these young plants, having been planted so late, (one month later than they ought to have been.) I therefore fed from the native tree, (Morus Rubra) and from the white (Morus Alba.) I fed also occasionally from my nursery of Multicaulis, taking only the lower leaves. I found the worms to eat the latter much more greedily than either of the other kinds, leaving not a vestige of them. I conceive, however thus changing the food

of silkworms a great error, especially in the latter part of their existence as a worm, it being prejudicial to their health. All will perceive what gluttons they become in the last ten days before they begin to spin, and how ravenously they will devour any different kind of mulberry-leaf given them; which causes them, sometimes, even to burst.

My feeding shelves were constructed of strips of lath nailed together at the ends, forming a frame covered with paper pasted on them; the frames four feet long and two feet wide, resting on cleets so as to shove in and out at pleasure; these shelves are one foot apart, seven in a tier. My experience induces me to believe that fifty worms may well be accommodated to each square foot of shelf.

I have devised various methods to accommodate the worms in spinning their cocoons, such as bunches of straw tied in the middle and spread at the ends and set upright between the shelves; paper cells, crumpled paper, &c., but find nothing better, or so convenient as green oak branches with the leaves on, placed round the feeding shelves. The worms seem fond of climbing among these, and the cocoons are as easily gathered as from any I have seen. As to this however, I do not pretend that my apparatus is the best that could be contrived; nor am I about to form a manual for the guidance of others, but felt myself bound to give the committee my manner of conducting the experiment in the production of the silk I have exhibited. Let me here recommend to all who may wish to commence or pursue the cultivation of silk, to procure the Journal of the American Silk Society, published at Baltimore monthly by Gideon B. Smith, Esq., Editor, and Secretary of the Society. Mr. Smith exhibits evidence of more actual experience in the silk culture than any other individual in the country. All back numbers for the two past years may be obtained for $2, and any one engaged in this business would, I think, find a single number worth to him the amount paid for a whole

year's publication. There are many manuals extant, but they cannot be depended upon for correctness.

My method of managing the silk after the cocoon was formed, I have given the committee in the application for a premium. The reeling and manufacturing was performed by my wife and the females of my family, as handling silk can best be done by female hands. Indeed, I consider nearly all the labor of raising silk, after gathering the leaves from the field, most appropriate for females. And here I would state my views, that one great advantage in the silk culture, is to be derived from the circumstance, that pursued as a collateral branch of agriculture, it will give profitable employment to the female part of the farmer's family; since the music of the spinning-wheel and the sound of the shuttle is no longer heard in our dwellings; and almost every farmer has more or less help that is inefficient at the more laborious parts of his business, such as infirm persons, females, and children; and who could cultivate and reel silk as well as more efficient hands. It would, moreover, form a delightful task for females and youths, whose inquiring minds would be thereby cultivated and enlarged by viewing the operations of nature in the formation and various changes of the silkworm. It may be out of place here for me to speak of the moral tendency of the silk culture, but I must assure those who have never viewed the wonderful operations referred to, that if "an undevout astronomer is mad," an undevout silk grower, must be no less insane.

I am constrained to say, that I felt strong doubts as to the practicability of the silk culture here, before I attempted any experiments, and was carried along with the tide of opposition that seemed to set so strongly against this enterprize. But being determined to satisfy myself by actual experience, I commenced experiments on the first introduction of the improved varieties of the mulberry; and having watched with deep interest the progress of this cul-

ture, and been engaged with some assiduity in experimenting on the subject, I have come decidedly to the conclusion that it will become a great and profitable branch of agriculture, a business of immense importance to us as a nation, and as individuals. And should silk one day rival all our other staple commodities, it would not excite my surprise. But the business is yet in its infancy, although far more has been done the present season than its most sanguine friends contemplated. After encountering all the opposition generally attendant on any new enterprize, the silk growers have thus far succeeded in establishing the fact, if nothing more, that the business is practicable and profitable in this country. The sound of "humbug," of "merino sheep mania," and of "multicaulis mania," which we have heard, has been found to be a mere phantom, and has nothing to do with practical silk growing. The fact is, we shall never succeed in raising silk, unless we try.

Is it to be credited that a people so renowned for enterprize and industry as those of New England, would shrink back from even a trial of their skill to raise silk? Inhabiting a climate, equalled by no other in the world, except that of China, as to the great desideratum, (dryness,) excelling all the humid climates of Europe, where only one half the worms hatched are calculated to come to maturity, and where the execrable siroc winds often prevail to the destruction of whole broods of silk-worms, and where also, in many of the silk growing kingdoms the heavy tax of thirty three cents is paid for every pound of silk raised, and sixteen cents for every mulberry tree. Favored, as we are, with a free government, where industry is never taxed, shall we fear to enter into competition with those foreign vassals? Should we make the trial, and should we succeed in introducing an employment that would tend to keep our young men from wandering away, leaving the tombs of their fathers, often to find an

early grave among the infested prairies of the west; and our young women from flying to the manufacturing towns to be immured in loathsome prisons, where all improvement in household concerns with them must cease; a great and philanthropic purpose will be accomplished.

I will only add, in conclusion, that from all experiments that have been promulgated, the *Morus Multicaulis* seems to be the only tree with which we may expect to succeed in a profitable cultivation of silk. Although this tree is classed among the tender varieties of the mulberry, yet, so luxuriant is its growth, that if taken up in the fall and placed in the cellar, or buried in the field, and replanted in the spring, it will produce a pound of leaves to a tree in the same season of planting. Some may be startled at the proposal of this extra work of taking up and replanting yearly, yet I can assure any whose fears may be thus excited, that an acre of these trees may be taken up, secured, replanted, and cultivated through the season, at less trouble and expense than an acre of potatoes can be planted and cultivated; and if properly managed, not a tree will be lost. It has also been found, that the foliage will put forth as early as if they could be left standing in the field. As to the product of an acre thus planted the following simple elements may be deduced from the practice of numerous individuals:

1. On an acre of ground may be planted ten thousand trees.

2. Each tree on land of fair quality, will produce, on an average, one pound of leaves.

3. One pound of leaves will feed sixteen worms until they spin.

4. Three thousand worms will produce one pound of silk.

Thus an acre, containing ten thousand trees, will produce fifty three pounds of raw reeled silk. I should not rely on these premises, were they not sustained

by numerous experiments promulgated by men of undoubted authority, and among them the Rev. D. V. McLean, of Newhold, New Jersey, who raised twelve pounds of reeled silk on one quarter of an acre in 1839, planted with morus multicaulis trees. Although all my own experiments on a smaller scale seem to come to about the same result, yet I much doubt if a proportionate result can be realized on a larger scale. But this remains yet to be proved.

With regard to the cost of production, Mr. McLean observes, that from his experience, he is satisfied that silk can be produced at $2 25 per pound, and is inclined to the belief that it may be produced at $2, Now, as to this, if the farmer was to charge each ordinary crop raised on his farm with every item of expense, board of workmen, rent of land, manure, &c., at the price usually paid, he would find the cost more than the value of the produce. But if silk now worth five dollars per pound can be produced for two dollars and twenty five cents, here is a net profit of two dollars and seventy five cents per pound, or one hundred and thirty seven dollars and fifty cents per acre, if fifty pound to the acre is raised. But it was not my intention to go into any minute estimate of the profits of the silk culture; my own experience in the production and reeling the silk exhibited to the committee warrants me in the belief, that the estimates above referred to, are mainly correct, and within bounds. I would only state, that in the production and manufacturing silk stocking-yarn from floss and perforated cocoons, a sample of which is exhibited, that I accord with the statement of a quaker lady of York, Pennsylvania, lately made, that the whole expense of raising and manufacturing a certain number of knots or cuts of such yarn, would be, not more than one quarter the expense of raising and manufacturing an equal number of cuts of flax-thread.

I hope, gentlemen, before the conclusion of anoth-

er year, some persons will be able to give the society a more perfect account of the state and prospects in our county of the silk culture, from experiments on a more extended scale. Mr. Joshua Tappan and lady, of Newbury, seem to have done the most of any in the county, within my knowledge, in this culture; and should they persevere with the assiduity they have manifested, they ought to be encouraged. As for myself, if the unavoidable misfortunes which have interrupted my experiments the present season, should not again intervene, I shall pursue the enterprize in future on a larger scale, and hope to show the society a better result.

I would only remark, that in my experiments I have pursued exclusively the natural system, no artificial heat was employed, and none is required by this system. It is this, which farmers and all those who may practise silk growing incidentally will follow. It is well known that in the silk growing countries of Europe, it is necessary to create artificial heat, even to hatch the eggs, that the peasants often carry them in their bosoms several days for this purpose; but in our climate, so congenial to this culture, nothing of this is necessary, nor is artificial heat required to promote the progress and growth of the worm. But when pursued as an exclusive business, it may be well to adopt what is called the artificial system, as more profit could undoubtedly be derived. By the former system, no thermometers, no stoves for heating the apartments, and, according to the new theory which has been before mentioned, no ice-houses, or refrigerators for retarding the hatching of eggs, will be required. Any common out-building, or room of the house, kept clean and well ventilated, will answer all the purposes required.

I must apologize for making so many general remarks, aside from the duty required of me, that of a simple statement of facts, giving the manner of conducting the experiments for which I have asked a

premium. But in perusing the published transactions of our society for the several years past, I have been astonished that so little apparent interest seems to have been taken in the silk culture in our county. Less seems to have been done here than in any portion of the United States, and, as I believe, few portions are better adapted to the culture. Little has been said in the transactions except in the general remarks of a respected member of this committee, in whose statements I perfectly accord; and, although I have decidedly recommended the introduction of the improved varieties of mulberry, yet we ought not to lose sight of the just remarks referred to, as to the management of the white mulberry; for I consider it expedient to continue to plant and cultivate the latter, especially in hedges to surround the fields of the multicaulis. And although I should despair of profitably raising silk with no other tree than the white mulberry, yet, a considerable business has been done in Connecticut with this tree alone; and it may be found to be valuable in producing early foliage.

TEMPLE CUTLER.

Hamilton, September 13, 1840.

NOTE.—We publish with pleasure, the detailed experiments of Mr. Cutler, who appears to be zealously engaged in the culture of silk, because we think it an interesting subject of inquiry;—but we would not be understood as adopting the views, so confidently entertained by Mr. Cutler;—on the contrary, we have much doubt on the subject. But few of the mulberry orchards, that we have seen in the county, have been worth preserving.

J. W. P.

MOSES P. ATWOOD'S STATEMENT.

To the Committee on Mulberry Trees, &c.

GENTLEMEN—I have a nursery of the Morus Multicaulis mulberry tree, which I should be pleased to offer for your inspection. They stand on a spot of land about two rods square, with a southerly aspect, and number about six hundred. About three fourths of these have grown from layers, the remainder from slips, planted about the 8th of May. With respect to the average height of the lot I have made no careful estimate, but in the opinion of Rev. Mr. Perry, one of your committee, who viewed them, they would average five feet. They were picked during the feeding season rather closely, but have since regained their foliage, and without sustaining injury, have on the contrary, shot out their branches and thriven more luxuriantly since the feeding season. A specimen of the silk raised from them will be offered on the day of exhibition, for examination. The feeding from these has been during the present year a matter of experiment with me, and the result is that without considering it wise to place entire dependence upon them, (for I have the white mulberry,) still I think, from the great amount of foliage they produce, and the convenience and ease of collecting it, that *much* advantage may be derived from them.

I am, with respect,

Your obedient servant,

MOSES P. ATWOOD.

Bradford, September, 1840.

G. B. PERRY'S STATEMENT.

To John W. Proctor, Esq.

DEAR SIR:—I wish through you, to present to the Essex County Agricultural Society, an orchard of white mulbery trees for their examination and award.

The trees in this plantation stand one rod apart each way, vary from five to twelve years in age, were all cultivated from the seed by myself. They vary considerably in height, some of them being ten or twelve feet, where others do not exceed three or four; the probable average may be seven or eight. The reason they are not generally taller, is, that they have been kept headed down in the nursery for the purpose of feeding the silk worms. They stand now in a soil of mixed sand and loam, mostly upon a slaty sub-soil. So far as I understand the subject, I believe them favorably situated, both for encouraging growth, and rich and nourishing foliage. They were transplanted from the nursery this spring, and have done well, though the extreme dryness of the season was unfavorable. A few have died; there remain between five and six hundred, whch may be considered as being flourishing and promising to do well. My intention is to let them throw out lateral branches, but not to suffer them to grow above ten or twelve feet. Whether this will prove a well advised course must await the result of actual experiment.

Respectfully yours,

G. B. PERRY.

Bradford, September 1, 1840

JOSEPH FOSTER'S STATEMENT.

To the Committee on Mulberry Trees, &c.

GENTLEMEN—I offer for premium an orchard of

mulberry trees, raised from seed, and now consisting of about five thousand trees, of the white mulberry. Five hundred are five years old; two thousand are three years, and two thousand are two years; those of five years, are from three to six feet high; those of three years, are from two to four feet; and those of two, are from two to three feet in height. About five hundred of my trees I raised by heading of them down. I have found that the best method of cultivating the trees, is by taking up the seedlings in the fall and burying them in the earth about two feet deep; the spring following, I set them in a nursery, about nine inches apart in a row, the rows about two feet apart; in the fall, dig them up and bury them again in the earth. The next spring I set them out as standard trees, in the orchard, about four feet square apart. The whole labor of cultivating the trees, is by my own hands.

I offer, also for premium, a hedge fence on one side of my field, sixty three yards in length, the north side; and on the south side, forty one yards in length. I found by Mr. J. H. Cobb's manual that the white mulberry forms an excellent live fence, and that once established, is probably the most permanent of any. He recommends this as accomplishing three important objects: supplying food for silkworms; keeping the trees low, that the leaves may be gathered by children from the ground; and, furnishing a good and almost never-ending fence.

The reason, gentlemen, that I send this statement is, that Mr. Proctor requested me to write it, and he would forward it immediately. I expect that statement I sent to Georgetown, miscarried.

JOSEPH FOSTER.

Beverly, October 10, 1840.

MRS. BURBANK'S STATEMENT.

To the Committee on Mulberry Trees, &c.

GENTLEMEN—Agreeably to your request I send you the particulars of Mrs. Mehitabel Burbank's commencement in the raising and manufacture of silk.

A Mr. Jacobs brought the eggs from India, and she obtained them in 1815. Some mulberry trees had been planted on her land some years before by a Mr. David Burbank, who was a tenant in her house. Where he obtained them I am not able to inform you. Mrs. Burbank was seventy years old when she commenced, and in the course of two years raised the silk and made the gown that has been lately exhibited at Georgetown; besides silk gloves, and sewing-silk, a considerable of a quantity. Being ignorant of the art of reeling silk, she was obliged to pick the silk from the cocoon, and card it, and then spun it on a linen wheel, and wove it in a common loom. The gown was colored and dressed at Mr. Morse's mill in Bradford.

She is now living in Bradford, and was ninty five years old last April. She is the widow of Samuel Burbank, who was ensign in Baldwin's regiment, in the revolution of 1776; came home on a furlough in 1777, and died of the small-pox. Mrs. Burbank, likewise, had the small-pox, and has since been pressed for a nurse in pest houses. She has been a widow sixty three years, and followed the last of her children to the grave thirty years ago; and has been a member of a church forty years. She now enjoys very good health, and enjoys a ride of several miles as well as many young persons,

Yours in esteem,

J. W. REED.

Bradford, November 12, 1840.

ON LIVE FENCES.

To John W. Proctor, Esq.

The committee acting at your suggestion on the subject of live fences, after having examined the fence offered by Mr. Joseph Foster of Beverly, the only one presented, respectfully Report:

That in their opinion the fence is not of sufficient length nor is it so well "trimmed and filled" as to entitle Mr. Foster to either of the premiums offered by the society, yet as they thought it would in "*beauty and economy*," prove of great service to the county to have such fences extensively cultivated, and supposing the society would wish to encourage every well intended enterprise as a means of forwarding this improvement, the committee recommend that a gratuity of five dollars be given to Mr. Foster for his pieces of live fence of eighty yards.

By the committee,

December, 1840. G. B. PERRY.

ON AGRICULTURAL IMPLEMENTS.

The committe on Improved Agricultural Implements Report:

That the only improved implements exhibited for their inspection, were three ploughs of Prouty & Mears' patent, one of the larger and two of the smaller class. The reputation of these ploughs is

exceeded by no others, wherever they have been used. Their superiority consists in the length and curvature of the mould board, by which the sod is turned unbroken, and laid entirely flat, instead of angular. The beam is also so constructed that the draft is applied with the best possible advantage.—The work done by these ploughs at the ploughing match was very good, and your committee would recommend a premium to be given to Mr Samuel J. Barker, of Andover, who entered the ploughs, but are restrained by the terms of one of the rules of the society, which require that the improved implement shall be the invention of the exhibitor, in order to entitle him to the premium.

ALLEN W. DODGE,
September 30, 1840. DANIEL MOULTON.

To J. W. Proctor, Esq.

DEAR SIR—I accompanied the old gentleman from the meeting-house, on cattle-show day, as you requested, and examined the horse hand rake, an invention of his son, who was with him and who was prevented from exhibiting it at the usual time, by his inability to find the committee. If you recollect, no other member of the committee but myself was present. Mr. Moulton acted with me, in examining the ploughs, as will be seen by the former report. You can add the following to that report, if it can consistently be done.

Yours, respectfully,
ALLEN W. DODGE.
Hamilton, October 5, 1840.

To the Trustees of the Agricultural Society.

GENTLEMEN—At a late hour and after making the above report, Moses Noyes Adams, of Newbury,

exhibited to one of the committee for a premium, a wheel hand rake, of which he claims to be the inventor, and which appears, by the certificates annexed, to have been used and approved by practical farmers.

This rake is altogether different from the horse rake, but like that, is a great labor-saving machine. It is propelled by hand, by means of a pair of long handles or shafts, by which it is *pushed* along. The wheels are two feet in diameter, and support an axle-tree from eight to ten feet in length. To this axle-tree the teeth, thirty four in number and of steel, are attached; they are about eighteen inches long, slightly curved upwards where they meet the ground, and at their junction with the axle-tree have a slight play up and down, so as to pass stones and other obstructions without injury or impediment. A number of upright iron rods, say a foot long, are also inserted in the axle-tree, to receive the hay as it is taken up by the teeth. The only operation necessary for dropping the hay after the rake is filled, is to draw the rake towards you; by depressing the handles or shafts, the teeth, on the opposite side, are elevated, and you pass on without any material delay. In this particular, the wheels perform an important part, facilitating the passage of the rake over the hay thus deposited. Indeed, by means of the wheels, the rake glides along easily and rapidly, requiring not so much labor as the common hand rake to use it, while the work it performs is three or four times greater in amount.

It is, therefore, recommended that the premium of ten dollars be awarded Moses N. Adams, of Newbury, for his wheel hand rake. Whether or not it shall accomplish, on longer trial, the objects it designs and come into general use, it certainly evinces so much ingenuity in its plan and construction, as to merit the encouragement of this society.

It was with surprise, not to say regret, that no other agricultural implements, the new fruits of do-

mestic skill, were observed at the fair, At the annual fair of the Royal Society of England, held in July last, the show of implements embraced no less than eighty six different ploughs, numerous threshing machines for horse and hand power, straw cutters, harrows, scarifiers, mowing machines, drill barrows, &c. It is true, that the premiums offered by foreign societies are well adapted to call forth invention and skill, and to excite competition. For example, in the list of premiums offered by the Scotch Agricultural Society for the present year, (nearly three hundred in number,) is one of twenty five hundred dollars for a steam machine for ploughing.

The agricultural societies of New England have no such splendid rewards to offer; but they stand ready to foster, as they are able, native talent, and to usher before the public eye, the results of its labors. Let, then, the mechanics, and the farmers of Essex county set their wits at work in devising and executing a larger number of improved implements for farming. Yankee ingenuity is busy in all the other departments of industry; that there is room for improvement here cannot be denied; that other countries are going ahead in agricultural mechanics must also be acknowledged. Shall New England; shall Essex county fall in the rear in the rapid march of agricultural improvement?

ALLEN W. DODGE.

Hamilton, October 5, 1840.

Copy of Certificates.

I have used Adams's Wheel Hand Rake and found it to be of great utility. I believe I can rake six acres in the same time that two acres can be raked by a common hand rake.

WILLIAM C. LANGLEY.

Newbury, October 1, 1840.

I hereby certify that Moses N. Adams has raked, with his wheel hand rake on two different lots of marsh for me, (in all I should think to the amount of two and a half acres,) and finished his work with unusual dispatch and to my perfect satisfaction.

EBENEZER LITTLE.

Newbury, October 1, 1840.

ON FRUITS AND FLOWERS.

It is said by our modern astronomers, that there has been a regular succession of warm and cold seasons for the last century, and according to their calculation, the warm summers commenced in 1837. Be this however as it may, we find fruits generally to have ripened earlier this season, than in the two previous years; cherries, which ripened in 1838 and '9, from the 4th to the 10th of July, were gathered the present year in June. Regarding the past season we have seldom, on the whole, known a more prolific one. Notwithstanding the early drought and the multiplicity of insects upon our trees, causing fruits to fall prematurely, it is gratifying to your committee to find so many exhibited, showing an increased attention to this department of cultivation. They believe that as a source of income, no pursuit could be more safely relied upon, than the cultivation of the finest winter apples, *peculiarly suited to our region.* We say peculiarly suited, for, while we acknowledge that the Newtown Pippen of Long Island, and Pennock's fine winter Apple, of Pennsylvania, with some other southern varieties, the fruit of which we occasionally receive, are very superior, yet, when grown with us, are inferior to our

Baldwin, Rhode-Island Greening, Minister, Hubbardston Nonesuch, and some others. The finest table apple known in the warm climate of Italy, (and which was exhibited here, this morning,) is with us, an indifferent cooking fruit. Your committee have endeavored to ascertain the name of each contributor, but in the hurry and bustle attendant on such occasions, there may have been some omissions.

Andrew Dodge, of Wenham, presented pears, apples and quinces of twenty one varieties. Gardner B. Berry, of Bradford, exhibited ten varieties of apples and pears. Robert Manning, of Salem, sent in fifty four kinds of pears and apples. Charles M. Brown, of Byfield, one barrel of fine Baldwin apples, marked "Blush Apple." They were, however, the true Pecker or Baldwin.

Fine specimens of fruit were exhibited by E. Emmerton, Salem; Eben'r Smith, Beverly; Peabody Russell, Boxford; Humphrey Nelson and James Peabody, of Byfield; Augustus Putnam, Danvers; Moses Pettingel, of Topsfield; Abel Nichols, Danvers; I. B. Bateman, Georgetown; Simon Wardwell, Andover; Miss Ellen B. Dodge, Salem; Wm. Oakes, Ipswich; A. L. Peirson and John M. Ives, Salem.

Fine Corn was shown by Daniel Putnam, John Preston, and Abel Nichols, of Danvers; William Osborn, of Saugus; Andrew Dodge, and John Colby, of Bradford; and Jacob F. Davis, of Newbury. Your committee could only notice particularly a few specimens. The eight-rowed variety of Wm. Williams, of Rowley, and John Preston, of Danvers, was good, particularly the former. The brindled corn (or Gov. Hill's famous variety) of Daniel Putnam, and which had obtained a former premium of this society, was fine; the bundle numbered 2, harvested by cutting the stalks at root, was bright, and we thought heavier than No. 1, which was harvested in the old way.

There were as usual a number of mammoth squashes, from the following contributors : Jona. Buxton, Samuel Balch, Erastus Ware, Samuel C. Hodgdon, J. Emerson, and Samuel Jenkins.

There was a larger collection of Flowers, particularly the dahlia, than at any former exhibition. They were from Wm. Oakes, of Ipswich, George Spofford, of Georgetown, and Francis Putnam and Henry Wheatland, of Salem. The two last mentioned numbered seventy five varieties. Your committee were highly gratified in witnessing this rare display of beauty ; it is surprising to see the endless varieties which have taken place in this beautiful flower since its introduction from Mexico. We have now all the shades of red, yellow, purple, and from pure white to almost black, but as yet no blue, a color which will probably never be found, because blue and yellow being the primitive colors of flowers, and always exclusive of each other, no blue flowers can change to yellow, nor yellow to blue.

The following gratuities are recommended by your committee:—To Francis Putnam, two dollars; J. M. Ives, three dollars; Samuel Balch, Humphrey Nelson, Andrew Dodge, G. B. Perry, Ephraim Emmerton, A. L. Peirson, Ellen B. Dodge, Samuel Jenkins, Josiah Newhall, Erastus Ware, Jonathan Buxton, Samuel Putnam, and Edward Lander, one dollar each; Robert Manning, William Williams, and John Preston, one dollar and fifty cents each; Moses Pettingel, two dollars.

At no previous time were there such facilities for the disposal of good winter apples and pears. There is no danger of overstocking the market. Railroads and steamboats have opened the way for the disposal of large quantities in the cities of our own country, and also in Europe. Our apples bring good prices in England. The question is often asked, why do not our farmers attend more to orcharding? We apprehend one cause to be in the difficulty of raising

stocks from seed, as so many are often winter killed. Now, although Coxe, Forsyth, and others have deprecated the practice of raising stocks from suckers, we prefer them particularly for pears; their roots, running more horizontal, are not inclined, as are seedlings, to penetrate deeply into a bad subsoil; one of the most practical cultivators of pears in our country is of this opinion, as by far the greatest proportion of trees which have died with him have been worked upon seedlings. If this theory is true, as we presume it is, how readily could our farmers obtain stocks; fine, straight shoots are frequently seen growing from two to five feet from the body of their trees, which could be taken up early in the spring, and budded in August. They should, however, be planted not in a retired and shady nook of their fields, but in their best mellow and rich soil, placing the rows from four and a half to five feet apart, and keeping the ground free from weeds.

On a review of this abundant season which is now about to close, we should be filled with gratitude to Almighty God, who has crowned the year with his mercy and loving-kindness.

Respectfully submitted,

For the committee.

JOHN M. IVES.

December, 1840,

ON MILCH COWS AND HEIFERS.

The Committee on Milch Cows and Heifers, Report:

That they recommend that the society's first premium of ten dollars for the best cow, be awarded to Charles F. Putnam, of Salem.

Second premium of six dollars, to Albert Johnson, of Lynn.

Third premium of four dollars, to Hobart Clark, of Andover.

That the first premium of six dollars, for two year old heifer in milk, be awarded to Daniel Putnam, of Danvers.

Second premium of four dollars, to Parker M. Dole, of Newburyport.

Also, the first premium of three dollars for the best yearling heifer, to Edward Crowninshield, of Danvers.

Second premium of two dollars, to William Thurlow, of West Newbury.

Twelve cows were entered for premium; three heifers in milk, and twenty one other heifers. The exhibition of cows was unusually large, and several of these animals possessed remarkable excellence.—Your committee were embarrassed in relation to the best cows, by the fact that Mr. Putnam's calved in October, and Mr. Johnson's in March; thus bringing the best Milking time of Mr Putnam's cow in *winter*—a season less favorable for a large yield of milk than the summer. Mr. Johnson's cow gave more milk per day during some months of the year, than Mr. Putnam's; but in the *seventh* month of the milking of Mr. Putnam's cow, she gave 24 quarts more than Mr. Johnson's in the *sixth* month of her milking—rendering it probable that Mr. Putnam's cow would yield the larger quantity in a year.—Another fact was embarrassing. The statements of Messrs. Putnam and Johnson give us the yield *in milk*, while Mr. Clark gives his *in butter;* consequently it was difficult, if not impossible, to make a satisfactory comparison. Two other cows, one owned by George Spofford, of Georgetown, the other by Josiah Crosby, of Andover, were very good.

DANIEL PUTNAM,
CHAS. F. PUTNAM,
SILAS MOODY.

September 30, 1840

MR. CLARK'S STATEMENT.

To the Committee on Milch Cows.

GENTLEMEN—The cow which I offer this day for exhibition is ten years old. I purchased her from a drove when a yearling. She calved the present season on the 28th day of May, and her calf was taken from her when three weeks old. The milk of this cow, the first week, produced fourteen pounds of butter; the second, twelve and three fourths. Her first week's produce is present for your inspection. She has had nothing during most of the season but common grass feed. The average weight of her milk now is twenty pounds. Her calf is present with her. Her age is four months and three days.

I am, with respect,
Your obedient servant,
HOBART CLARK.

Andover, September 30, 1840.

DANIEL PUTNAM'S STATEMENT.

To the Committee on Milch Cows.

GENTLEMEN—The heifer I offer you for exhibition this day was two years old in March. She has given milk since the 30th of June. She gave in nine weeks, (from the 27th of July to the 28th of September,) 570 quarts, averaging 9 qts. per day; the average quantity of butter is about 5 lbs. per week.—She has been fed the same as the rest of my cows.

Yours with respect,
DANIEL PUTNAM.

Danvers, September 30, 1840.

R. H. CHANDLER'S STATEMENT.

To the Committee on Milch Cows.

GENTLEMEN—The heifers that I offer to your notice, are three years old. I purchased them from a drove, April 15th, 1839, for twenty-one dollars each; they were then low in flesh, and as they gave milk till April, and calved the present season in June, and have had no extra keeping, are not in so good case as they ought to be. Speck calved June 5th; we began to milk her the last of the month;—the weight of her milk in the best of the season was seventeen to eighteen pounds a day; she gave a good mess through autumn and winter; we milked her till the 5th April; she calved the present season, June 28th; we began to milk her, 10th of July; she gave, in the best of the season, from twenty to twenty-one pounds; she now gives sixteen to seventeen pounds per day. Rolla calved June 24th, and gave eighteen to twenty pounds, the best of the season. She did not do as well through autumn and the first part of winter; the latter part of the time she did well; we milked her till 20th April; she calved the present season 20th June; she gave in the best of the season twenty one to twenty two pounds per day; she now gives thirteen to fourteen pounds per day. We have set the milk, part of each, so we are satisfied that it is of good quality. They suffered in the dry part of the season, both for feed and water. They have had no new feed this autumn.

Yours in esteem,

RALPH H. CHANDLER.

Andover, September 30, 1840.

PARKER M. DOLE'S STATEMENT.

To the Committee on Milch Cows

GENTLEMEN—This is to certify that I have kept a daily account of milk taken from my cow, from third May, 1840, to twenty eighth September, instant, (inclusive;) that the quantity is ten hundred ninety nine quarts, or two hundred seventy four and three fourth gallons. That she calved on the first day of May. Said calf was taken from her and killed at three weeks old, and weighed nineteen pounds per quarter. Said cow was two years old last April.

PARKER M. DOLE.

Newburyport, September 29, 1840.

The subscribers residing in the neighborhood of Mr. P. M. Dole, certify that the above statement signed by him, is in our opinion correct.

EBENEZER STONE,
STEPHEN S. HODGE,
DANIEL LAKEMAN,
W. B. BANISTER.

Newburyport, September 29, 1840.

ON THE DAIRY.

THE Committee on the Dairy, are happy to REPORT:

That the dairy women of the county have done more to enrich our show the present season than on former years. There were ten regular entries for premiums on butter, and several parcels were found not entered. The quality of the butter generally,

was quite good; much of it was superior. The committee have had not an unpleasant, but a difficult labor to decide who are best entitled to premiums. Between the June butter offered by Dean Robinson, of Newbury, and that by Daniel Putnam, of Danvers, there was little if any difference; but the committee decided, after awarding the September premiums, to recommend that your first premium, of eight dollars be awarded to Dean Robinson, of West Newbury; the second, of six dollars, to Daniel Putnam, of Danvers; the third, of four dollars, to Jesse Putnam, of Danvers. A firkin of June butter offered by William R. Putnam, of Wenham, was very good, and inferior by very little to that which is recommended for the third premium. There were also, specimens of very fair butter, by John Preston, of Danvers, Mrs. M. Wardwell, of Andover, and others.

For September butter, your committee recommend that the first premium of ten dollars be awarded to Daniel Putnam, of Danvers. They would, if guided solely by the quality of the butter, recommend the second premium to Peabody Ilsley, of West Newbury; but as no statement of cows and process of making accompanied this butter, the committee recommend that the second premium of eight dollars be given to Mrs. R. Buttrick, of Haverhill. Specimens of good September butter were offered also by Mrs. M. Wardwell, of Andover; Mr. John Preston, of Danvers; and very fair butter was offered by many others.

On cheese, your committee were not so heavily tasked. There were four entries. We recommend the first premium of ten dollars, to Isaac Carruth, of Andover. The second would be properly bestowed upon James Peabody, of Georgetown, had he given us the statements which the rules of the society require. This omission of Mr. Peabody causes us to recommend the second premium, of eight dollars, to Mrs. William Thurlow, of West Newbury. A sam-

ple of good cheese was exhibited also by Mrs. R. Buttrick, of Haverhill.

JOSEPH HOW,
ALLEN PUTNAM,
JOSHUA BALLARD,
BENJAMIN SCOTT.

Georgetown, September 30, 1840,

To J. W. Proctor, Esq.

SIR—Having been unable to attend the meeting of the board of trustees in December, I submit the following considerations relating to the management of dairies.

The first and most essential point to be gained is to procure *good cows*. It costs no more to feed a good cow, than a poor one. And the comparative result of their produce at the close of the year, makes a most essential difference in the profits of the farmer. Suppose one cow to give one quart at a milking, or two quarts per day, more than another, the milk being of equal quality; and this milk to be estimated worth two and a half cents per quart, and this to continue 200 days—here would be a difference of *ten dollars* in the produce of the two cows. This rule applied to a dairy of fifteen cows, would equal the sum of $150—half as much as the net annual income of a majority of the farmers in the county.

The *quality of the milk* is a consideration not less important than the quantity. Those, who never have tried the experiment of setting different cows' milk separate, have very imperfect ideas of their comparative value. I have known some cows that five or six quarts of their milk would raise cream sufficient to make a pound of butter. I believe this was stated to be true of the Oakes cow, from the milk of which was made twenty pounds of butter a week for several successive weeks; and I have heard

the same of others. But ordinarily, it takes ten quarts of milk to yield a pound of butter. It therefore becomes a point of great importance, in selecting cows for the making of butter, to obtain those whose milk is adapted to this purpose.

The *manner of feeding cows* is a point not to be neglected, in the management of a dairy. Good feed not only increases the quantity of the milk, but it improves the quality; and of consequence the butter and cheese produced therefrom are better also. The *kind of food used* is also to be regarded. Every dairy-woman knows that the milk will indicate the kind of food used; therefore those kinds of food which leave the best flavour in the milk should be selected. When cows have been fed on cabbages or on turnips, who has not tasted the peculiarities of these vegetables? When they are fed on indian meal, on carrots, or on beets,—it is fair to presume that these articles become incorporated with the milk also. I do not presume to say which of these articles is the most valuable to be cultivated for the feeding of cows; though I hope in this age of experiments, with so many inducements as are now held out for the trial, it will not be long before some of our farmers will give us satisfactory information on this subject.

The *manner of milking* also demands attention. Cows should be milked about the same time each day; and they should be milked *quick and clean.* If a portion of their milk is suffered to remain, this will soon diminish the quantity, and the cows will dry up. It is bad policy to trust milking to children, for they usually do it moderately and imperfectly, and more is lost thereby than would pay the best of laborers.

The *place for the setting of the milk*, is also worthy of attention. This should be cool, well ventilated, and exclusively appropriated to this purpose. For if it is permitted to be occupied in part for other purposes, some things will find their way there which will be injurious to the milk. It should also be

properly lighted. Cream will rise more favorably in a light than in a dark room, and the quality of it will be better. Therefore a dairy room above ground is preferable to a cellar. The room should be carefully guarded, by the use of wire gauze, or some other substance at the windows, against the approach of insects or intruders of every kind. The milk should be set in pans uncovered; as the cream will not rise so freely when there is a cover over the pans. Care should be taken not to fill the pans full, especially in warm weather, as the cream will rise quicker and better when the milk is spread over a larger surface. The sooner it rises and is removed from the milk the better; and this should always be done before the milk begins to turn sour. When the cream is taken off, it should be kept in tight covered vessels, in cool places, until the churning process; and this should always be before any sourness or mould is discoverable.

Much care should be taken to separate the butter-milk thoroughly from the butter. More depends on this than any other part of the process in making good butter. Unless this is done, it will be impossible to preserve it sweet and good. If our dairy-women would apply double the labor to half the quantity of their butter, and thereby thoroughly remove all particles of butter-milk, this one half would be worth more than the whole in the condition it is usually sent to the market. As this is a matter that interests every farmer, and every lover of good butter, (and who does not love it when it is fair and nice?) I have presumed to forward these remarks. You will use them as you think proper.

Respectfully Yours,

JOSEPH HOW.

Methuen, Jan. 6, 1841.

NOTE.—What I have said in relation to the working of butter, is to be understood, in relation to such

butter as had the proper previous management. For if the butter comes soft, it may be worked ever so long, and not become hard and good; although it may be improved by working. Butter that comes well will be fit for immediate use with very little working. But if it is to be kept, care should be taken that the buttermilk is thoroughly removed.

It was my intention to have said something on the feed of cows. But my remarks have already extended so far, I will simply say, that there is no feed on which cows can be kept, that will make better butter, than a first rate pasture; such as abounds with English grasses. When this supply fails, let the deficiency by made up by green corn-stalks. Farmers will do well to plant some corn extra, for this purpose.

The present winter, I have boiled roots for my cows, such as turnips and sugar beets, to which I add a little indian meal. This food when properly prepared and seasoned with salt, is well received by the cows, and improves the flavour, and increases the quantity of their milk. J. H.

DANIEL PUTNAM'S STATEMENTS.

To the Committee on the Dairy.

GENTLEMEN—I offer a firkin of June butter, containing forty five pounds. Process of making. The milk is strained into tin pans; it stands from thirty six to forty eight hours, according to the weather, when the cream is taken off, put into tin pails and occasionally stirred. We churn twice each week; when the butter is gathered, the buttermilk is drawn off; the butter is rinsed in two waters; then is taken out, worked over in part, salted, (1 ounce of salt to a pound of butter) and set

aside for twenty four hours, when the working over is completed. Put directly into the firkin, and a little salt sprinkled over what was put down each week. The firkin stood through the summer in the cellar.

DANIEL PUTNAM.

North Danvers, September 29, 1840.

To the Committee on the Dairy.

GENTLEMEN—I have brought for your examination two boxes of September butter, containing twenty six pounds. I know not that there is any thing peculiar in the process of making this butter. The milk is strained into tin pans; it stands from thirty six to forty eight hours, according to the weather; when the cream is taken off, put into tin pails and occasionally stirred. We churn usually twice each week; when the butter is gathered, the buttermilk is drawn off, the butter is rinsed in two waters; then is taken out, worked over in part, salted, (one ounce of salt to a pound of butter, and set aside for twenty four hours, when the working over is completed.

From May 20 to June 10th, I milked six cows; from the last date to August 1, the number was seven; through the month of August eight; and in September nine — averaging perhaps seven. Three of these were two year old heifers, and one three. From these cows I have made, since the 20th of May, six hundred and eight pounds of butter; have sold seven hundred and sixty eight quarts of milk; have used in the family probably eight quarts per day, or nine hundred sixty quarts. The pasture in which my cows feed is *poor*, but they have been fed at the barn every day upon hay, green oats, or green corn stalks, besides about two quarts of cob meal per day to each cow.

DANIEL PUTNAM.

North Danvers, September 29, 1840.

AMOS SHELDEN'S STATEMENT.

To the Committee on the Dairy.

GENTLEMEN—The three boxes marked A. S. contain forty two pounds of butter, it being the produce of eight cows and four heifers for ten days, ending the 27th of the present month. The cows have been kept upon common pasture only; all of them had calves in the spring; there was nothing peculiar in the management of the milk and cream, or in making the butter, the milk being kept in tin and earthen pans, and skimmed after standing forty eight hours, and the cream kept in earthen pots until churned, after which it is immediately washed twice in pure water, and then salted; after remaining twelve hours is worked over until all the buttermilk is extracted.

Yours respectfully,

AMOS SHELDEN.

Beverly, September 30, 1840.

JOHN PRESTON'S STATEMENT.

To the Committee on the Dairy.

GENTLEMEN—The butter which I offer for the society's premium is in two stone pots, one parcel of which was made in June, the other in September. The quantity contained in each exceeding twenty five pounds. The milk was kept in tin pans on the bottom of a deep cellar, paved with smooth stone, and permitted to stand as long before skimming as possible, without becoming sour. The cream was then taken off, put into stone jars, and placed in a brick vault, two feet below the cellar bottom. This

was the daily process, and at the end of a week, the butter was churned, worked, and salted with one and a quarter ounces of salt to the pound. It was worked once on each of the two succeeding days, when it was put into the pots. In addition to the salt in the *September* butter, was put one quarter of an ounce of loaf sugar to the pound.

Respectfully yours,

JOHN PRESTON.

North Danvers, Sept. 30, 1840.

WILLIAM R. PUTNAM'S STATEMENT.

To the Committee on the Dairy.

GENTLEMEN—I present for your inspection a firkin of butter containing sixty three pounds, made in the month of June. It was made from the milk of eight cows, which had no other feed than a common pasture; the milk was strained into tin pans, and kept in the cellar about sixty hours before the cream was taken off, which was put into tin pails and a little salt put in. It was churned once a week. When the buttermilk was drawn from the butter, it was thoroughly rinsed in cold water; then taken from the churn, and the buttermilk extracted from it; and one ounce of salt to one pound of butter put in; then in twenty four hours it was worked over again; then it was put in the firkin and kept in the cellar until to-day.

From R. C. Winthrop's farm, by

WILLIAM R. PUTNAM.

Wenham, September 29, 1840.

MRS. R. BUTTRICK'S STATEMENT.

To the Committee on the Dairy

GENTLEMEN—In behalf of Mrs. R. Buttrick, I present, for your inspection, two firkins of butter, made by her on my farm in Haverhill. The dairy consisted of five cows, one two year old, and two three year old heifers, one of which came in the last of July; making eight in all; and from the milk is to be deducted what was used in a family of six persons. The cows had common pasture feed only, excepting that they were fed with stalks in September. The smaller firkin contains forty three pounds of June butter, and is a part of two hundred and fifty three pounds, made from the 20th May to the first of July, when she commenced making cheese. The larger firkin contains sixty five pounds of butter made in September; being a part of one hundred and seventeen pounds, made from September 8th, to September 28th. Mrs. Buttrick's process is to let the milk stand until the froth settles, then carry it to the cellar; and after it has stood a proper time to skim it, then to suspend the cream in the well to render it cool, before churning; which is done three times per week. When churned, she washes the butter in cold water, salts it, sets it in the cellar till the next day; then works it until the buttermilk is out, on three different days; then lays it down in the firkin, sprinkling a layer of salt between each layer of butter.

Mrs. Buttrick, also, sends for your inspection three cheeses, weighing eighty five pounds; being a sample of thirty one cheeses, weighing seven hundred and eighteen pounds, made from the above cows in July and August. The process of making is the same as that fully detailed in the Society's Transactions for 1839; and is, therefore, not repeat-

ed. The cows, I think, not quite so good as the same number last year, and, owing to the drought, the feed was unusually short.

Yours with respect,

J. H. DUNCAN.

September 30, 1840.

ISAAC CARRUTH'S STATEMENT.

To the Committee on the Dairy.

GENTLEMEN—The cheese I offer for inspection, was made from the milk of five cows. Three gave milk the past winter, and one was dried in July; which we consider but four cows through the season, and have used milk necessary for a family of eight persons. Their feeding has been grass only. Weight of butter one hundred and sixty pounds;—weight of new milk cheese, two hundred and seven pounds; of four-meal, three hundred and forty pounds. The process of making is the same as stated heretofore.

Respectfully Yours,

ISAAC CARRUTH.

Andover, September 29, 1840.

MRS. H. B. SPOFFORD'S STATEMENT.

To the Committee on the Dairy.

GENTLEMEN—I present for your inspection, two boxes of butter, containing twelve and fourteen pounds; being a specimen of two hundred and forty pounds, made from two cows and one heifer since

the 15th June, all three of the calves being taken off at that time. The milk used in the family has been from one to two quarts daily. The cows as yet have had no other feed but common pasturing. After scalding the pans thoroughly, the milk is strained into them, and set in a cool place having the fresh air constantly upon it, where it stands from twenty four to thirty six hours, as the weather varies in temperature; the cream is then taken off and kept in a cold place — churned once a week. When taken out of the churn, get as much of the buttermilk out as possible. Salted to the taste, with salt pounded fine. In twenty four hours it is worked over till freed entirely from buttermilk, with spatters.

Yours with respect,

MRS. H. B. SPOFFORD.

Georgetown, September 24, 1840,

JESSE PUTNAM'S STATEMENT.

To the Committee on the Dairy.

GENTLEMEN—I was in hopes to have been with you to-day, but my health will not permit. I send you two parcels of butter, which I offer for the society's premium, if found deserving a premium. No. 1 firkin, made the first part of June, contains forty one pounds of butter. No. 2, earthen pot, made the latter part of June, and contains thirty six pounds.

The manner of making and preserving the above, was as follows: the milk, after taken from the cows, was strained in tin pans, and remained a sufficient time for the cream to rise, and then taken off before the milk was sour, and put in earthen pots, and remained in them until churned, which was twice a

week; the butter was taken out and worked over and salted with fine salt and four ounces of loaf sugar to every twenty pounds of butter, then put in the well or ice-cellar, and remained about twenty four hours, and then worked over the second time, and put in firkins. Our cellar being very dry and warm, instead of putting the butter in the cellar, as is usual, I put it in the well, in order to keep it cool. I put it about twenty feet below the surface of the ground, and there it has remained until yesterday, when it was taken up.

The above is humbly submitted, by

JESSE PUTNAM.

Danvers, September 30, 1840.

DEAN ROBINSON'S STATEMENT.

To the Committee on the Dairy.

GENTLEMEN—The tub of butter entered for premium, is a part of the quantity made from the milk of two cows, between the first of June and the 9th of July last. The cows were milked night and morning; the milk strained into tin pans, kept in a cool place above ground. The cream taken off while the milk was sweet, kept in tin vessels in the cellar ; churned once a week, well worked as taken from the churn and salted. In twenty four hours worked again with the hands, and put into the tub, which was kept in the cellar until two weeks past, when it was brought up. The tub contains fifty eight pounds. About fifty four ounces of the best salt that could be obtained, and forty ounces of the best refined sugar were used for the tub of butter.

I am, with respect,

Your obedient servant,

DEAN ROBINSON.

September 30, 1840.

MARGARET WARDWELL'S STATEMENT.

To the Committee on the Dairy.

GENTLEMEN—I present for your inspection, three firkins of butter, one of June, of twenty five pounds, two of September, of forty five pounds. I have made, since Monday of last week, fifty five pounds of butter, from six cows. I have now one gallon of cream; have thirty two pans of milk on hand. Our cows have had no feed but common pasturing till since haying; they have had a few small lots of fresh feed. I have managed with my butter much as formerly. I am very particular about working out all the buttermilk from the butter when it is first churned.

Yours with respect,

MARGARET WARDWELL.

Andover, September 30, 1840.

ON PLOUGHING.

I. *With Double Teams.*

THE Committee on Ploughing with Double Teams, respectfully REPORT: That ten teams were entered for premium, eight only ploughed, namely: Joseph Goodridge, of West Newbury, Jedediah H. Barker, of Andover, Perley Tapley, of Danvers, Hobart Clark, of Andover, Andrew Towne, of Andover, Samuel F. Barker, of Andover, Alexander Davidson, of Andover, and Jacob F. Davis, of Newbury.

The lot selected for ploughing was a lot of pasture land of Samuel Brocklebank's, a part of which was very rooty, with some small bushes, and difficult to plough; and the committee are of opinion, considering the quality of the land, that the ploughing will not suffer by a comparison with the ploughing of any former years.

The land was laid or marked off in lots, and numbered from one to nine, beginning at the north side.

Lot No. 1, was not drawn by any one, but was taken by Jedediah H. Barker, by consent, (he having drawn No. 9, which he relinquished to accommodate a single team,) which he ploughed with Prouty & Mears' plough, in fifty four minutes, with twenty three furrows.

Lot No. 2, was drawn by Andrew Towne, which he ploughed in fifty minutes, with Ruggles & Nourse's plough, with twenty two furrows.

Lot No. 3, drawn by Alexander Davidson, which he ploughed in sixty minutes, with a wooden plough, with iron mould board, with twenty four furrows.

Lot No 4, drawn by Hobart Clark, was ploughed in fifty minutes, with Ruggles & Nourse's plough, with twenty three furrows.

Lot No. 5, drawn by Samuel F. Barker, which he ploughed in forty four minutes, with Prouty & Mears' plough, with twenty two furrows.

Lot No. 6, drawn by Joseph Goodridge, which was ploughed in forty five minutes, with Howard's plough, with twenty two furrows.

Lot No. 7, drawn by Jacob F. Davis, which he ploughed in forty one minutes, with wooden plough, with iron mould board, with nineteen furrows.

Lot No. 8, drawn by Perley Tapley, which was ploughed in forty five minutes, with Moore & Mason's plough, with twenty four furrows.

After the best examination which the committee were able to make while the teams were ploughing, and a more particular examination of the several lots after they were ploughed, and the teams had

left the field, the committee were unanimous in awarding the premiums to the following persons, viz:

First premium to Joseph Goodridge, of West Newbury, of	$12 00
Second premium to Jedediah H. Barker, of Andover, of	10 00
Third premium to Perley Tapley, of Danvers, of	8 00
Fourth premium to Hobart Clark, of Andover, ...	6 00

After determining to whom the several premiums offered by the society should be awarded, the committee would state, that in their opinion, some of the ploughs used were of superior construction and workmanship, viz: the one used by Samuel F. Barker, and also the one used by Jedediah H. Barker, of Prouty & Mears' make, as also those used by Hobart Clark and Andrew Towne, of Ruggles & Nourse's make, all which we believe, in common ordinary ploughing would work well.

For the committee,

ANDREW DODGE.

Georgetown, September 30, 1840,

II. *With Single Teams.*

THE Committee on Ploughing with Single Teams, REPORT: That the following persons entered their teams for premium, and ploughed, namely:—

William Foster, Jr. of Andover, Moses Pettingell, of Topsfield, Nathan Tapley, of Danvers, Perley Tapley, of Danvers, Joseph C. Putnam, of Danvers, Simeon Dole, of Georgetown, Nathaniel Berry, of Andover, Samuel F. Barker, of Andover.

The committee are of opinion that the ploughing was quite equal to any former years, considering the unevenness of the land; part of it being stony. It

was with difficulty that the committee determined to whom to award the premiums, the ploughing was so equal on a number of the lots.

The competitors for the premium, ploughed each one, the quantity required.

Perley Tapley, ploughed twenty four furrows in twenty eight and a half minutes. Joseph C. Putnam, twenty five furrows, in twenty eight minutes. Wm. Foster, Jr., twenty furrows, in forty three minutes. Simeon Dole, twenty one furrows, in thirty one minutes. Nathan Tapley, twenty four furrows, in thirty three minutes. Moses Pettingell, twenty two furrows, in thirty six minutes. Samuel F. Barker, twenty furrows, in thirty one minutes. Nathaniel Berry, twenty one furrows, in twenty nine minutes.

After a careful examination, the committee came to the following result, viz:—

First premium to Perley Tapley, of Danvers, of	$10 00
Second premium to Joseph C. Putnam, of Danvers, of	8 00
Third premium to Moses Pettingell, of Topsfield, of	6 00
Fourth premium to Samuel F. Barker, of Andover, of	4 00

All which is respectfully submitted.

For the committee,

WILLIAM JOHNSON, Jr.

September 30, 1840.

III. *With Horse Teams.*

Your committee appointed to award premiums to the horse teams, would state, that of the three teams entered, only two performed. Mr. William Jones, having withdrawn, for want of land to plough.

Mr. Seth Kimball, ploughed with his own team, used Prouty & Mears' centre draught plough, performed his labor in a workmanlike manner; completing his land, an eighth of an acre, in thirty six minutes; and is entitled to the first premium of eight dollars.

Mr. Alexander Becket, ploughman, with the team entered by Mr. William S. Marland, and A. Drysdale, Scotch iron plough, had a more rough and rocky division of land, plough not well fitted for such land, yet showed himself to be a workman, and had his team under good command, performed his labor, satisfactorily, in forty six minutes, land two feet narrower than his competitor. He is entitled to the society's second premium of six dollars.

SAMUEL PRESTON,
RUFUS SLOCOMB,
RICHARD JAQUES.

September 30, 1840.

ON FAT CATTLE.

Your committee on fat cattle have attended to the duty assigned to them, and would make the following Report:

Your committee find but two oxen which they think deserving a premium. One exhibited by Joseph Yeaton, from Colman's farm, in Newbury, which is entitled to the first premium. The other, exhibited by Peabody Russell, of Boxford, received the second premium, last year, consequently cannot this. One cow only offered. We see as good or better, almost daily, and think her not entitled to a premium. We would recommend to the farmers of

Essex county, to give more attention to beef cattle. The premiums offered are liberal, and will warrant extra attention to their stock.

All of which is respectfully submitted.

RICHARD ADAMS,
JOSEPH NEWELL,
JAMES CAREY.

September 30, 1840.

ON BULLS.

The committee on bulls, have attended to that duty, and ask leave to Report:

That the whole number of bulls, and bull calves, entered, was twenty, the quality of which, taken as a whole, was good; many of them fine animals, and show an improved attention to this class of stock. Your committee have found it rather difficult where there are so many competitors and so few premiums offered on this class of stock, to do justice to their own feelings. They would, therefore, say here that if they have made many large mistakes in their conclusions, they may be considered errors of the head and not of the heart.

Your committee recommend that the first premium of eight dollars be paid to William S. Marland, of Andover, for his full blood Ayrshire bull, and that the second premium of six dollars be paid to Francis Dodge, of Danvers, for his red, two years old bull.

The committee would farther state that Mr. Horatio C. Merriam, of Tewksbury, presented a fine bull

and bull calf, for exhibition, for which he is entitled to the thanks of this society.

All of which is respectfully submitted.

AMOS SHELDEN,
JOHN PRESTON,
DAVID MIGHILL.

September 30, 1840.

ON OXEN AND STEERS.

The committee on working oxen and steers, having attended to the duties assigned them, ask leave to Report:

That twenty one pairs of oxen were entered for premium; that the exhibition of their drawing, which was over an ascent of about four degrees, and of loads, in a good degree, proportionate to the size of the teams, one wagon being loaded with about three tons, and the other with about two tons, was very good, and fully proved their superior training and discipline.

Your committee recommend that the first premium of ten dollars, be awarded to Dr. Joseph Kittredge, of Andover, for his brindle oxen, seven years old.

The second, of seven dollars to Hobart Clark, Esq., of Andover, for his red oxen, four years old.

And the third, of five dollars to Nathan Tapley of Danvers, for his red oxen, six years old.

Your committee examined ten pair of steers from one to three years old, and recommend that the first premium of seven dollars, for steers three years old, be awarded to Jedediah H. Barker, of Andover, and the second of five dollars, to William Williams, of Rowley.

The first premium of six dollars, for steers two years old, to John F. Carlton, of Andover; and the second, of four dollars, to Daniel Hoyt, of Haverhill.

The first premium of four dollars, for steers one year old, to Ralph H. Chandler, of Andover.

The second, of two dollars, to Dr. Joseph Kittredge, of Andover.

Per order of the committee,

ASA T. NEWHALL.

September 30, 1840.

ON SWINE.

The committee on swine, having attended to the duty assigned to them, to the best of their ability, Report:

That they award the first premium for the best boar, to Thomas E. Payson, of Rowley. The second premium for boar, to J. L. Noyes, of Georgetown.

They award the first premium for breeding sow, to Thomas E. Payson, of Rowley. Second premium to William Williams, of Rowley.

For the best litter of weaned pigs, they award the first premium to Thomas E. Payson, of Rowley.

Second premium, to William Williams, of Rowley.

They also recommend to Nathan Tapley, of Danvers, Perley Tapley, of Danvers, Colonel Newell, of West Newbury, a gratuity of three dollars each for litters of pigs; and to John Hall, for four shoats, a gratuity of two dollars. They also recommend a gratuity to Horatio C. Merriam, for a boar and sow, of five dollars.

The committee were very much gratified with the exhibition of swine, it being much superior to that

of any former year. The animals exhibited were very numerous, and if the number of premiums offered by the society had been greater, they would have been happy to have awarded them to other competitors, for many of the other pigs possessed great merit. They have not time to speak of them all particularly, and therefore do not specify any. They think however, that the litter of pigs offered by T. E. Payson deserve particular notice, being in the opinion of the committee decidedly superior to any of the other animals offered, and superior to any thing as a litter of pigs, all from the same sow, that they have ever seen.

All which is respectfully submitted.

For the committee,

WILLIAM S. MARLAND.

September 30, 1840.

ON DOMESTIC MANUFACTURES.

THE committee on domestic manufactures, having attended to their duty, beg leave to REPORT:

They have the pleasure of stating that the number of entries in this department exceeded those of previous years, and that as large an amount of skill and taste was manifested in their execution. The display of hearth rugs was numerous, and many of them were of exceeding beauty. The specimens of wrought lace and muslin were good, many of them surpassing any of previous years in their execution. The committee met with the same difficulty the present, as at the last exhibition, in deciding on the hearth rugs; where all were so handsome, they knew

not which should have the preference, they have, therefore, given many gratuities on them.

They witness with pleasure the continued interest the ladies take in adding to the exhibition specimens of their skill and taste, and have unanimously awarded the following premiums and gratuities:—

For the best piece of carpeting, to Miss Sarah A. Stevens, of West Andover, first premium, of $5 00

To Mrs. Dorcas French, of North Andover, for the second best, the second premium, of 3 00

To Mrs. Charity C. Dummer, of Newbury, for piece of carpeting, a gratuity of 1 00

For the best specimen of woollen cloth, to Eunice Killam, of Boxford, first premium, of 3 00

To Hannah Shattuck, of Andover, for one pair blankets, a gratuity of . . 2 00

To Mrs. L. H. Killam, of Boxford, for a piece of cloth, a gratuity of . . 1 00

For the best specimen of table linen, to Mrs. Phebe Ballard, of Andover, first premium, of 4 00

Hearth Rugs.

To Melinda D. and Mary B. Tewksbury, of West Newbury, first premium, of 3 00

" Miss Nancy Woodbury, of Beverly, second premium, of . . . 2 00

" Miss Harriet S. Lunt, of Newburyport, a gratuity of . . . 1 00

" Miss Elizabeth Hale, of Newbury, a gratuity of 1 00

" Mrs. Dorcas Hale, of Newbury, a gratuity of 1 00

" Miss Lydia N. Dole, of West Newbury, a gratuity of . . . 1 00

" Mrs. Phebe Jewett, of Newburyport, a gratuity of 1 00

To Mrs. Sarah Couch, of Newburyport, a gratuity of	$1 00
To Mrs. Martha Whitmarsh, of Beverly, a gratuity of	1 00
" Miss Adeline How, of Ipswich, a gratuity of	1 00
" " Eliza H. C. Huse, of Newburyport, a gratuity of . .	1 00
" " Anna B. Potter, of Beverly, a gratuity of	1 00
" " Nancy Woodbury, of Beverly, a gratuity of	1 00
" " Sarah Presby, of Beverly, a gratuity of	1 00
" Hannah D. Woodbury, of Beverly, a gratuity of	1 00
" Mrs. C. Ward, (three rugs) of Salem, a gratuity of	1 00
" Rebecca Newman, of Newbury, a gratuity of	1 00
" Hannah Hale, of Newbury, a gratuity of	1 00
" Mrs. Lydia C. Dodge, of Wenham, a gratuity of	1 00
" " Lois Thurlow, of West Newbury, a gratuity of . . .	1 00
" Nancy Sargent, of Salem, a gratuity of	1 00
" Miss Hannah Moulton, of Beverly, a gratuity of	1 00
" Anna Burnham, of Essex, a gratuity of	1 00
" Mrs. Albert Lackey, of Salem, "	1 00
For the best specimen of woollen hose, to Nancy Cleves, of Beverly, first premium of	3 00
To Mrs. Dorcas Hale, of Newbury, for hose, a gratuity of . .	1 00
" " Susannah Goodrich, of W. Newbury, for hose, a gratuity of .	0 50
" " Paul Bishop, of Newburyport, two pair hose, a gratuity of .	0 50

To Mrs. Bailey, of West Newbury, aged 89 years, for five pair cotton hose, a gratuity of	$ 50
" Eunice Andrews, of Boxford, for two pair hose, a gratuity of . .	0 50
For the best wrought counterpane, to Mrs. Mehitable Ballard, of Andover, first premium of	4 00
To Miss Syrena Putnam, of Danvers, second premium, of . . .	2 00
To Mrs. E. Morse, of Newburyport, for counterpane, a gratuity of .	1 00
To Mrs. Josiah Marden, of Newburyport, for counterpane, a gratuity of .	1 00
For the best specimen of wrought lace, to Miss Rebecca E. Page, of Danvers, first premium, of . .	3 00
To Mrs. E. B. Whittier, West Amesbury, second premium, of . . .	2 00
To Hannah D. Woodbury, Beverly, for knit cap, a gratuity of . .	1 00
To Lucy S. Adams, of Beverly, for wrought cape, a gratuity of .	1 00
To Mary E. Hildreth, of Beverly, for bead bag, a gratuity of . .	0 50
To Mrs. Myra Abbot, of Bradford, for wrought cape, a gratuity of .	1 00
To Mrs. E. Cleveland, of Topsfield, for two pair of silk hose, a gratuity of	1 00
To Myra G. Parker, of Newburyport, for wrought collar, a gratuity of .	1 00
To Mrs. E. Smith, of Beverly, for wrought work bag, a gratuity of . .	0 50
To Mrs. A. Kittredge, of Beverly, for wrought work bag, a gratuity of .	0 50
To Abby C. Dow, Newbury, for specimens of wrought work, a gratuity of	0 50
To Sarah L. Nelson, Georgetown, for wrought shawls, a gratuity of .	1 00
To Miss Eliza P. Fowler, of Danvers, for wrought lace veil, a gratuity of .	1 00

To Mary Ann Putnam, of Danvers, for wrought lace veil, a gratuity of . $1 00
To Mrs. David Hopkinson, Bradford, for wrought lace veil, a gratuity of . 1 00
To Mrs. Judith Colby, aged 91 years, of West Newbury, for two shirts, a gratuity of 0 50
To Mrs. Emily P. Fowler, of Danvers, for two wrought cricket covers, a gratuity of 1 00
To Rebecca P. Eveleth, of Danvers, for two wrought cricket covers, a gratuity of 0 50
To George Dawson, of Ipswich, for one pair of boots, a gratuity of . 1 00
To Mrs. Myra Abbot, of Bradford, for various pieces of wrought work, a gratuity of 1 00
To Mrs. Lucy Holt, of Andover, for wrought dress, a gratuity of . 1 00
To Louisa S. Kimball, of Bradford, for wrought collar and needle book, a gratuity of 1 00
To Eunice Cleaves, of Wenham, for net shawl, a gratuity of . . . 1 00
To Mrs. James Tewksbury, of West Newbury, for wrought quilt, a gratuity of 1 00
To Caroline E. Bradstreet, of Newburyport, for wrought lace, a gratuity of 1 00
To E. J. Bowditch, of Salem, for work bag, a gratuity of . . . 0 50
To Ira S. Tyler, of Georgetown, for dressed leather, a gratuity of . . 1 00
To Col H. K. Oliver, of Salem, for bee hives and box of honey, a gratuity of 4 00
To Messrs. D. & J. Pulsifer, of Salem, for painted carpets, a gratuity of . 2 00

All which is respectfully submitted.

For the committee,

I. P. PROCTOR.

Georgetown, September 30, 1840.

ON CULTIVATION OF CROPS.

The committee on the cultivation of crops to whom were referred the three claims which are annexed, after considering the same, have concluded to Report:

That they award the premium of ten dollars, to Mr. Stuart, and they recommend that a gratuity of five dollars to each be paid to Messrs. Putnam and Dodge.

It is understood that entries of other claims were made which have not been prosecuted. The committee regret that such should be the case, especially as it may have been occasioned by a failure in the anticipated abundance of the harvest. But even if such have been the events, it might still be useful to know to what causes the disappointments have been owing. The point to be gained by the publication of statements and reports, is to render cultivation more intelligent, by communicating to the whole the experience of each. So far as there has been anything peculiar, or in the nature of an experiment in the mode of rearing the crop which has failed, it is perhaps equally important that the details of the cultivation should be laid before the public, as if the result had been one of complete success. That course of culture would then cease to be an experiment, and the intelligent farmer would be careful to avoid a repetition of the same error. All experience in human affairs must of necessity consist of evil as well as of good, and the record that contains only the good, and omits all history of the evil, cannot but be imperfect. But if any improvement in the annals of Agriculture is desired in this respect, it is perhaps only to be accomplished by a change in the principles upon which premiums are awarded.

A great crop may be the result of merely fictitious circumstances, and the skill or judgment of the cultivator may have very little to do with it. An abundant harvest from a fertile field in a favorable season, proves little more than that the cultivator did nothing to impede the operations of nature. The largest possible production must require the best soil; agricultural skill is independent of the soil on which it is exercised, and displays itself in overcoming the difficulties of the ground, and rendering it, in spite of them, subservient to its interests and purposes. Premiums should be awarded upon evidence of merit in the conduct of the crop. It is very easy to be perceived that as much pains may have been taken, and as much ability displayed in a field, which from some unforeseen cause, from the soil, from the seed, the ploughing, the manure and the season not being all adapted to each other, or from any peculiar unfitness in any two or more of them, which has limited the produce to a medium yield, as in another which has afforded one of the largest crops. Take for instance corn or maize, of which there are reckoned about one hundred and thirty kinds or varieties. Each of these has probably its choice of soil, and may also prefer a certain depth of soil, a sort and quality of manure, a season of planting, hoeing, &c., peculiar to itself, and which may be requisite in order to its highest state of perfection. It is well known that different aspects of the same mountains, and the different soils of adjoining fields have for centuries produced wines of very great diversity of quality and value. The established character of the wine is maintained by the greatest nicety in the cultivation of the vine, and a settled course of culture is carefully adhered to. It is perhaps strange that science should have aided luxury so long and so much, and should have so long neglected those subjects on which the ease and comfort of the community depend. We have every reason to suppose that there is an adaptation between

the variety of the soil, and some kinds of corn, which if discovered would promote the value of the produce, and which in the perfection of agricultural science would be readily discoverable. It is very common to hear men expressing a preference for one kind of corn over another, but it is not often that anything is said which would show that it is thought that the different nature of the soil on different farms has any connexion with the success or failure of certain varieties of corn.

Indeed, rules of adaptation would be the necessary result of a knowledge of the chemical qualities of the soil cultivated, of the manures applied, and of the properties requisite to the best development of the seed.

Much has been of late spoken and written upon the wages of labor. It seems to have been assumed on all hands, that labor is much better paid in this country than in Europe, and that the elevated condition of the American laborer is owing to this fact. If these opinions are true, and of this there is some doubt, they are neither true to the extent that they are generally entertained. To say that so much is paid per day for labor is an arbitrary measure of the value of labor. The true measure is to see how much work is performed for a given sum. The American laborer has ordinarily greater bodily strength and much more physical endurance, united with an energy or spirit almost wholly wanting to the European. Besides these he is more ingenious in the application of his strength, and commonly has put into his hands an instrument far more convenient and effective than is used for the same purpose in Europe. The laborers upon the Prussian railroads may be seen toiling with slow and spiritless motion, turning up the earth with small spoon-shaped shovels fastened upon handles, made of four or five feet in length, from poles or the limbs of trees, with no means of steadying them except the grasp of the hands. To balance such an instrument, so as to use

it at all, it will be seen requires a great expenditure of strength over that which is necessary to a shovel balanced and handled as those are which are used by us. Then it will raise scarcely more than half as much at a time, and is raised hardly more than half as often. Let any man calculate the difference in the work accomplished, and he will find that there is not the difference in the actual price of labor that there is in the daily pay. A day's labor in the one case is a very different matter from what it is in the other, and we shall make a great mistake, if we suppose that in both countries they have reference by the same expression to the same quantity of work done.

The same principle applied to all the operations of the culture of land, illustrate to the proprietor how much he depends upon a judicious mode, to obtain large wages or returns for his labor.

As to the cultivation of crops, it has been for some years said of grains, that it has cost more to raise them here than they could be obtained for from the west and south; and yet the means of communication are constantly improving, and bringing us more immediately into competition with those states. But this scarcely diminishes the value, and does not at all dispense with the necessity for these crops upon the farms of New England, either in a public or private point of view. Whatever the farmer raises by his own labor, he is not compelled to find the money for its purchase. And the cultivation of corn and grain is a part of the process by which he is enabled to furnish fresh butter, beef, and pork for the market, the sale of which, is, in a great measure, his resource for the supply of those things which his farm will not produce. Besides, it prevents the money being sent away for their purchase in other places, by which a tendency to its scarcity, and the consequent depreciation of all prices, is avoided.

The committee deem it worthy of some future

consideration, whether some improvement cannot be made in the principle of awarding premiums. At any rate they think it may be some evidence of an advanced state of agricultural knowledge, when the greatest amount of produce shall not be deemed conculsive proof of the best cultivation.

The statement of Mr. Williams was not received until after the committee had awarded upon the claims previously submitted.

For the committee,

N. W. HAZEN.

September 30, 1840.

SAMUEL STUART'S STATEMENT.

To the Committee on the Cultivation of Crops.

GENTLEMEN—I offer for premium, a crop of winter rye, raised on the Town farm, in Haverhill. The land is a part of the great plain, (so called) and lies immediately on the northern side of the Merrimac river. The soil is a sandy loam, usually called *intervale.*

In the fall of 1838, the rye stubble, and weeds were ploughed in. The first week in July, 1839, it was again ploughed, and rather more than two acres sowed with buckwheat. Weeds of various kinds sprang up on the remainder of it, and during the first and second weeks in September, the whole green crop, which was quite large, was turned under, and the land sowed with six bushels of rye. For several years no other manure has been applied to this part of the farm, than stubble, weeds, &c., ploughed in. At the usual time the crop was harvested, and yielded one hundred and seventy seven and one eighth bushels.

You will perceive by the accompanying certificate,

that this piece of land is about eighty rods in length, next the river, and, for rather more than two rods in width, the soil is quite light, and also shaded with trees and bushes, so that probably on an acre or more it did not yield over ten bushels per acre. It is supposed that two acres yielded but little if any short of forty bushels per acre. But our arrangements were such that we could not separate it.

Yours respectfully,

SAMUEL STUART,

Superintendent.

Haverhill, September 29, 1840.

DANIEL PUTNAM'S STATEMENT.

To the Committee on Grain Crops.

GENTLEMEN—I offer for premium a crop of Indian corn, obtained from one hundred and eighty seven poles of land, and measuring ninety three bushels; making eighty bushels to an acre. It was an eight rowed corn, large kernel; and the most of it of a redish color.

The soil on which it grew, was a dark loam, with a gravelly subsoil. About one third of the land was planted with corn last year, the remainder was grass land; about half of this was ploughed in the autumn of 1839; at the time of ploughing, manure from the barn cellar, at the rate of about four cords to the acre, was ploughed in, the rest was ploughed in the spring and manured the same. The new ground was rolled, and compost manure, at the rate of about four cords per acre, spread on the whole and harrowed in. No manure was put in the hill, it was all spread. The corn was planted about three feet and four inches apart. In cultivating it a small horse harrow was used; the ground was kept as level as possible;

at the last time of hoeing, hay-seed was sown, it came up well, and promises well for a good crop.

Yours respectfully,

DANIEL PUTNAM.

Danvers, December 30, 1840.

WILLIAM WILLIAMS'S STATEMENT.

To the Committee on the Cultivation of Crops.

GENTLEMEN—The field of corn which I cultivated the present season, contained one acre, fifty four rods, as measured by Mr. Northend. The produce of the lot was one hundred and eight bushels of good sound corn, not including the pig corn. It was measured by Frederick Rogers. This field had been laid down to grass, for eight or nine years, and no manure applied during that time. I ploughed it in the early part of May, 1839, cutting the furrows from six to seven inches deep, and planted it with corn, applying about eight cords of barn yard manure, and raised thereon eighty five bushels of sound corn. I again ploughed it the present season, with one yoke of oxen, once, and harrowed it smooth, and then furrowed it about three and a half feet each way, and applied twenty cart loads, or about ten cords, of barn yard manure in the hills. The kind of corn planted was what we call the eight rowed yellow corn, large kernel and small cob; yielding four or five quarts more than a bushel, from two bushels of ears. It was hoed three times, very little hill made to it, having learned by experience that there is no benefit derived from making hills about the corn. When ripe, I cut it up close to the ground; the fodder pays well for cutting it up. Considering the quality of the soil, and the manner in which it has been neglected in years past, it is

the opinion of those who saw my corn, that my crop was a good one. But whether it will compare with the crops on more favored soils, under the management of skilful cultivators, I must leave for others to determine.

WILLIAM WILLIAMS.

Rowley, December 30, 1840.

FRANCIS DODGE'S STATEMENT.

To the Committee on the Cultivation of Crops.

GENTLEMEN—The following statement for claim of premium for greatest quantity of corn raised on the acre, accompanied with necessary certificates, is respectfully submitted.

That the same was raised on the farm under my direction, situated in Danvers, (by the Newburyport turnpike,) on the southern declivity of a hill near the same turnpike. The soil is loam, resting on a clayey gravel, and was tilled as follows: (the previous year the same was broken up and planted with corn, yet as the farm was not under my occupancy, know nothing of the mode of culture,)—In the month of April the ground was ploughed clean, not splitting the hills. On the last of April it was cross ploughed and about four cords of cellar manure ploughed in. Was furrowed at a distance of three feet six inches one way, and three feet eight inches the other; after which about four cords of old manure was placed in the hills, the acre. Five to seven kernels were dropped originally ; thinned to five the first hoeing. At first hoeing, ploughed two furrows in the row, only one way. Second hoeing, ploughed same way, with only one shallow furrow in the centre, and the last hoeing no ploughing was had.

The crop produced was under my direction and

management, and produced seventy nine and five eighths bushels the acre, double that quantity the two acres by admeasurement; or, by weight at fifty six pounds the bushel, one hundred and sixty six and four fifths bushels the two acres. The same absolutely weighing fifty eight and two thirds pounds the bushel; all which is corroborated by statement of James Flanders, who was employed by me during its growth, and also assisted in gathering it.

The two acres were admeasured and staked off by J. P. Saunders, of Salem, whose certificate is herewith submitted.

Yours respectfully,
FRANCIS DODGE.

Danvers, November 7, 1840.

ON EXPERIMENTS ON MANURES.

To the Trustees of the Essex Agricultural Society.

GENTLEMEN—The committee to whom was referred the communication of Doctor Andrew Nichols, on the subject of compost manures, have at several times visited his farm in Middleton, where he has made experiments. The soil is naturally light, and for many years has been severely cropped without receiving much manure. The number of live stock kept upon the farm is small, and but little manure has been purchased. The distance from any place where animal manure can be purchased at a reasonable rate, seems almost to preclude this means of obtaining it. Under such difficulties Dr. Nichols has been very successful in the manufacture and application of a compost, the ingredients of which

are meadow mud, ashes, and a small proportion of animal manure. His success has been extraordinary as will be evident to any one who knows the exhausted condition of the soil, and who has witnessed the heavy crops it is made to yield.

In the application of liquid manure, made from meadow mud and potash, Dr. Nichols has been less successful this year than in his last year's experiment. A farther trial may establish or overthrow his theory on this subject. We hope he will continue his experiment, for it is of as much consequence that farmers should know what applications are useless or hurtful, as what will produce abundant harvests.

The committee recommend that the communication of Dr. Nichols be published; they also desire him to furnish for publication, the analysis of the mud, and an essay on the subject of peat mud, muck, sand, &c., as promised in said communication, and they recommend that the society pay Dr. Nichols for his successful experiments, and valuable communications, a gratuity of ten dollars.

For the committee,

DANIEL P. KING.

Danvers, December, 1840.

ANDREW NICHOLS'S STATEMENT.

To the Committee to whom was referred the communication of Andrew Nichols, on the subject of Compost Manures, &c.

GENTLEMEN—Having invited the attention of the Trustees of the Essex Agricultural Society to our continued use of and experiments on fresh meadow, or peat mud, as a manure, it is, of course, expected

that the result of these experiments should be laid before them. The compost with which we planted most of our corn and potatoes the present year, was composed of the same materials, and managed in the same manner as that which we used last year for the same purpose. (See Essex Agricultural Transactions for 1839, page 35.)

Four acres of corn, on the same kind of soil, was manured in the hill with this compost, and one acre of corn on a more meagre portion of the same field, was manured in the same manner, with a compost consisting of the same kind of mud, half a cord of manure taken from the pigsty, and forty pounds of potash, second quality, dissolved in water, sprinkled over and worked into the heap, with the fork, in the same manner that the dry ashes were into the other compost. Of both kinds the same quantity, a common iron or steel shovel full to the hill, was used, and no difference in the crop which could be ascribed to the different manures, could be perceived. The hills were four by three feet apart on an average. In the borders and adjoining this piece of corn, one acre was planted with potatoes. The compost used on some portions of this consisted of rather a larger portion of coarse barn manure composed of meadow hay, corn fodder waste, &c., wet with the urine and mixed with the droppings of cattle, and less meadow mud. The whole six acres was hoed twice only after the use of the cultivator. The whole amount of labor after the ground was furrowed and the compost prepared in heaps on the field, is stated by the tiller of the ground, H. L. Gould, to have been forty nine days' work, of one man, previous to the cutting of the stalks. Pumpkins, squashes, and some beans were planted among the corn. The produce was four hundred and sixty bushel baskets of sound ears of corn, eighty bushels of potatoes, three cords of pumpkins, one and a half bushels of white beans. On one acre of the better part of the soil, harvested separately, there were

one hundred and twenty baskets of corn ears, and a full proportion of the pumpkins. On one eighth of an acre of Thorburn's tree corn treated in the same manner as the rest, the produce was nineteen baskets. A basket of this corn shells out seventeen quarts, one quart more than a basket of the ordinary kinds of corn. The meal for bread and puddings is of a superior quality. Could we depend upon its ripening, for, Thorburn's assertions to the contrary notwithstanding, it is a late variety of corn, (though it ripened perfectly with us last season, a rather unusually warm and long one,) farmers would do well to cultivate it more extensively than any other kind.

The use of dry ashes on our black soil grass lands, showed an increased benefit from last year. But our experiments with liquid manure disappointed us. Either from its not being of the requisite strength, or from the dryness of the season, or from our mistaking the effects of it last year, or from all these causes combined, the results confidently anticipated, were not realized; and from our experiments this year we have nothing to say in favor of its use, although we think it worthy of further experiments. On the first view of the subject, a dry season or a dry time might seem more favorable to the manifestations of benefit from *watering* plants with liquid manure, than wet seasons or times. But when we consider that when the surface of the earth is dry, the small quantity of liquid used would be arrested by the absorbing earth ere it reached the roots, and perhaps its fertilizing qualities changed, evaporated, or otherwise destroyed, by the greater heat to which at such times it must be exposed—it is not, I think, improbable that the different effects noticed in our experiments with this substance, the two past years, might be owing to this cause. It is my intention, should sufficient leisure permit, to analyse the soil cultivated and the mud used, and prepare a short essay on the subject of peat mud, muck, sand, &c.,

as manure, for publication in the next volume of the trancactions of the society.

Yours respectfully,

ANDREW NICHOLS.

Danvers, December 26, 1840.

SCIENCE OF AGRICULTURE.

BY DR. A. NICHOLS.

AGRICULTURE will at some future time, we doubt not, be reduced to an exact science. When the quantity and proportion of each of the elementary substances existing in any soil being known, the food best suited to nourish the several vegetables cultivated ascertained, a given quantity of heat and moisture, it may be presumed, will always produce results which may be calculated and predicted with as much certainty as astronomical phenomena now are. But how shall a work so desirable be accomplished? In the same manner, surely, that all other sciences have been perfected, by scientific men, by the head work of philosophers in their closets and chemists in their laboratories, and not by practical farmers in the field. These to be sure have an important part to act in this business. It is for them to observe and collect facts for the scientific chemist and naturalist to generalize and work into a system, and it is for them also to try the system so formed, and establish or overthrow it by actual experiments. How was the art of navigation reduced to an exact science. Not by the practical mariner, but by the

mathematician and astronomer. Had the sailor of olden time, who was well acquainted with every rope in his ship, and understood the management of his craft to perfection, but who dared not go out of sight of land lest he should fail to find his way back, been told that men who never walked a deck would one day be able to direct him how to lay his courses so as to reach with certainty any known point on the globe—so as to enable him to explore every broad ocean and unknown sea, and return home again without the least danger of losing his way; with what feelings suppose ye, he would have looked on his informant and how would he have treated such information? Much my dear farmer as you now perhaps feel toward me, and as you are perhaps disposed to treat the subject now under consideration. But before you suffer feelings of contempt to gain utterance, before you ridicule my views and assertions, I pray you to hear me and consider. The laws of nature are unchangeable, and when discovered, guide the operator unerringly to the accomplishment of his object, in all cases where natural forces are made to perform the work. Look at the steam engine. The practical mechanic, however expert in his trade, could never have built it until the man of science had taught him to measure with the utmost exactness the elasticity or expansive power of steam at any given temperature. Without system, which scientific men can alone contrive, the knowledge which individuals obtain by personal experience is nearly all lost to the community.

An old mariner whom I once knew, and who without ever acquiring the science of navigation, rejoiced in the title of captain, and guided his vessel as safely as other more scientific commanders, for a long series of years to and from Salem and Baltimore, used to say his old schooner knew the way to Baltimore. But could this man have put on board his craft another seaman as skilful in managing a vessel as himself, and who, like him, had spent his life in the coasting

trade, between Salem and eastern ports, and have instructed him how to steer that old schooner to Baltimore with safety to himself and his freighters? No. But a school-boy, who had never been aboard a ship, but who had studied well the science of navigation, could instruct that old seaman how he might find his way not only to Baltimore, but to the remotest island in the China seas, or any other spot in the known world.

So it is in agriculture. There are many old farmers, who, from long experience have acquired a valuable store of knowledge concerning the management of their own farms, which must die with them, for they cannot communicate this knowledge to others, so as to qualify those others to manage equally well other soils which may be differently constituted from their own. But whenever agriculture shall become a science, then the school-boy, who has understandingly studied it, will be able to teach the practical cultivator how he must manage his lands to insure the largest crops. Until agriculture be made a science, all experiments, those for which premiums are offered and paid by our agricultural societies among the rest, must be of uncertain value. Others attempting to imitate those processes of tillage which have proved most valuable in other hands, fail to realize the same results, they know not why. The language used in stating these experiments is not definite. Take for example, one statement of the management, &c. of a crop of barley, in the Essex Agricultural Society's Transactions, selected at random, it being the first on which I cast my eye, on taking up the book to find something to illustrate the position stated above.

"*The land on which it grew is a clayey loam.*"

What are its constituents? does it contain the salts of lime, potash, soda, magnesia?

The year previous "*the land was planted with corn and potatoes, a shovel full of manure was put in the hill.*"

Of what elements did this manure consist?

"*Last spring I spread two loads of compost manure on the lot.*"

What were the constituents of this compost? I need not go through the statement. This must be sufficient to show that no other man can extract from it any information of the best method of cultivating barley on his own farm, whose *clayey loam*, his *manure* and *compost manure* may be altogether different articles from those mentioned by the same names in the statement from which I quote. Other statements in the same annual publication, my own not excepted, are liable to the same objections. And the principal reason why farmers derive so little benefit from books, and consequently often decry "book farming," is that farming books are deficient in some of the most essential particulars—full of imperfect certificates and rules, owing to the fact that no analysis has been made of the soils and manures in question. "Hence," says Dr. Jackson, "we account for the uncertainty of the results obtained by those who make trial of new methods of farming. If, however, all the conditions of the problem were understood by both parties, farmers would readily join hands with their scientific co-laborers, and the art of agriculture would soon become as certain as any other art, while, by the application of scientific principles, the business would become of a more exalted character, and assume its true rank in the consideration of all men."

Towards reducing agriculture to a science, however, but little progress has, as yet, been made. And even that little often stated in terms not generally understood, and recorded in books to which but few have access, has hitherto been of little or no benefit to practical farmers. Any attempt therefore, however imperfect, to state some of the elementary principles of the science of agriculture in plain language, so that any one may, by giving to it that study and attention which is requisite to attain any other branch of human knowledge, understand and

apply it, will, we trust, be favorably received by the readers of these Transactions. Without study, no man has attained so much knowledge of arithmetic, as the every-day business of life requires. By as much study as is required to gain so much knowledge of arithmetic, a like competent knowledge of what is known of the science of agriculture may be attained. The elements of the science of agriculture are to be sought in treatises on Geology, Mineralogy, Chemistry, Vegetable Physiology, and Galvanic Electricity.

Many, for whose information I write, are presumed to know nothing of these sciences. Hence it becomes necessary to dwell a little on elementary principles, and endeavor to explain everything as we proceed.

Matter.

Matter exists in three forms, viz: as solids, fluids, and gases, or airs. The particles of matter are supposed to be minute solid balls, that attract each other, although surrounded by what chemists call *caloric*, or the cause of heat, which keeps them at a greater or less distance from each other, without adding to or diminishing their weight. In solids these particles are surrounded by so little caloric that power of attraction is so great as to prevent their being easily moved over each other; hence their fixed solid form. Add to this quantity of caloric by heating these solids until the particles are thereby farther separated from each other, and their attraction for each other lessened in the same proportion, until they assume the form of fluids, and roll freely over one another. Increase the caloric still more and they become gases, or airs perfectly transparent and of course invisible, as the particles of matter are too small to be seen by any aids to vision which we possess, and they are now so far separated from each other that light freely passes between them. But these particles remain unchanged, and by reducing the caloric, return to the same form and assume the same qualities as be-

fore. The melting of metals and the conversion of liquids into steam are familiar illustrations of this theory. In the temperature of our atmosphere, different bodies exist naturally in the three forms. But the solid particles which surrounded by caloric compose, for example, the atmospheric air, may be individually as heavy as the particles of lead, and capable of uniting with the particles of lead, and by this union produce a substance very unlike either air or metalic lead—the well-known pigment red lead.

By such changes and combinations of the particles of matter, although only forty nine different kinds of matter are known, all the endless varieties of substances which exist around us are formed, and the particles of gases or fluids as readily unite with solids as the particles of solids with each other. Hence, in speaking of the constituents of soils, manures, and vegetables, we shall have frequently to describe such combinations. Component parts of fluids and gases become solids, and component parts of solids again become fluids and gases, both in the formation and decay, or decomposition of vegetables. These preliminary explanations, if carefully studied, will, it is hoped, be sufficient to enable those who have read nothing on Chemistry, to understand what we are about to say on the subject of soils, manures, and vegetables.

Soils.

All geologists and chemists agree in considering soils the result of the pulverized and decomposed portions of rocks, with the addition of salts and vegetable and animal substances. Nearly all the rocks which exist in large quantities, are composed chiefly of silica or flint, alumina, pure clay, lime and iron. Magnesia exists in small quantities in many rocks and in the serpentine and soapstone in large portions. Manganese, another metal, in small quantities in the rocks, and consequently in the soils of New England. Potash and soda exist also in most of our rocks.

Most of the rocks in New England contain, on an average, 66 per cent. of silica; 16 per cent. of alumina; 6 or 7 per cent. of potash, and 5 per cent. of iron; lime and magnesia in much less quantity. And the composition of our soils will be found to correspond very nearly with these numbers; excepting potash and lime in their free state, which are soon so far exhausted by vegetation as not to be detected by the ordinary methods of analysing soils. By potash in a free state, I mean to distinguish it from its state or condition when combined with silica, alumina, &c. in rocks, pebbles, and grains of sand, consisting of broken pulverized but not decomposed compound minerals. The terms decompose, and decomposition must be understood to mean to divorce, or to separate, or the separation of the elements of a compound substance. Felspar, a large component part of granite, greenstone, and other of our most common rocks is, for example, composed of silica 63, alumina 17, potash 13, lime 3, oxyd of iron 1 in 100 parts; broken or pulverized, each particle is composed of these elements in their natural state chemically combined. Decompose felspar and we have the silica, alumina, potash, &c. still mixed perhaps, but divorced or separated so far as these terms express, the breaking of the bonds of adhesion which exist in their combined state.

In their combined, confederated, compact state, they aid each other in resisting the action of the hungry roots of vegetables upon them; decomposed, they readily become the prey of their vegetable devourers. Hence the potash, for example, of the decomposed felspar does not long remain in the soil, but will be found in the plants and trees growing thereon.

Among the elements which compose our cultivated vegetables, are found silica, lime, magnesia, oxyd of iron, potash, soda, sulphuric, and phosphoric acids. Hence these will be found constituents of all soils capable of producing them.

Sulphuric and Phosphoric Acids.—Sulphuric acid is a combination of three parts of oxygen gas, two parts of sulphur by weight. Phosphoric acid is composed of about one and a half parts of phosphorus and one of oxygen, by weight. Sulphur is a well known substance. Phosphorus is contained in urine and other animal matter, is easily set on fire by friction, and is now in common use on friction matches.

Oxygen gas is one of the most important agents in the operations of nature. Mixed with azote, twenty one parts of oxygen, and seventy nine of azote, it forms atmospheric air.

Azote, or Nitrogen,—This gas, which is only mixed, not combined with oxygen in the atmosphere, combines also with oxygen in different proportions, forming nitrous acid, or aquafortis, nitric acid, &c. Substances, which, although composed of the same constituents as atmospheric air, are extremely acrid, corrosive, and destructive to both vegetable and animal matter, living or dead. Combined with chlorine, another gas, which I shall not now describe, it forms the most extraordinary and powerful explosive substance known. A single grain of it, (Troy weight,) is as much as any chemist dares to experiment upon. It explodes with prodigious violence when heated to 212°, the heat of boiling water, or, when touched by any oily or greasy substance. At present, we know of no use to which it is applied in the arts. But there can be but little doubt, it will at some future time become a more powerful agent of man than he has ever yet subdued to his despotic control. By its aid perhaps, mountains of rock may be crumbled to dust for agricultural or other purposes. Azote is a constituent part of animal matter. Its agency in the process of vegetation is not well known.

Oxygen one part, and hydrogen two parts, by measure, burned together produce water. Hydrogen is called inflammable air, is the lightest of all gases; with it balloons are inflated; and combined with carbon is extensively used for lighting cities.

Carbon is the combustible part of charcoal, enters largely into mineral combinations, is a constituent part of all vegetables; and the most rare and valuable of all precious stones, the diamond, is pure carbon. Oxygen combines with all metals, and other inflammable or combustible substances, and forms a great variety of bodies called oxyds, oxyd of iron, oxyd of lead, &c.

The next ingredient or constituent of soils to be considered, is the salts. Salts are formed by the combination of acids with alkalies, earths, and metallic oxyds. The salts most frequent in soils are the salts of lime, and iron, sulphate of lime, (plaster of paris) and phosphate of lime are found in all soils. The importance of all these constituents of soils may be inferred from the analysis of vegetables stated above.

The following table shews the quantity of earths and metallic oxyds, in grains, (Troy weight) obtained by Schræder from thirty two ounces of the seeds of the following kinds of corn:

	Wheat.	Rye.	Barley.	Oats.	Rye Straw.
Silica	13.2	15.6	66.7	144.42	152,
*Carbonate of lime	12.6	13.4	24.8	33.75	46.2
" magnesia	13.4	14.2	25.3	33.9	28.2
Alumina	0.6	1.4	4.2	4.5	3.2
Oxyd of manganese	5.	3.2	6.7	6.95	6.8
Oxyd of iron	2.5	0.9	3.8	4.5	2.4

Here we have a clue to the composition of soils best suited to the production of each of these kinds of grain. Here you see oats must take from the soil more than double the quantity of lime drawn from it by wheat. Of course it will be likely to be benefitted by a larger application of lime as a manure. But it should be known and remembered that every species of plant is endowed by nature with powers precisely adapted to its wants. If oats need more lime than wheat, the roots of oats have greater

* Probably phosphate of lime, and carbonate of lime. Other chemists have found in the ashes of oats, for instance, stalks and seed being burned together in 100 parts, silica 55, phosphate of lime 15, carbonate 5, potash 20, some oxyd of iron, &c.

power to decompose the earths that contain it, than those of wheat have. And as by reference to the annexed table of soils analyzed by Professor Hitchcock, it will be seen that all our soils contain a larger quantity of the sulphate and phosphate of lime, than any one crop of either of these kinds of grain contains, it may follow, that oats from their greater power of searching for, and more easily digesting it, will flourish better in a soil poor in its percentage of lime than wheat will in the same soil. And as the nourishment of plants is probably decomposed, cooked, or prepared, in some measure, by currents of galvanic electricity exterior to the roots themselves, a very important question is suggested for our contemplation in regard to mixed crops. May not the roots of one kind commingling with roots of another of stronger powers appropriate to themselves, in some measure, the food prepared for their neighbors? If so, it will account philosophically for what is considered a fact in some parts of our commonwealth, viz: that wheat does better sown mixed with oats, than it does alone. It will be seen by reference to the foregoing table, oats must have vastly greater power to decompose not only the salts of lime, but silica, alumina and oxyd of iron likewise. Here another thought occurs worthy of attention. Will not agricultural chemistry by and by enable us to understand, by teaching us the analysis of vegetables, precisely how much one crop exhausts a soil of certain constituents more than another, and what must be restored to that soil to enable it to produce another crop of the same vegetable equal to the preceding. And also what other crops would be likely to do well on the same soil without the restoration of such constituents?

A still more important constituent of soils and vegetables, of which we have as yet only incidentally spoken is carbon. Carbon enters largely into a great variety of substances, mineral and vegetable, assumes every mode or form in which matter exists.

Solid in the diamond, in charcoal, and in its combinations with earths and metals; fluid in a great variety of liquids, and aeriform or gaseous in almost as many more. In every thing which can with strict propriety be named food for vegetables, it is the most important part. And vegetables have the power of decomposing most, if not all the compound substances of which it forms a part, and of appropriating the carbon to themselves. The most fertile soils contain the largest portion of carbon in combination with other substances, which combinations are usually either *geine* or the carbonate of earths and metals. Carbon 72.73 parts combined with 27.27 parts of oxygen, forms carbonic acid gas. This acid unites with earths and metals forming salts, called carbonates, carbonate of lime or marble, &c. Geine is a substance found in all soils, and its per centage may be considered as the best measure of their intrinsic value. It is decomposed vegetable matter, and of course contains the most important constituents of vegetables, the largest element being carbon. I would here refer to the Essex Agricultural Society's Transactions for 1838, page 92, and 1839, page 35, for some account of this substance.

Geine, as there stated, exists in our soils in three states or conditions; soluble, insoluble, and combined with earths and metals, forming a class of bodies called geates. Soluble geine acts neither as acid nor alkali, but is converted into a substance having acid properties by the action of alkali, and in this state combines with earths, alkalies, and oxyds of metals, forming neutral salts, which may be called geates. They are all more soluble in water than solid geine, especially when they are first formed. The geates of the alkaline earths, lime, &c., are decomposed by carbonated alkalies. The geates of alumina and of metallic oxyds are soluble in caustic, or carbonated alkalies without decomposition. The geates of the alkaline earths by the action of the carbonic acid of the air become super geates (that is containing an

excess or a larger quantity of the acid or of that which possesses acid properties, than exists in neutral salts where the acids and the lime or other substances with which they are combined exactly balance or neutralize each other.) Super geates are always more soluble than neutral salts. Soluble geine includes the watery solution; the solid extract caused by the action of the air on the solution, and the combinations of this with alkalies, earths and oxyds. Insoluble includes all the other forms of this substance.

Geine forms the basis of the nourishing part of all vegetable manures. The relation of soils to heat and moisture depends chiefly on geine. Of all the problems to be solved by agricultural chemistry, none is of so great practical importance, as the determination of soluble and insoluble geine in soils. It lies at the foundation of all successful cultivation. Among the few facts best established in chemical agriculture are these; that a soil whose earthy part is composed wholly or chiefly of one earth, or any soil with excess of salts, is always barren; and that plants will grow in all soils destitute of geine, up to the period of fructification, failing of geine the fruit fails, the plants die. Earth, salts, and geine constitute then, all that is essential; and soils will be fertile in proportion of the last is mixed with the first. The salts can be varied but very little in their proportion without injury. The earths admit of a wide variety in their nature and proportions. The earths in our New England soils are chiefly the detritus of our primitive rocks, granite, gneiss, mica slate, sienite, and argillite. These earths are in fact all salts, formed by silica, which acts as an acid combined with alkalies, lime, magnesia, alumina, and metallic oxydes as bases.

In the analysis of soils for agricultural purposes it is not necessary to be more particular than to consider all these as one and the same thing, and call it granitic sand or silicates. All our soils, except per-

haps, peat meadows, possess sufficient of these to supply all the inorganic matter, which plants will need, for centuries to come. Salts and geine may vary and must be modified and supplied by cultivation. These views lead to Dr. Samuel L. Dana's simple and accurate mode of analysing soils—a mode that at once determines the value of a soil from its quantity of soluble and insoluble geine and salts of lime, magnesia, &c.

Rules of Analysis.

1. "Sift the soil through a fine sieve. Take the fine part; *bake* it just up to browning paper.

2. "Boil one hundred grains of the baked soil, with fifty grains of pearlashes, saleratus or carbonate of soda, in four ounces of water, for half an hour; let it settle; decant the clear; wash the ground with four ounces boiling water; throw all on a weighed filter, previously dried at the same temperature as was the soil; wash till colorless water returns. Mix all these liquors. It is a brown colored solution of all the soluble geine. All sulphats have been converted into carbonates, and with any phosphats, are on the filter. Dry therefore, that, with its contents, at the same heat as before. Weigh—the loss is *soluble geine.*

3. "If you wish to examine the geine, precipitate the alkaline solution with excess of lime water. The *geate* of lime will rapidly subside, and if lime water enough has been added, the nitrous liquor will be colorless. Collect the geate of lime on a filter; wash with a little acetic or very dilute muriatic acid, and you have geine quite pure. Dry and weigh.

4. "Replace on a fuunel the filter and its earthy contents; wash with two drams muriatic acid, diluted with three times its bulk of cold water. Wash till tasteless. The carbonate and phosphate of lime will be dissolved with a little iron, which has resulted from the decomposition of any salts of iron,

besides a little oxyd of iron. The alumina will be scarcely touched. We may estimate all as *salts* of lime. Evaporate the muriatic solution to dryness, weigh and dissolve in boiling water. The insoluble will be *phosphat of lime.* Weigh—the loss is the *sulphate of lime;* (I make no allowance here for the difference in atomic weights of the acids, as the result is no consequence in this analysis.)

5. "The earthy residuum, if of a greyish white color, contains no insoluble geine—test it by burning a weighed small quantity on a hot shovel—if the odor of burning peat is given off, the presence of insoluble geine is indicated. If so, *calcine* the earthy residuum and its filter—the loss of weight will give the insoluble geine: that part which air and moisture, time and lime, will convert into soluble vegetable food. Any error here will be due to the loss of water in a hydrate, if one be present, but these exist in too small quantities in 'granite sand,' to affect the result. The actual weight of the residuary mass is 'granite sand.'

"The clay, mica, quartz, &c. are easily distinguished. If your soil is calcareous, which may be easily tested by acids; then boil one hundred grains in a pint of water, filter and dry as before, the loss of weight is due to the *sulphate of lime,* even the sulphate of iron may be so considered; for the ultimate result in cultivation is to convert this into sulphate of lime.

"Test the soil with muriatic acid, and having thus removed the lime, proceed as before, to determine the geine and insoluble vegetable matter."

Remarks.

On the first rule it may be remarked, that this method does not give us all the information needed. We want to know, how much geine, &c. is contain ed, not in the finer parts which will pass through a

sieve, only, but the quantity or percentage in the whole soil. How much in a given measure of land. I would substitute for the first rule something like the following. Take a measure of the soil, (and this measure may be from a half pint to a bushel, according to the size of the stones, pebbles, &c. mixed with the soil, throw it into a tub or other vessel of cold water, stir it well and let it settle, skim off all vegetable fibres, &c. that may swim, wash and take out the larger stones; all that can be easily separated in this manner, and put them back into the measure. Stir the water and pour it through a sieve into another vessel, wash the coarse sand and pebbles remaining in the sieve until all the pulverized earth adhering to it is added to that which before passed through the sieve, let it settle, decant the clear water, dry the sediment and proceed as directed in the rule. Put all the contents of the sieve back with the stones into the measure, and fill it up with water. Pour off the water, measure it, and in this manner ascertain what part of the measure is occupied by stone, and make all subsequent calculation accordingly. If the half bushel measure containing the stones will hold exactly eight quarts of water, then if your analysis of the fine parts give six per cent. of geine, put it down in the table three per cent., and so on. It would seem to me, also, well to save the undecomposed vegetable fibres, etc. dry, weigh and let their weight occupy another column in the table, as it must at least one year add to the value of the soil. Managing in this manner, we should no longer be misled by tables, that shew the best alluvial soils, less geine than most other varieties. Nearly the whole of these soils pass through the sieve Hence a cubic foot of this soil in situ may contain more geine than a cubic foot of a rocky soil in situ, which in the table shews a much higher percentage of the same constituent.

Since writing the preceding remarks I have received from Dr. Dana, the analysis of the soil on which I have experimented the two last years, and of the swamp muck used on the same in my compost manure. These I have added to the extracts from Professor Hitchcock's table annexed.

The muck is not so rich in geine as I had supposed, and the quantity of silicates much greater. It is not peat, but a rich black soil, full of water and lying on a bed of pure white, moderately coarse, quicksand—the same granitic sand that is mixed with the geine. The geine is, doubtless, formed chiefly of upland vegetables, and the leaves of trees, &c. growing on the adjacent hills, and washed down therefrom with the sand, into the depot where it now lies. The fertilizing qualities of this muck, proved by my experiments, and the knowledge now obtained of its constituents, suggests several important queries—viz: Does its whole value depend on its geine and salts of lime? Is not the sand on which it lies and with which it is mixed a "muck sand,"* possessing fertilizing qualities? Does it not contain a free alkali which Doctor Dana's mode of analysis would not detect? The last question I am able to answer in the affirmative, having tested and proved it alkaline.†

Three parcels of the soil on which my corn grew, taken from between the rows, manured as described in my statement, in the hills were mixed so as to get, as near as possible, an average lot as to quality, and from this lot the specimen analyzed by Doctor Dana, was taken. The results are stated in the table.

* Note, A.

† The purple juice of cabbage, blossoms of violets, and other vegetables, obtained by macerating them in pure water, is changed to a red color when mixed with a liquid in which any acid predominates, and to a green when it contains any pure alkali. Pour pure hot water on peat muck or other specimens of soil, let it settle, pour off the clear liquor and mix with it some vegetable purple juice, and its acid or alkaline condition will be soon determined by the change of color.

Number.	NAME AND LOCALITY OF THE SOIL.	Soluble Geine.	Insoluble Geine.	Salts of Lime.			Granitic Sand.	100 grains heated to 300° F. absorbed in 24 hours.	Absorbing Power in Proportional Numbers.	Specific Gravity.
				Sulphate.	Carbonate.	Phosphate.				
1	Alluvium—Deerfield,	3.5	1.2	2.0		0.9	92.4	3.3	65	2.44
2	Alluvium—Northampton,	1.2	2.4	0.9		1.1	94.4	1.2	25	2.68
3	Alluvium—Hadley,	2.5	2.3	2.7		1.0	91.5	5.0	100	2.46
4	Tertiary Argillaceous—Northampton,	4.8	4.6	1.6		0.8	88.2	6.1	122	2.37
5	Tertiary Argillaceous—Plymouth,	2.9	4.9	1.8		0.9	89.5	4.9	98	2.34
6	Tertiary, Sandy—Springfield,	3.2	0.0	1.6		0.6	94.6	1.7	34	2.60
7	Sandstone, (Red,)—Deerfield,	0.3	2.6	0.8		0.7	95.6	3.4	68	2.53
8	do do West Springfield,	4.1	3.8	4.3		0.7	88.1	2.7	54	2.46
9	Graywacke Soil—Dorchester,	7.6	2.1	1.8		1.0	87.5	4.5	90	2.37
10	do do Roxbury,	4.4	3.8	2.3		1.4	88.1	3.9	78	2.43
11	do do Brookline,	6.0	5.3	3.1		1.4	84.2	5.8	116	2.34
12	do do Quincy,	2.1	5.0	2.4		1.5	90.0	3.5	70	2.44
13	do do Watertown,	5.6	5.5	1.9		1.1	85.9	4.6	92	2.27
14	do do Cambridge,	2.8	3.5	1.8		0.2	91.7	2.6	52	2.45
15	Argillaceous Slate—Lancaster,	5.0	4.5	4.6		0.9	85.0	5.6	112	2.25
16	Limestone, (Magnesian,)—Marlborough,	4.4	2.0	1.4		0.5	91.7	3.0	60	2.43
17	do do Williamstown,	3.1	2.0	2.8		0.6	91.5	5.5	110	2.39
18	do do Stockbridge,	2.3	5.2	3.9		0.7	87.9	6.0	120	2.45
19	A. Nichols's Tillage Land—Middleton,	4.56	3.50	1.30		.84	89.80			
20	Swamp Muck used in Compost,	8.10	6.50	1.60		.70	83.10			

21	Mica Slate Soil—Lunenburg,	5.0	3.4	0.8	1.1	89.7	4.3	86	2.29
22	do do Bradford,	6.5	6.8	2.0	1.2	83.5	6.5	130	2.26
23	do do West Newbury,	3.0	5.5	3.5	1.0	87.0	4.8	96	2.37
24	do do Methuen,	2.9	2.2	1.5	0.6	92.8	0.9	18	2.53
25	Talcose Slate Soil—Chester, west part,	1.5	2.1	3.1	1.0	92.3	3.1	62	2.54
26	Gneiss Soil—Tewksbury,	4.3	3.9	1.2	0.8	89.8	3.5	70	2.41
27	do Bolton,	4.6	3.4	2.1	0.9	89.0	3.8	76	2.40
28	do Tyngsborough,	4.5	1.8	0.6	0.6	92.5	2.6	52	2.45
29	do Hardwick,	6.3	3.3	2.1	0.6	87.7	4.9	98	2.36
30	do Ware,	5.3	0.7	1.9	0.6	91.5	2.3	46	2.58
31	do Leicester,	3.9	2.9	2.8	1.3	89.1	5.2	104	2.48
32	do Sturbridge,	5.1	3.7	2.3	0.4	88.5	2.7	54	2.50
33	do Oakham,	4.8	2.2	1.4	0.3	91.3	3.0	60	2.45
34	Granite Soil—Concord.	7.1	2.0	1.6	0.5	88.8	2.5	50	2.50
35	do Andover,	5.1	7.5	1.6	0.6	85.2	4.4	88	2.29
36	Sienite Soil—Lynnfield,	5.1	5.2	1.4	0.6	87.7	4.4	88	2.29
37	do Marblehead,	5.1	5.0	2.7	0.6	86.6	5.8	116	2.35
38	do Manchester,	6.5	3.4	0.8	0.6	88.7	4.0	80	2.40
39	do Gloucester,	2.4	2.2	1.5	0.3	93.6	2.8	56	2.25
40	do Lexington,	5.4	3.9	2.6	0.6	87.5	6.5	130	2.24
41	do Danvers,	3.8	6.9	2.7	0.7	85.9	5.0	100	2.34
42	do Newbury,	5.0	5.5	1.0	0.5	88.0	5.3	106	2.36
43	do Dedham,	7.0	4.7	1.0	1.3	86.0	6.2	124	2.24
44	do North Bridgewater,	2.2	5.9	2.5	0.7	88.7	3.7	74	2.36
45	do Sharon,	6.9	3.2	1.7	0.5	87.7	3.2	64	2.32
46	Porphyry Soil—Kent's Island, Newbury,	5.7	4.6	3.3	0.4	86.0	6.3	126	2,26
47	do Medford,	8.7	4.2	2.6	0.8	83.7	6 6	132	2.17
48	do Malden,	5.2	4.1	3.5	1 6	85.6	6.8	136	2.26
49	do Lynn,	4.3	3.5	1.8	0.6	89.8	5.9	118	2.29
50	Greenstone Soil—Ipswich,	2.8	9.4	0.7	0.2	86.9	3.6	72	2.22
51	do Woburn,	7.7	4.6	1.3	1.2	85.2	6.0	120	2.27

We have then three great natural divisions of the ingredients of soil: 1, geine, 2, salts, 3, granitic sand, or silicates. Let us glance at these three divisions:

1. *Geine.*—Geine enters vegetables either as geine or as an alkaline, earthy or metallic geate dissolved in water or alkali. The acids and salts of the plant decompose these varied forms. The elements of geine, its oxygen, hydrogen, and carbon, play their usual parts in vegetable economy. The earthy and alkaline bases of the geates form the bases of the various salts which plants afford.

2. *Salts.*—This class includes, first, compounds of geine, second, alkaline, salts, potash, soda, ammonia, and all their combinations known by the names of carbonates, sulphates, phosphates, nitrates, muriates, &c.

3. *Silicates*, or granitic sand.

TABLE of the constituents of the elements of granitic sand.

100 parts of	Potash and Soda.	Silica.	Alumini.	Lime.	Magnesia.	Oxyd of iron.	Oxyd of Manganese.
Argillite,	5 to 7	48	23	4	1.06		
Quartz, .		93	6	1			
Mica, Isinglass	8 to 9	47	34			1 to 2	1 to 2
Felspar, .	13 to 14	66	19	4		1	0.5
Hornblend, .		42	12	11		1	0.25

Argillite, a soft rock of the consistence of common slate, contains carbon. Sulphuret of iron abounds. Its decomposition produces with the silicates, sulphates of alkalies, earths, and oxyds. These with the muriates and phosphates, give the inorganic elements of plants. Burning reduces these to two classes, ashes and soluble salts. The last are found in soot. The ashes are formed of salts and silicates as the following analysis shews:

Analysis of Wood Ashes.

Ashes are divided by the simple process of leech-

ing, into two parts, soluble and insoluble in water. The average quantity of ashes from 100 parts of dry oak, beech, birch, &c. is, 2.87.

100 parts of the soluble contain		100 parts of the insoluble contain	
		Carbonic acid,	35.80
Carbonic acid,	22.70	Phosphoric acid,	3.40
Sulphuric acid,	6.43	Silica, . .	4.25
Muriatic acid,	1.82	Oxyd of iron, .	.52
Silica, . .	.95	Oxyd of manganese,	2.15
Potash and soda,	67.96	Magnesia, .	3.55
		Lime, . .	35.80
	99.86		
			85.47

The composition of the insoluble part of ashes gives us nearly the constituents of leeched ashes. The soap boiler's process, however, always leaves a portion of potash combined with silica, and he adds more or less lime to render the lye caustic. These add to the value of leeched ashes something more than is indicated in the table. Exposure to air, and the galvanic operations of the roots of plants decompose this silicate of potash, (crude glass,) and render the potash soluble in water. This is one great source of the active power of leeched ashes. The course of this wonderful power, not only in fresh and in leeched ashes, but in some degree, in all salts, is to be found in the action of the bases of these salts on geine and on silicates or granitic sand.

Peat ashes abounds in carbonate, sulphate, and especially in phosphate of lime. I have always traced free alkali in peat ashes. But alkali exists in it rather as a silicate, as in leeched ashes. Anthracite coal ashes contain carbonate of lime, alumina, oxyd of iron, and, as more or less wood or charcoal is used in kindling it, some potash also—it is good so far as these abound.

"There is one great, simple principle running through all the classes of soils. It is this, *that in all*

salts and silicates the action of the base is ever the same in vegetation. The *base* of the silicates and salts acts always in one uniform mode. Peculiarities of action depend on the *acid* constituent of the salt. Lime, for instance, acts ever the same, whether it is used as carbonate, sulphate, or phosphate, marl, plaster, or bone-dust. The salt is decomposed by the living plant. The various acids combine with the alkalies, as they are eliminated, from the decomposition of the silicates, and the lime, liberated, acts ever as lime. It acts in its *caustic* state, as a converter of insoluble into soluble geine. If this does not exist in the soil, all the lime in the world would not cause plants to grow. The base of the lime-salts acts primarily on geine, either solving the soluble or converting the insoluble. The same is true of alumina, iron and the bases of all salts. The same general rule applies to all alkaline, earthy or metallic salts and to silicates.

"The order in which the farmer may apply salts is the following: Carbonate, phosphate, and sulphate of lime, carbonates, nitrates, muriates, and sulphates of alkalies. No salts, excepting carbonates, can be used in large quantities. The reason is at once explained by the principle of unity of action of the bases. The acid of the salts, eliminated, decomposes the geates, rendering the soluble insoluble, the acid combines with any free base, produced from the decomposition of the silicates, and thus prevents that forming soluble geine. Having saturated the bases, any excess acts then as free acid, poisoning the vegetable, as oil of vitriol, or muriatic acid would animals. In carbonates, the acid forms part of the food of plants. The alkaline geates are so very soluble, that when alkalies, as ashes for instance, are freely used, we lose a part, by its draining away, or in wet soils becoming too dilute. But a small dose produces all the beneficial effects of a large dose of lime. We have in ashes, not only the alkali to solve geates, but a very large portion of carbonate and phosphate

of lime. Experiments are wanting to prove the relative value of lime and ashes. I should not deem it extravagant to say, that a bushel of ashes is equal to a cask of lime. The alkalies and their salts act more powerfully than any other substance, in solving and converting geine. Lime in all its forms ranks next. These produce always decided beneficial effects. The alkalies never fail. Ashes show their effects at once, due to the alkaline part, while their carbonate of lime produces more permanent effect. Lime, from peculiar states of the soil, may not show any immediate good result, but ultimately, this result is sure to follow. Permanent barrenness never is produced by the free use of carbonates. It surely follows the free use of all other salts, yet in small doses, they all and ever act beneficially, whenever their bases, combined with carbonic acid, would be beneficial.

"But how do the elements of soil act? As I have stated in the report of Professor Hitchcock, by forming galvanic batteries with the roots of living plants. The most active element in the pile is the root. The soil, like the rocks from which it is derived, is slowly acted on by atmospheric agents. The effect of this action annually is imperceptible.

"A single plant in one season will effect a greater amount of decomposition of a given portion of soil, than that produced by all the atmospheric agents in many years. The galvanic agency of plants is not confined to the soil, in immediate contact with their roots. It extends from these, in every direction, to undetermined distances. Hence there is a transfer, as is usual in galvanic decompositions, of substances quite remote from the plant. The whole plant contributes to this galvanic agency. It never exists in full force, perhaps not at all, till the plant has pushed above ground—acted on by air and light.

"The soil, as we have explained, consists almost wholly of silicates, though it has been proved, that carbonic acid slowly decomposes these, and an argu-

ment, for the mutual action of the elements of silicates, derived from their admitted electrical states, yet the amount of this action is never measurable in one season. Being silicates, they have no tendency to act on each other. We can only excite this action by introducing new elements, salts, which in this sense only, can be said to be excitants or stimulants. The silicates are the flour, the salts the yeast. The galvanic agency is excited by the salts, but above all, over all, and controlling all, this action of soils is the living plant."—*Dr. Samuel L. Dana.*

Manure.

Manures are either substantive, that is, the food of plants in a soluble state, or adjective, possessing the power of rendering soluble the geine of the soil. All animal substances, the droppings and urine of cattle included, are, in part substantive, and in part adjective manures. Undergoing decomposition, they give out ammonia, an alkali in the form of gas, but capable of uniting with water, and which, like potash and soda, is a solvent of geine. It is a compound of one volume of azote, and three volumes of hydrogen. During the process, which converts fresh into well *rotted* manure, ammonia escapes and is lost. If the rotting manure be covered by soil, or what is much better, peat muck, the ammonia unites with the geine, and makes a valuable compost. Economy requires that all barn manures, in their fresh state, should be mixed with such muck to form compost.

Geine, or substantive manure, is the product of putrefaction. The art of causing vegetable matter to putrefy without running into the vinous or acetic fermentation, either in compost heaps, or when ploughed into the soil, is a desideratum in agriculture. Vegetable juices which contain sugar, starch, gum, and glutin, if exposed to air, moisture, and a temperature never below 50° F., nor above 86° F., ferment and are converted into gases, alcohol and yeast.

The first escape and are lost; the second poisons animals, and affords no nourishment to plants, and a small part of the yeast only remains to form geine. Sugar and gum exposed to air, moisture, and a temperature of from 65° to 70° F., are susceptible of acid fermentation. The products are vinegar, carbonic acid gas, and some other acids. Here also is almost a total loss of portions of the plant, which by the putrefactive process, would have been converted into geine. Green plants, especially those which contain much starch, sugar, gum, &c., ploughed in, or placed in compost heaps, are liable to be lost in this manner. This explains what had for years been a puzzle to me. I once ploughed in as much green cornstalks as could well be covered with soil, in the month of September. And in subsequent years the soil was not in the least benefitted by it. It was, doubtless, converted into alcohol, vinegar, and gases; poor food for vegetables. Dried plants give more geine than green—because they have parted with most of their sap, and from the moment when their living functions ceased, new combinations of their elements began, and decay, putrefaction commenced. Dry crops, and probably those killed by frost, will, I am inclined to think, be found most readily and with the least loss to putrefy and form geine. There must be also a great difference in different plants as to their tendency to putrefy or to run into vinous or acid fermentation. Here chemistry can prove the only sure guide to successful experiments. There is one other mode in which plants are decomposed, and that is by what is termed "*destructive putrefaction.*" It is rather a slow combustion; it is seen where green plants are heaped together, and become heated, so that all except their inorganic constituents are literally burnt up and lost. Manure and compost heaps should never be permitted to thus run to destruction—but as soon as they begin to evolve steam, be spread open and cooled with water or otherwise.

Soot.

I have given above the constituents of ashes, but in decomposing wood and other vegetables by fire, other elements escape in the form of smoke, the more ponderous parts of which, are condensed on the sides of the flues that convey the smoke into the open atmosphere. Soot is a valuable article for compost manures. Dr. Dana gives the following analysis of soot from Braconnot.

Geine, .	30.70	Acetate of potash,	4.16
Extractive matter and azote,	20	Muriate of potash,	0.36
		Acetate of ammonia,	0.20
Carbonate of lime and magnesia,	14.66	Acetate of magnesia,	.53
		Silica, . .	.95
Acetate of lime,	5.65	Carbon, . .	3.85
Sulphate of lime	5.	Water, . .	12.50
Phosphate of lime and iron	1.50		100.

Clay.

I shall on this subject abridge the remarks of Hitchcock and Dana. There is abundant evidence that our common clays are of great value when spread on land. When spread on dry sandy and gravelly land they render it a better reservoir of salts, geine, and water. But they exert other than a mechanical influence; in fact, their effect is similar to that of lime.

An analysis of our common blue clay, gives

Water and organic matter,	9	Protoxyde of iron,	11.
		Lime, magnesia, and sulphur,	3
Silica, .	. 48		100
Alumina, .	. 29		

It is, therefore, probable that most of the good effects of clay, as a manure, are owing to the large quantity of iron it contains. Iron in clay exists either in combination with oxygen or sulphur. Iron combines with two proportions of oxygen, and forms two oxids, the protoxide and the peroxide. The

protoxide consists of iron $3\frac{1}{2}$ parts, oxygen 1 part by weight. The peroxide contains a larger portion of oxygen. The protoxide is black, the peroxide is red. By exposure to the oxygen of the atmosphere, especially when heated, the protoxide imbibes the larger dose of oxygen, and becomes a peroxide. Sulphuret of iron is a compound of iron and sulphur. It is of a golden metallic color, and where it exists in massive rocks, often fills the imagination of the discoverer with dreams of wealth, never to be realized. By exposure to the oxygen of the atmosphere, the sulphur undergoes a slow combustion and is changed to sulphuric acid, which unites with the iron and forms sulphate of iron, green vitriol, or copperas. Understanding this, the following remarks of Dr. Dana will be understood.

"If we attempt to account for the action of clay, independent of its amending a sandy soil, we should bear in mind that our common clays contain more or less sulphuret of iron. The conversion of this into the persulphate of iron is the natural consequence of exposure; free sulphuric acid results, which acts on any lime in the soil, forming sulphate of lime—plaster. So, by spreading clay we spread plaster of Paris. The iron in clay also plays its part thus: The protoxide of iron, unchanged, would not be beneficial in agriculture. It does not act on geine. By exposure, the protoxide becomes peroxide; and then begins an action similar to that of lime. If the free sulphuric acid, produced as supposed, finds not lime enough, it will decompose all earthy geates and thus a fresh portion of nutriment be set at liberty. Both the effects of clay, the production of plaster and the formation of the peroxide of iron, are speedily produced by burning the clay, as is often practised. Some facts have lately come under my eye, and have recalled others to mind, which I have followed up experimentally, all tending to show that if iron peroxidates itself in contact with vegetable fibre, the texture of the fibre is weakened and

geine is produced, and that in a few hours. It is during the passage from protoxide to peroxide that this 'saponifying' action takes place. Geine is produced and then combines with peroxide." And here Professor Hitchcock adds in a note, from Dr. Dana, "How wide is the influence of geine! It not only enters by itself into the food of vegetables, but becomes the very solvent which nature has prepared to act on the alkaline earths and oxids, dissolving them as they are liberated from decomposing granitic sand. By fermenting dung, vast volumes of ammonia are liberated. I do not think that it is the action of gases, as such, which we want, or which nature intends as food of plants to be derived from the soil. The air is always full of all which this fermenting manure can supply in a gaseous form. The true action of ammonia and carbonic acid resolve into their action on geine. The ammonia combines as alkali with that and thus it becomes very soluble. And the carbonic acid produces sur-salts of the earthy geates of lime, and magnesia. It is these, liberated the moment the plant demands them, which cause all the geine of the manure to become alkaline soluble geates."

Marsh Mud.

This substance is so abundant and so accessible to a large portion of the farmers of the county of Essex, that it would seem desirable that they should know in what its value consists. It is generally, I believe, esteemed a good ingredient in composts. The marsh mud, however, of different localities, varies much in value. And the opinions of different practical farmers as to its worth differ accordingly.

A scientific analysis of specimens of marsh mud taken from different places, shews how little dependence can be placed on a name of soils, &c. in agriculture.

Hitchcock's Analysis of Marsh mud by Dana's method, from

	Cambridge.	Newburyport.	Medford.
Soluble geine,	13.0	1.5	7.5
Insoluble geine,	7.4	0.1	5.6
Sulphate of lime,	2.3	3.0	2.6
Phosphate of lime,	0.4	0.5	0.3
Granitic sand,	76.9	94.9	84.0
	100.0	100.0	100.0

Besides the above named constituents, it contains more or less salts of soda, common salt, &c. From this analysis we may say, that if a soil be quite poor those varieties should be chosen that contain the most geine, and this can be judged of by their comparative lightness when dry, the lightest abounding most in organic matter. But if the soil already contain a good deal of inactive vegetable matter, the varieties that abound most in salts, will probably be most efficacious.

Cow Dung.

The analysis of the excrement of black cattle fed on hay and turnips, given in Thomson's Chemistry, from Thær and Einhoff, gives, when evaporated to dryness and burnt to an ash, (not reckoning sand,) the following salts and earths in the proportion stated. Lime 12, phosphate of lime 12.5, magnesia 2, iron 5, alumina with some manganese 14, silica 52, murate and sulphate of potash 1.2,═══ 98.7.

These mineral constituents then, together with the vegetable and animal matter, which undergoing putrefaction, forms geine, and gives out carbonic acid and ammonia, shew us in what consists the value of cow dung as a manure.

Road Dust.

It has been suggested by Hitchcock and Dana that felspathic and micaceous rocks, if ground in a plaster

mill, would form a good dressing for land. Now we have in many places an abundance of this article ready ground for use, and well mixed too, with animal manure, in road dust, the removal of which would greatly benefit the public, as it only impedes the motion of wheels, either in the form of mud or loose sand, besides its annoyance to travellers when lifted on the wings of the wind. Here is probably a rich source of real "muck sand" hitherto neglected.

The foregoing brief sketch, very hastily compiled, amidst constant interruptions and professional cares, is designed to arouse the attention of practical farmers to a subject full of interest and promise to themselves, their country, and the world. A flourishing agriculture lies at the very foundation of national prosperity. An enlightened and well educated yeomanry is one of the most important constituents of national greatness and glory. Farmers should feel that a higher trust than the cultivation of their fields is committed to them; and that is the cultivation of their own minds; and that, therefore, independent of the pecuniary advantages which the study of the science of agriculture may confer upon them, its influence in strengthening and improving their intellectual powers would prove of incalculable value. Knowledge is power. And no knowledge confers so much power on the individual man, as that which makes him thoroughly acquainted with the philosophy of the art he practices—of the avocation in the labors of which he spends his life. Such knowledge is not only power, it is happiness, it converts the drudgery of labor into scientific recreation, and where it is the laws, the forces of nature which guide his hand and accomplish his work, it raises his adoration to the Maker of those laws, the cause of those forces, and religion becomes the crowning glory of his existence.

In a communication to a late agricultural meeting at the State House, I proposed for their consideration, as I now do to the consideration of the farmers of Essex county, the following plan of operations for the elevation of the art of agriculture to a comparatively exact science. Let our first effort be to obtain the services of one or more of our best chemists who shall devote all his powers and time to the analyzing of soils, manures, &c., to perfecting the science of agriculture, and preparing for publication a popular treatise on this subject. To defray the expenses let a subscription be opened and papers sent into all parts of the commonwealth, with the understanding that all persons who will subscribe and pay in advance —— dollars, or more annually, till such subscription be withdrawn, shall enjoy the privilege of having his soils, &c. analyzed by said chemist, and to have a statement of the constituents of said soils, &c. returned to him, with the opinion of said chemist, as to what is needed to render such soils most fertile; the value of specimens of peat muck, muck sand, marls, &c., and the treatment they need to make them valuable manures for certain soils, &c. Agricultural societies to be admitted as subscribers, with the privilege of having all the soils and manures used by claimants for premium crops, &c. analyzed.

On the above-mentioned communication a committee, consisting of Dr. C. T. Jackson, Nathaniel P. Denny, and Horace Collamore, made an able report from which we have room only for the following extract:—"Your committee are of opinion that there is no subject of human knowledge more recondite than the science of agriculture. No other branch of art requires a more thorough knowledge of the sister sciences than this.—No branch of art has yet been able to exist without technical terms. 'There is no royal road to learning.' The student of agricultural chemistry must labor like others, before he can acquire a thorough knowledge of the science. In order to comprehend the meaning of chemical terms, the

farmer must pay some attention to the elements of the science, and then, by the aid of such glossaries as should be contained in a treatise on agricultural chemistry, he will be enabled to hold intercourse with the elements, and know them by name."

AGRICULTURAL SEMINARY,

AT ANDOVER.

We have been requested to present the following notice of a course of study contemplated in the Teachers' Seminary, at the South Parish in Andover. It so fully harmonizes with the views expressed in the foregoing essay, and is so well calculated to meet what we consider the present wants of the community, that we cheerfully recommend the institution to those, who are desirous of educating their sons to be intelligent and independent farmers. At a time when the most distinguished men in our country feel it their highest honor, that they are *farmers;* and, when all the *learned professions*, so called, are *overstocked*, it becomes us, farmers, to consider what is the best manner of educating our sons.

"Arrangements have been made to introduce scientific agriculture as a regular branch of study; one of the teachers has been engaged, during the past winter, in investigating agricultural chemistry, with a view to give instruction on the subject, and to prepare a text book for the use of the students. Instruction will be given on the subject the coming term, which commences March 25th, in connection with the lectures and experiments in chemistry. The plan of adding scientific agriculture to the branches already pursued, originated from the belief that scientific agriculture must be made a regular

branch of study in our literary institutions before we can make farmers scientific men, and produce a permanent improvement in our system of rural economy. It is our object to afford facilities to our young men for obtaining a thorough English education, especially to obtain a knowledge of the various branches of natural science, that they may be able to understand and apply the great principles of scientific agriculture which lay at the foundation of all successful practice. We propose to teach them botany and physiology, mineralogy, geology, and chemistry with its application to agriculture, and to afford them the opportunity to witness the operations of tillage under the direction of a teacher. No labor will be *required*, but the opportunity will be given for those who feel disposed, and a fair remuneration paid. The instruction in scientific agriculture will be connected with the processes of analyzing soils. Fully believing that this plan will be of the highest practical advantage to the farming community, and the only one which will ultimately elevate the employment, and raise up a generation of scientific farmers, we confidently present it to the community for their co-operation and patronage."

(NOTE A.—page 121.)

From Professor Hitchcock we learn that sand or any other stratum of earth that first arrests the water in its descent into the earth, if spread on the surface of the ground, operates as a manure. It is that stratum out of which water continually oozes—that stratum into which all wells are sunk—and which, in many places, is found near the surface of the earth. It probably will be found to contain salts and in some instances free alkalies, which have been washed down from the soil, and here arrested. Hard water which is found in most wells, contains such salts, and here a question of some importance is suggested. Is well water for irrigation more fertilizing than rain or brook water? This subject of muck, sand, &c. is one of the highest interest to farmers, since it must afford many a cheap means of renovating their worn out soils. All eyes should be directed to it and experiments tried with it wherever it can be easily obtained.

Dr. *Essex Agricultural Society, in account with Andrew Nichols, Treasurer.* *Cr.*

1840.			1840	By balance in Treasury, January 1,	$497 71
	Paid Premium and gratuities of 1839,	$298 50	Feb. 22.	Derby's Note, principal and interest,	110 81
	Paid do do of 1840,	378 00	March 4.	Interest on Jonathan Shove's Notes,	93 34
	Bills of . . 1839,	333 32		Cash received of J. W. Proctor, for five members.	15 00
		$1,009 82		DIVIDENDS ON BANK STOCKS.	
			April &	Exchange Bank, . . .	45 00
Dec. 31.	Balance in the Treasury, . .	723 42	October.	Salem Bank, . . .	15 75
		1.733 24		Mercantile Bank, . . .	42 00
				Commercial Bank, . . .	44 00
	FUNDS OF THE SOCIETY.			Merchants Bank, . . .	33 00
				Warren Bank, . . .	104 50
	Bank Stock, par value, $5,533 33			Village Bank, . . .	22 50
	Notes with sureties, 758 15			Interest on deposites in Warren Bank,	9 63
	In Savings Bank, . 885 54			Cash of the Mass. Agricultural Society,	100 00
	Balance in Treasury, 723 42			Bounty of the Commonwealth,	606 00
		7,900 44			$1,733 24

ANDREW NICHOLS, *Treasurer.*

December 31, 1840.

The subscribers, having been appointed Auditors for the examination of the Treasurer's account, hereby state that the above is a true and accurate account of the same.

ANDREW DODGE,
R. S. DANIELS.

March 1, 1841.

A LIST OF

PREMIUMS AND GRATUITIES,

AWARDED IN 1840.

Wm. S. Marland,	Andover,	For Ayrshire bull,	1st prem.		$15
Perley Tapley,	Danvers,	" Durham bull,	2nd	"	6
George Spofford,	Georgetown,	" " cow,	1st	"	15
H. C. Merriam,	Tewksbury,	" " cow,	2nd	"	6
"	"	" heifer,	gratuity,		5
"	"	a yearling heifer,	1st prem.		5
"	"	working oxen,	gratuity,		5
Albert Johnson,	Lynn,	native cow,	1st prem.		15
Joseph Kittredge,	Andover,	working oxen,	"	"	12
Perley Tapley,	Danvers,	working oxen,	2nd	"	6
Josiah Crosby,	Andover,	milch cow,	gratuity,		10–100
Joseph Goodridge,	W. Newb'y,	ploughing, D. T.	1st prem.		12
Jede'h H. Barker,	Andover,	" "	2nd	"	10
Perley Tapley,	Danvers,	" "	3rd	"	8
Hobart Clark,	Andover,	" "	4th	"	6
Perley Tapley,	Danvers,	" S. T.	1st	"	10
Joseph C. Putnam,	"	" "	2nd	"	8
Moses Pettingell,	Topsfield,	" "	3rd	"	6
Samuel F. Barker,	Andover,	" "	4th	"	4
Seth Kimball,	Andover,	" H. T.	1st	"	8
Wm. S. Marland,	Andover,	" "	2nd	"	6—78
Joseph Kittredge,	Andover,	working oxen,	1st	"	10
Hobart Clark,	Andover,	" "	2nd	"	7
Nathan Tapley,	Danvers,	" "	3rd	"	5
Jed. H. Barker,	Andover,	steers, 3 years old,	1st	"	7
William Williams,	Rowley,	steers,	"	2nd	"	5
					$212

				Amount brought over	$212
John F. Carlton,	Andover,	steers, 2 years old,	1st	"	6
Daniel Hoyt,	Haverhill,	" "	2nd	"	4
R. H. Chandler,	Andover,	steers, 1 year old,	1st prem.		4
Joseph Kittredge,	"	" "	2nd	"	2—50
Joseph Yeaton,	Newbury,	fat cattle,	1st	"	15
Wm. S. Marland,	Andover,	bull,	1st	"	8
Francis Dodge,	Danvers,	"	2nd	"	6—29
Thos. E. Payson,	Rowley,	boar, sow and pigs,	1st	"	16
William Williams,	"	" "	2nd	"	6
John L. Noyes,	Georgetown,	boar,	2nd	"	2
H. C. Merriam,	Tewksbury,	boar and sows,	gratuity,		5
Nathan Tapley,	Danvers,	pigs,	"		3
Perley Tapley,	"	pigs,	"		3
John Hale,	Boxford,	pigs,	"		3
Joseph Newell,	W. Newb'y.	pigs,	"		3—41
Dean Robison,	"	June butter,	1st prem.		8
Daniel Putnam,	Danvers.	" "	2nd	"	6
Jesse Putnam,	"	" "	3rd	"	4
Daniel Putnam,	"	September butter,	1st	"	10
Mrs. R. Buttrick,	Haverhill,	" "	2nd	"	8
Isaac Carruth,	Andover,	cheese,	1st	"	10
Mrs. W. Thurlow,	W. Newb'y,	"	2nd	"	8—54
Temple Cutler,	Hamilton,	cultivation of silk,	gratuity,		10
Mrs. H. Tappan,	Newbury,	" "	"		7
Mrs. E. Titcomb,	Newburyp't,	" "	"		2
Mrs. M. Burbank,	Bradford,	" "	"		2
Three others,		" "	"		3
Gardner B. Perry,	Bradford,	mulberry trees,	1st prem.		15
Temple Cutler,	Hamilton,	nursery "	1st	"	10
Joseph Foster,	Beverly,	" "	2nd	"	5
W. C. Richardson,		" "	gratuity,		3
Moses P. Atwood,	Bradford,	" "	"		3—60
Samuel Stuart,	Haverhill,	crop of rye,	1st prem.		10
Daniel Putnam,	Danvers,	" corn,	gratuity,		5
Francis Dodge,	"	" "	"		5—20
Moses N. Adams,	Newbury,	hand rake,	"		10
Andrew Nichols.	Danvers,	exp'ts on manures,	"		10
Joseph Foster,	Beverly,	hedge fence,	"		5—25
By the committee on manufactures, See pp. 90—3,					92
By the committee on fruits, See page 61, . . .					25
Amount of premiums and gratuities awarded in 1840,					$574

PREMIUMS OFFERED

BY THE

ESSEX AGRICULTURAL SOCIETY.

1841.

At a meeting of the Board of Trustees, December 30th, 1840, the secretary was directed to prepare a list of premiums to be offered the ensuing year, and to publish the same previous to the Annual Exhibition, which is to be at Georgetown, on *Wednesday*, September 29, 1841. The following instructions were given:—

On *farms*, on the *dairy*, on *crops as manure*, whether green or dry, on *forest trees*, on *mulberry trees* and *silk*, on *irrigation*, on *improvement of meadows*, on *ploughing*, on *agricultural implements*, on *comparative value of crops*, on *fattening cattle and swine*, on *cultivation of crops*, on *animals exhibited*, on *manufactures*, on *fruits and flowers*, *&c. &c.*, similar to those of the last year.

Additional premiums will be offered on several other subjects—instance—

The BEST CONSTRUCTED PLOUGH.

Experiments on manures of different kinds. All

of which will be detailed in the Premium Sheet, that will soon be published.

One hundred dollars, additional premiums, will again be given by the State Society, the present year, to competitors from all parts of the commonwealth.

Attest,

JOHN W. PROCTOR, *Secretary.*

March, 1841.

NAMES OF MEMBERS ADMITTED,

IN 1840.

THOMAS E. PAYSON, Esq.	Rowley.
ALLEN W. DODGE, Esq.	Hamilton.
ADOLPHUS DURANT,	Methuen.
CHARLES F. PUTNAM, Esq.	Salem.
WILLIAM S. MARLAND, Esq.	Andover.
JOSIAH CROSBY, Esq.	Andover.

The next exhibition will be at Georgetown, on WEDNESDAY, September 29th, 1841.

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TRANSACTIONS

OF THE

ESSEX AGRICULTURAL SOCIETY,

FOR

1841.

VOLUME III.—NUMBER II.

PUBLISHED BY ORDER OF THE SOCIETY.

JANUARY, 1842.

SALEM:

PRINTED AT THE SALEM GAZETTE OFFICE.

1842.

ADDRESS.

BY ALONZO GRAY, A.M.

Mr. President and Gentlemen of the Society.

The statute of the Hebrew Commonwealth which required all the people to assemble triennially at Jerusalem, and present themselves before the Lord, was not more a dictate of piety than of sound, practical wisdom. It led them to cherish a friendly regard for each other, and it kept alive a spirit of obedience to their divine lawgiver. It furnished the best opportunities to pay their *tithes*; to present the best of their flocks and fatlings, the first fruits of the field and of the vine, the honey and the oil, with the sacred garments and ornaments for the divine service.

The feast of the harvest, especially, must have presented an imposing spectacle. The immense multitude of people, the numerous flocks and caravans which blocked up the ways and covered the hills around the sacred city. The display of their merchandise, their offerings for the service of the temple, towards which all eyes were directed and at the sight of which all Israel bowed to the earth, in silent adoration of Him who made it the place of his peculiar presence. The pillar of smoke which ascended to heaven from the altar of burnt sacrifice completed the picture; and then it was at Jerusalem, the city of the great King, the place where he unveiled his awful majesty, while all around was calculated to inspire the pious sentiment of the Psalmist, "The earth is the Lord's and the fulness thereof," the

"fruits of the earth are his," "and the cattle upon a thousand hills."

The herdsmen of Dan, we may naturally suppose, would emulate those of Beersheba; the shepherds of the mountains, those of the plains. The clusters of Eschol, would be compared with those of Libanus; the wild honey of the rock, with that from the desert; the oil from the hills and the spices of Jordan.

The Tyrian purple and tapestry, the fine linen and embroidered-work, with all manner of needle-work and carved-work and utensils of husbandry, according to the skill and productions of each portion of the land, would furnish an opportunity for inspection and profitable comparison. All this was not merely for display, it had its appropriate effect. Every Jew would carry home a higher sense of his duty to his country and his God. He would also gain some new knowledge, or at least be stimulated to greater exertions to increase the productions of his fields and of his flocks. It was, doubtless, one of the most important means in that age of securing his attachment to the cultivation of the soil, as well as of perfecting and perpetuating those modes by which each one might reap the highest reward of his labors.

You have come up to this annual festival to-day, bringing with you the choicest fruits of your industry, to commune with each other, to be excited to new zeal and to higher efforts in the profession which you have chosen; to gather new encouragement and consolation; to lighten the toils of the field, and it is hoped, to present to that Great Being who has crowned your labors with success, the tribute of grateful hearts, and the consecration of the substance with which he has blessed you. You wish, I doubt not, to return to your homes with the conviction that you have made some advances in the art which you cultivate. With the hope that I might contribute something, however small, to this end, I have consented to address you.

Under any circumstances I could not hope to do justice to this occasion. Under the present, I fear I shall wholly disappoint you, as my health and professional

engagements, for the last few weeks, have prevented me from making what little preparation might otherwise have been within my power.

But having been bred a farmer and having from long observation and study become deeply impressed with the wants and importance of the profession, I could not forego the opportunity of presenting a few thoughts to so large and influential a body of my fellow citizens, as are present on this occasion.

The topic which I have selected for your consideration, is, *the means by which constant progress and permanent improvement in Agriculture may be secured.* The subject is an extensive one; it includes a wide field; embracing nearly every topic which would be pertinent to present on an occasion like the present.

The history of this society shows that *it* has been and is an important means of progress and perfection in the art; and were you to disband it to-day, you could not destroy the influence which it would exert through all coming time.

The Agricultural and Geological surveys, which tend to develope our resources, Agricultural publications, the experiments of practical farmers and the efforts of scientific men, are all important means of progress in the art*

But I must confine myself to a single view; to a view, however, which I deem *fundamental* to the complete success of all other means of further progress, and perfection in the art.

I am not ignorant of the fact, that our agriculture has advanced rapidly within the last twenty years; perhaps tripling the productions of the soil. I would not lightly value the means by which its progress has been promoted. I would be slow in adopting those which experience has not proved to be successful. But yet, it must be

*It is evident that many influences are calculated to advance the art, which when withheld tend upon the whole to retard rather than to secure its progress. The state may offer premiums in *such a way*, as to produce a temporary advancement, which, when withheld, or when they become such that efforts for successful competition are not adequately rewarded, the progress will be *apparent* but not *permanent*.

evident to all, that Agriculture has not kept pace with most other arts. It has not derived that aid from scientific discovery and mechanical invention which has been secured in almost every other department of human industry. Why is agriculture, the oldest as well as the foundation of all other arts, so slow in its progress? Why must each generation of farmers go through the same experiments, without being able to profit by those of their predecessors, or to make but slow advances upon what their fathers have done before them? In other words, why has not agriculture as an art, advanced as rapidly as other arts? And why have not the efforts to improve and perfect it, been as successful as those which have been directed to the same end, in other departments of human industry? Is not the true answer to these inquiries to be found in the fact that those means which have been deemed indispensable in other arts have not been resorted to, to the same extent, in this? We have employed means which never have produced and never can produce the results at which we aim. They do not strike deep enough to furnish a permanent basis upon which the art may be built up and cemented together in one complete and symmetrical whole.

I remark then, in the first place, that *in order to secure constant progress and permanent improvement in Agriculture, it must be based on scientific principles.* Agriculture must be cultivated not only as an *art*, but as a *science*. I need not stop here to show that with a few honorable exceptions, the art is practised merely as an art. That the great majority of farmers are unable to give an intelligible reason for the modes of culture which they adopt. For the fact is notorious, that they are not only ignorant of the changes which take place in the process of vegetation and of those conditions which are requisite for the highest development of the vital power in the production of their crops, but that many of them do not know the nature of a single ingredient of their soil. In fact, the idea of "Book Farming" has been in many places a subject of ridicule. As if the recorded experiments and generalizations of scien-

tific men and practical farmers, conducted under every variety of soil and climate, were not only useless, but just subjects of contempt; or as if an accurate knowledge of the laws of reproduction in the animal and vegetable kingdoms could be of no possible use to those whose whole success in their profession must be in proportion to their strict conformity to those laws.

It must be confessed, however, that there is much discrepancy among scientific men, on many of the theories which pertain to the subject. Many of the principles do not seem to be well settled, and there is some ground for the prejudice which I have noticed. But this fact does not invalidate the position which we have assumed. So far as Agriculture is not yet capable of being based on scientific truth, so far its progress must be retarded and we must direct our efforts to the establishment of those principles which are yet in doubt.

But there are many principles well settled. The great majority of truths which are applicable to the subject are well established. It is true that they are not well collected and arranged; they are scattered and need classification; but then enough is known to give direction and permanency to the modes of culture in all their *prominent* features, and if generally understood and applied, to increase in a rapid ratio the productions of the soil.

Mineralogy and Geology furnish us with many important principles relating to the origin and composition of soils. Chemistry teaches us how to improve them, as well as explains to us the changes which take place in the processes of vegetation, and hence points out those *conditions* which are requisite for the most perfect growth and maturity of vegetables. It also instructs us in the best modes of preserving the various vegetable and animal productions, and enables us to understand their properties and uses.

Botany makes us acquainted with the structure and habits of various species of plants, and aids us in determining what soils to select and what mode of treatment will be crowned with the most certain success.

Zoology opens her vast storehouse of facts and principles, and developes those laws by which the reproduction of animals is regulated, and their highest perfection attained.

Mechanical Philosophy may also afford essential aid, and further, the great number of experiments which have been tried by scientific men (and practical farmers) to test the truth of the principles thus developed, render it certain that we have a broad basis on which the art may rest.

Let the principles derived from Natural Science be applied to Agriculture as they have been to other arts, and we shall soon see it moving forward with the same rapidity. We shall soon attain to similar perfection, and secure a permanency in the acquisitions that are made, which all other means combined can never effect.

The absolute necessity of basing the whole art of Agriculture on the principles of science, may be shown from the nature of the case, the analogy of other arts, and the history of Agriculture itself.

From the *nature* of the employment, its permanent success must depend upon a knowledge of those rational laws by which it is governed. The conditions of success are too many and too difficult of apprehension, to be discovered anew by each generation of farmers. It requires constant attention to a great variety of circumstances; and that attention must be given not only from year to year and with regard to each kind of crop, but observations must constantly be made to adapt the mode of treatment to the exigencies of the case. No permanent progress can be secured, unless its principles are classified, its experiments recorded, and the accumulated experience of many observers so arranged, as to become attainable by one. Strange as the assertion may appear, it is doubtless true, that few arts can be practised with more doubtful success by those who are unacquainted with the scientific principles upon which they are based, than Agriculture. Scientific farming bears the same relation to that which is not, that history does to tradition; that the recorded events of civilized

life, to the mythologies of the savage state; the clear and steady light which shines from the printed page, to the dim shadows which come to us from popular rumor. Why should not Agriculture *require* the aid of science, to secure its permanent progress, as well as the chemical and mechanical arts? I am aware that the arts precede the sciences, and that some arts have attained a high degree of perfection, long before their principles were reduced to system; but generally, there is a certain degree of perfection only attained; and although the results may be equal in beauty and perfection to those which art enlightened by science produces, still, there is a vast difference in the *economy* and *facility* by which the results are brought about.

The general fact is, that science is the offspring of the arts in the first instance, but the child soon becomes the parent of a numerous progeny. It is often the secret, unseen agent which *directs* the artisan and leads to eminence and perfection in the art. *Mere art* unenlightened by science, might construct edifices of the most perfect symmetry, with sufficient time and labor; or make the living form start out of rock, by a kind of instinct; but it can never construct steamboats, cotton or woollen factories. The beautiful fabrics which come from our manufactories did not receive their various coloring and finish by some fortunate but unscientific blunderer; the modern arts of bleaching and dyeing are not the results of a few experiments carelessly conducted by some successful compounder of logwood and alum. No, the chemical arts have reached their present degree of perfection by oft-repeated and accurate experiments, and a careful comparison of a great variety of phenomena, and the application of principles derived from several of the sciences. In fact, all our large manufactories employ a professed chemist, whose whole energies are employed in investigating and applying the principles of science to the progress and perfection of these arts.

When you witness the almost miraculous effects of steam in its various applications; when you stand for example on some promontory of the sea and observe its

power as exhibited in the propelling of the steamship, you are filled with admiration, not so much because of the majestic and rapid motion which it produces, as because you see in it the proudest monument of the triumphs of science over the most formidable element in nature. Steamboats and locomotives did not spring up in a night without any attention to natural laws or the application of scientific principles.

The whole circle of the mechanic and manufacturing arts, from the building of a seventy-four gun ship to the manufacturing of a pin, have attained their wonderful perfection because they are based upon the principles of science, and their history conclusively proves that their progress has been constant and permanent only so far as these principles have been properly applied. If a mechanic may not construct a log cabin without some scientific knowledge of architecture, shall we expect to attain perfection in agriculture without any attention to the peculiar principles upon which the art should be founded? If the less difficult, the less important arts require the aid of science to secure progress and success, is it possible to attain permanent advancement in the more difficult as well as the most important of all arts without any such guide to point out the way?

What a vast amount of labor has been saved by the introduction of machinery in the mechanical arts. Is it of no importance to the progress of agriculture that its labors may be abridged by similar means? It would seem that as this art is the most laborious of any other, an art which the great majority of men in every age and country must practice, it would seem I say that it should be the first to which the principles of science would be applied, the first to reap the benefits of scientific discoveries and new inventions. The history of Agriculture itself proves that permanent improvement has been secured only so far as the art has been based on the principles of science, and all that is valuable to be retained may be traced either directly to scientific discovery, or found to correspond to the principles which science has disclosed.

The time has come, we believe, when something must be done to place the business of farming on a better foundation, and now is the time when it can be done with effect; society is yet in the forming state; our institutions are receiving their character, and now, before they become rigid by age, is emphatically the time to lay the deep and broad foundation of future and permanent prosperity.

The spirit of the age demands that agriculture should be raised from its fallen condition and placed on a similar basis with other professions. The sterility of our New England soil, and our increasing population, require it especially of *us*. The interests of our widely extended country, now receiving its character, call for it. Morality and religion command it.

The responsibility devolves upon those who are the instructors and guides of the rising generation; those who shape the character and direct the energies of the coming age. It is for us to say whether the intellectual and moral powers which are now developing around us shall be directed to those permanent and useful pursuits which lay at the foundation of civil and religious institutions, that furnish the means of national wealth, and exert a favorable influence upon man in all the conditions of his being here; or whether they shall be turned into the chanels of vice and fiction, to be consumed by the fires which should have quickened them into life and strength.

This leads me to remark in the second place, *that in order to secure constant progress and permanent improvement in Agriculture, its principles must be made a regular branch of study in an extended course of an English education.** It must be introduced into our system of popular instruction. How else can it become a *science*, unless it is made a special subject of study? It must be studied as every other art is. It must be made a prominent and indispensable part of an education. It will then

* See Farmer's Companion; p. 279; or the Address of Mr. Buel before the Agricultural and Horticultural Societies of New Haven County, Sept. 1839

create a motive for scientific men to turn their attention to it, and to produce in this as in all other professions, a union of theory and practice; the theory must be taught in the schools, the practice in the fields. Its principles will then be sought out, its experiments carefully compared and classified; its apparently discordant facts reconciled and wrought into one perfect system of light and truth.

It is only in this way that *perfection** can be attained. Why is it that the mechanic arts have arrived to such a high state of perfection, while agriculture is so manifestly imperfect? It is simply because these arts have been made the subjects of patient and persevering study. The lights of science have shone upon them until we ore astonished and almost confounded at the magnitude af the results, no less than delighted with the beauty, simplicity and cheapness which characterize their productions. Every scientific man has his telescope out, that nothing may pass in heaven or earth but that it may be known; but alas for the farmer, very few but empyrics have consulted his interests. He could do well enough without the aid of science; so the farmer has said, and so he believed,and settled down in his self complacency, repelling all attempts to arouse him from his comfortable, and as he verily believes, consoling position. But scientific men and practical farmers are turning their attention to this subject. New discoveries are being made, new resources are being developed; the importance of the subject begins to be seen, and unless I mistake the signs of the times, a necessity felt by many of the best men that in order to secure perfection in agriculture it must be made a branch of an English education.

If agriculture is made a science however, its principles cannot be understood, disseminated and applied unless it is made a branch of study in our literary insti-

* Perfect Agriculture, says Professor Liebig, of Giessen, is the true foundation of all trade and industry,—it is the foundation of the riches of States. But a rational system of Agriculture cannot be formed without the *application of scientific principles*

tutions. It may be known as a science by the initiated, but there must be a power to *receive* and *apply*, as well as to *communicate*, before permanent improvement can be secured.

It is one of the most glaring defects in our system of popular instruction, that no provision is made for the study of those branches which are intimately connected with agriculture, and a knowledge of which is necessary in order that the science itself may be understood ; we are therefore met with an obstacle which it is not easy to surmount, whenever we attempt to instruct the community into the principles of the art. There is wanting not light on agriculture, but a *recipient power* in the general mind to collect the light which actually exists. There is knowledge enough in the world to save it, if it could be brought to bear upon the popular mind; hence what we need is such an elementary knowledge of mineralogy, botany, chemistry and natural philosophy, with their application to the arts, that the science of agriculture may be understood, and such a discipline of the popular intellect that this knowledge may be practically applied.

For want of this *recipient power*, the press, that great engine of popular instruction, is deprived of the greater part of its efficacy. Popular lectures, the efforts, the discoveries of scientific men exert but a feeble influence. The fostering care of the Legislature, and the indefatigable labors of agricultural societies scarcely reach the general mass of farmers. The consequence is that no preparation is considered desirable to become a farmer,* as if men were endowed for this employment with an instinct like the bee or beaver, which is perfect in itself and could not be improved by education.

While some degree of preparation is deemed necessary to practice the *rudest trade*, that of a *cobler* or common *pedlar*, the most difficult and important of all trades may be carried on, it is supposed, without any prepara-

* See Dr. C. T. Jackson's third Annual Report of the Geology of Maine, p. 123, sequel.

tory or professional knowledge. What should we think of the wisdom or the sense of that community which should encourage all its physicians, lawyers, ministers, merchants and politicians to engage in their respective professions without any professional knowledge whatever? And yet there is as much propriety for a young man to engage in the profession of law, medicine, or theology, without professional knowledge, as in that of farming without a knowledge of its fundamental principles. True, he might do more injury to society in the former case, but he would have an equal title to the character of a quack in both; and quackery in farming has many striking analogies to quackery in medicine, and were it not *so common* would meet with similar ridicule and rebuke by all intelligent men.

But how can this *recipient power* be supplied, and how can this professional knowledge be acquired, unless agriculture be made a subject of study? As our common school system excludes those kindred branches of natural science which are necessary to a professional knowledge of agriculture, the commencement of improvement must be made in our academies* and higher seminaries. Our colleges have a different object, their course of study has become too rigidly fixed to be altered, and it is doubtful whether any success could crown the effort if tried. But this is not the case with our academies, and scientific agriculture may be introduced into some of them and taught successfully to those who are to be the future cultivators of the soil. With an institution liberally endowed, with proper aids, text books, lectures, apparatus, and experiments conducted in the field, the young farmer, after having received a thorough discipline

* After the subject has been introduced into a few of our higher seminaries, for the purpose of preparing the teachers of our common schools to instruct in the various departments of Natural History, the subject may then be introduced into them; but until we have teachers qualified for such instructions, we must confine our efforts to higher seminaries, where those facilities may be furnished which are required for teaching the first principles of Chemistry and Natural History. The great difficulty now is that we have neither qualified teachers, nor books, nor cabinets, nor apparatus, which are requisite to prepare men in our common schools for the theoretical and practical parts of agriculture and the various other arts and trades.

in a preparatory course, may finish his education by obtaining a scientific knowledge of agriculture previous to entering up the great business of life.

We would not establish institutions for the mere study of agriculture, but would connect it with an extended course of English education. We are no advocates of a superficial course of training. We would discountenance the idea that a competent knowledge of this subject, sufficient to answer the ends designed, can be obtained in a single term, or a single year; nor do we believe that every young man, whose duty it may be to till the soil, is capable of gaining a scientific knowledge of the subject; but we would propose the course to those young men who are to become the leading minds in society, (and there are many such in every county, in every town throughout the state,) we would make them scientific farmers, and, scattered as they would be among the farming community, their example and influence would soon give character and permanency to the profession, and bring all under the power of its beneficial effects.

There is not, to my knowledge, a single institution in the country where agriculture is *actually taught* in any of its departments. There are institutions where men may be instructed in almost every other art but this. There should be at least *one place* where the subject may receive that attention which its importance demands; one ray of light to show, if nothing more, the darkness which really exists. It is impossible for me to understand the reason why farmers have not ere this established schools* for the study of scientific agriculture. They have given their money to educate ministers,

* "Every American farmer," says Dr. C. T. Jackson, (whose opinion is entitled to special consideration,) "who prides himself on his freedom and intelligence, should exert himself to rescue agriculture from a mere routine of mechanical drudgery, and should endeavor to instruct his children in the scientific principles of the art. Besides increasing the agricultural produce of the country, such means will surely aid in the advancement of civilization, and will afford a constant source of rational enjoyment to the intelligent, educated farmer. I do not understand why the agricultural community have been so long willing to forego the benefits of a scientific education, nor why they have not established colleges or schools for instruction in the principles of this, the first and most important of the arts."

lawyers, physicians, merchants, mechanics, and sailors. They have, as it were, gone out of their appropriate fields, to cultivate those of their neighbors; they have been ready to aid every other profession but their own; they have sent their sons to learn to be gentlemen, and to pass well in the world; but have not made provision for teaching them that profession in which they are to spend their life and gain their support.

Attempts have been made in several places to introduce agriculture as a branch of study, but have generally failed, either because it was a plan to raise up a sinking institution that had no foundation to it, or because the institution was established for the *mere study* of agriculture, as if no preparatory course were required, no discipline of mind requisite, to obtain a scientific knowledge of the subject. Efforts are now in progress to introduce the subject into the Teachers' Seminary* at Andover; lectures are given upon the subject the present term, and it remains to be seen whether the farming community will sustain the effort, and make it a thorough and permanent means of advancing the art, or whether they will permit it to add another unsuccessful attempt to raise the employment to the dignity of a profession, and rescue it from merited contempt.

A better day, I trust is dawning upon us. The public mind is awakening to the subject. Scientific men are turning their attention to it. The friends of education are anxiously inquiring for something to remedy the defects which exist in this respect in our system of popular instruction; and it is now for the *farmers* themselves to put forth their efforts, and we shall soon have institutions of a high character, where young men may obtain a thorough and practical English education; where they may study agriculture as a science, and become

* I am now able to state that arrangements have been completed for instruction in scientific agriculture, and that in addition an extensive garden will be laid out in the spring, and all the branches of horticulture attended to by a practical and scientific horticulturist. One of the principal objects will be to cultivate fruit trees and fruit; of course all the processes of cultivating fruit and vegetables may be studied practically by those who may wish to patronize the effort.

qualified to take their proper stand among the learned of other professions. If the farmers, mechanics, and merchants willed it, we should soon have seminaries sustaining the same relation to the various departments of business, that our colleges and professional schools do to the learned professions. It would be easy to quote the opinions of many experienced farmers and men of practical wisdom, in confirmation of the views here suggested.* It would be interesting to point out examples of the success of similar institutions in other countries.† It would be profitable to sketch the plan of such an institution here,‡ but our limits forbid.

The establishment of such institutions will furnish the best means of *diffusing a correct knowledge of agriculture* through the farming community. The sons of farmers, educated into the principles of the art, would carry them home and teach them to their fathers, who would thus be induced to apply them to practical use, or as they left these institutions, and engaged in the practice of their profession, they would be the means of awakening an interest in the communities where they may chance to be placed, which would soon be manifestby a demand for more general attention to the subject in all our literary institutions. By thus multiplying examples, the utility of the subject will be felt, and the most prejudiced farmers among us will send their sons to the institutions to learn the secret of that art whose magic touch converts their barren wastes into fruitful fields; to become possessed with the knowledge of those natural powers which like

* See Buel's Cultivator, vol. 1, p. 12.

† See an Account of the agricultural school at Howfyl, Switzerland, in the Penny Magazine, October number, 1834.

‡ Such an institution, or college, should not be devoted wholly to the study and practice of agriculture, but should be equivalent in all the departments of English literature, to our colleges, and superior to them in the natural sciences. Hence it would require at least three years, (four would be better,) of close study. It should be furnished with a farm, and the operations of horticulture and agriculture should be taught practically to some extent. At least, the pupils should witness the processes under the direction of a teacher. It should also be furnished with extensive philosophical apparatus, a cabinet of minerals, a chemical laboratory, for elementary instruction in chemistry and for the analysis of soils, and a library of agricultural books, to which may be added, teachers of the highest qualifications in their respective departments.

the rains and the dews of heaven, cause their paths to drop with fatness, and their storehouses to overflow with abundance.

Suppose an institution of the kind established in this county, furnished with the best facilities which money can procure, and suppose ten young men from each town were to receive there a thorough education in all the common and higher branches of English literature and the sciences, with a professional knowledge of agriculture. How long would it be, after they had engaged in their profession, before their influence would be felt in the deliberations of these annual gatherings? how long would it be before they would present so many living examples of the utility of the plan, as to revolutionize the whole subject, and lead all to adopt more scientific and profitable modes of culture.

Suppose one of your sons, having acquired the elements of an agricultural education, should go out into the west, and settle on the fertile prairies of Illinois. The application of his knowledge to that almost inexhaustible soil, would soon produce so great a difference between his own farm and that of his less scientific neighbors, that an interest would be excited there, and efforts would be made by all around to found their system of culture on more productive principles. And not only so, but he would possess an immense advantage over others in the selection of his farm. How many men, within the last few years, have invested funds in western lands, without any further knowledge of the location and character of the soil, than what is obtained by the paper cities which the ingenuity of speculators has created; and now, all over that country are to be seen the remains of half-built towns, on which thousands have been squandered, deserted for more favorable locations. But especially, if he settles down in New-England, and expects to gain his bread from granite rocks, and sterile sand hills, will he need the aids which such an education will afford, that he may have something to lighten his labors; something to reward his toils. Your sons will many of them soon take the place which you now hold, soothing and

sustaining you in your passage to the tomb, as you have sustained your parents, assuming your responsibilities, tilling the same soil on which you have spent the vigor and manhood of life. This subject will then be to them one of vital importance. The green forests are gone, the soil has become exhausted, and something must be done to bring it back to its ancient fertility. They must compete with the western farmer by the superiority of their knowledge, by the skill which they can bring to their aid, or in a few years they must either become miserably poor, or leave the home of their childhood to settle on more fertile lands in the far west.

Hence, the introduction of agriculture into our seminaries of learning, will render the business *more profitable.* It is not expected that sudden affluence can be obtained by cultivating the soil, whatever improvements, or system of culture may be introduced; but the history of agriculture in England, Scotland, and on the continent of Europe, conclusively proves, that the productions of the soil may be doubled, trebled and quadrupled by the application of scientific principles and the adoption of correct modes of culture. Its history in our own country shows, that the resources already developed are but just beginning to be understood and applied. The productions of our soil have been doubled within the last twenty years, and yet, when we compare our own fields with those of older countries,* we need not hesitate to believe that by the application of science and proper skill the productions of our rocky soil may be easily doubled, with no greater amount of labor and capital than are now employed. From what little examination I have been able to make, we have lands in this county and throughout other parts of the state, which are now entirely unreclaimed, in the form of peat swamps and meadows, capable, I verily believe, of yielding a greater amount of productions than are now obtained from that which is

* The average quantity of wheat per acre in England, is twenty-six bushels; that of the United States not over twenty bushels per acre; of Massachusetts, only fifteen bushels per acre. In Flanders, the difference is still greater, with regard to all kinds of crops.

cultivated. At least, we have in these swamps and low-lands, invaluable sources of fertility, sources which are inexhaustible because supplied with food for the plants of a thousand generations.

I asked a farmer in this county sometime since, why do you not improve your waste lands, such as peat swamps and meadows? Why, says he, we cannot obtain manure enough for our uplands; five dollars a cord is too high a price to pay and get a living by it. The idea of a want of manure here, was to me, I must confess, no less astonishing than ridiculous, when I called to mind that these same "unimprovable lands," as they are styled upon the records of the town, contained manure enough in some sections to cover all your tilled lands a foot deep;—*manure enough* to render every acre of soil as fertile as the prairies of the west;—*manure enough* to cause two tons of hay to grow where now grows but one, and an equal increase in all the other productions of the farm. There are few portions of the state where the *sources* of fertility are more abundant than they are in this county. Let it be granted, if you please, that these lands are unimprovable as soils, (which is by no means true, many of them being the most valuable for this purpose,) still, they are vast repositories of vegetable food, which, by the application of science and skill, may easily be converted into manure, and placed upon the neighboring sand hills, thus changing the whole county into a fertile garden. Were strict justice done, the owner of peat meadow* and swamp muck, instead of being assessed for thirty or forty acres of "unimprovable land," considered valueless on the town records, should be taxed for forty acres of manure, from one to fifteen feet in depth, and worth five dollars per cord as soon as converted into the food of plants.† By making agriculture a

* The value of peat bogs may be stated in few words, says Mr. Mathews, in his fourth annual report of the Geology of the State of New York. 1. "Peat is equal to oak wood, bulk for bulk. 2. Peat lands are more productive by far than uplands. 3. Peat manure is more valuable than stable manure."

† See letters of Elias Phinney, Esq. of Lexington, and Dr. N. C. Rush. In Dr. C. T. Jackson's Third Annual Report of the Geology of Maine, p. 129, and

study, a profession, and diffusing its principles abroad, those and other means of fertility will necessarily be developed and applied. The labors of the farmer will be more bountifully rewarded, and a motive furnished for the investment of capital in farming operations.

The broad foundation of progress and success being laid in the intelligence and skill of the farming community, we shall hear no more complaint of our hard fortune in being placed on granite and barren rocks. We shall have no occasion to envy the western farmer with his rich bottom lands and ague fits; no desire to leave the hills, the vales, and crystal streams of our own happy New England, which are associated in our earliest and most sacred recollections; no wish to be divorced from the friends we love, the institutions in which we have been educated, the altars of God where we have often worshipped, to leave, in fine, our glorious heritage, than which the sun doth not shine upon a better or fairer, for the uncultivated wilds of the west, shut out from society, religion, and law. And yet, such must be the case, unless efforts are made to increase the fertility of our soil. We never can sustain our increasing population, and your sons must go west from necessity. Let it be remembered gentlemen, that Yankee character is exceedingly flexible; your sons will not be a race like their fathers, but will be liable to become contaminated by the influences which surround them. It is a subject which appeals to every interest, social, moral, political, and religious. Let us then make agriculture a science, a profession. Let us establish institutions where our sons may be qualified to become scientific farmers, thus furnishing a motive, by increasing the rewards of industry, which shall fix them to their native soil, that when they assume our responsibilities, they may be better prepared to discharge their duties as citizens and as freemen.

"Then may our sons be as plants grown up in their

Mr. Finney's letter, in the Geological Survey of Rhode Island, p. 246. See also Professor Hitchcock's Final Report on the Geology of Massachusetts, vol. I, p. 109, seq.

youth, our daughters as corner stones, polished after the similitude of a palace. Then may our garners be full, affording all manner of store, and our sheep bring forth thousands and ten thousands in our streets. Then may our oxen be strong to labor; there shall be no breaking in nor going out, and no complaining in our streets."

The introduction of agriculture into our literary institutions will tend to render the employment *more reputable.* It will give it a *professional character.* A greater number of men will engage in it, and a necessity created for a higher state of intellectual and moral culture in the community, in order to practise the art successfully in its advanced and perfected state. Hence, it will tend to elevate and enlighten the popular mind.

It is the greatest objection to a farmer's life, that it furnishes too little excitement for the mind; his body works; there is little else but an exertion of muscle, there is nothing for the brain to do. The reason is, he has no scientific principles to apply; but give him a knowledge of these; let him feel that he has observations to make and principles to apply, nice and difficult questions to settle, and you at once furnish him with something to excite his intellect. You will thus create an interest in his mind, and an exertion of its powers, which will soon transform him from a condition but a little above the tardy beasts which drag his plough, to that of one whose powerful intellect shall correspond to the giant and sinewy frame which his occupation usually produces.

The lawyer employs his mind about his profession. It affords him matter for thought, and stimulates his faculties to effort; so it is with the physician, the minister, the mechanic and the merchant; these pursuits, being based on scientific principles, require constant exercise of the mind, the habit of patient observation and reflection is cherished, and the intellect made vigorous and strong. Hence, the interest which men of these professions feel in their employments. They have something to *task* the mind. But the case is quite the reverse with the farmer. His thoughts are rarely employed about his profession; other subjects excite his interest, and not

his own business; or rather, his employment is not the absorbing business of life, and he often *submits* to labor from necessity rather than from choice; but only give a *soul* to his efforts, by presenting him the subjects of thought, and his employment rises at once in his own estimation; he will respect himself, and respect his profession, and as a necessary consequence, be elevated in the scale of intelligence and respectability. There is a feeling among our young men, that they must go into some more *reputable* employment, some more royal road to wealth and fame than their fathers trod. They must leave the field, and rush to the mart of trade; they must dip into speculation; they must make haste to be rich, and raise themselves to a more honorable station by an increase of their wealth rather than by means of intelligence and virtuous principles. In the commercial disasters of the last few years, Providence seems to have rebuked this grasping spirit, and driven thousands from our cities back to the soil, thus teaching them that "the way of the transgressor is hard," and leading them to respect an institution which he has established, as the natural and most honorable means of gaining a support.

Let me assure our young men, that it is an entirely erroneous view to regard agriculture as an *ignoble* employment, fit only for those who have not brains enough to obtain a living in any other way. Some, I know, thus regard it, and are disposed to look down from the elevation of a pedlar's wagon, a stage-coach box, or a tin cart, upon those who are doomed to the toils of the field.

Such, of course, must be left to enjoy their self-complacency; they are incapable of better sentiments; we may pity their weakness, but cannot respect their opinions. But there are others, who, from their peculiar position in society, are disposed to indulge the secret feeling, at least, that they are above such menial employments. Nothing can be more absurd than such a feeling; it can be indulged only by those whose minds are narrow, or ill-informed, from prejudice or ignorance, or if there is any ground for such an opinion, it does not arise from the employment itself, but from the manner in

which it is practised, and from the character of those who engage in it.

It becomes the farming community to consider well how much foundation there is for the light in which many are disposed to regard their profession. Every individual is bound to take care of his own character. If he does not do it, who will? The same rule applies to the professions;* those who practise them are responsible for the character which they sustain. If there is any justice in considering agriculture as the lowest of the employments of life, the responsibility rests upon the farming community, and not upon the profession itself. Let it be established on scientific principles, let it be made an indispensable part of an education; let the farmers themselves guard it from reproach by their intelligence and skill, and such a feeling will be banished from the minds of all whose opinions are worthy of confidence or respect.

It is a noble employment. It is best fitted for the complete developement of all the powers of man. It is an honorable employment. It was practised in Eden ere man fell from a state of innocency. Noah and Abraham, and all the patriarchs were farmers. The sweet singer of Israel was a poor shepherd's boy. The wisest king that ever sat on a throne was a most extensive agricultural writer as well as cultivator of the soil. Many of the Grecian and Roman princes had large estates. Cincinnatus was called from the plough and placed at the head of the government of Rome, when a foreign invader threatened to subvert her liberties. The Kings of Scotland set their people an example by tilling the soil with their own hands. Burns, the sentimental Burns was the "Ayrshire ploughman;" Washing-

* It should be borne in mind, in this connection, that the character of any profession is formed before the practitioners are aware of it, and of course without their intention. The profession is estimated by the character of the great mass, and not by that of the few who may be in extremes, either very good or extremely bad. After the character of any professon is formed, and its position defined, it is extremely difficult to alter it, especially to raise it above its established dignity and mercantile value. Hence, great efforts are necessary to render agriculture any but the lowest employment, although we know it is capable of ranking among the highest.

ton and Jefferson and Adams were farmers, Van Buren is a farmer; and last, not least, he who has been so lately elevated to the highest station in the gift of a free people, and whose sudden departure to the world of spirits has clothed our nation with sackcloth, was styled by way of eminence, the *farmer of North Bend.*

There is not much danger, gentlemen, that agriculture itself will ever become unfashionable, however unskilfully it may be conducted, and whatever grounds there may be to despise it; so long as it is fashionable to eat, it will be fashionable to till the soil. Agriculture becoming unfashionable! you might as well suppose that clothing amidst the storms of winter, would become unfashionable. Fashion, however, has great power with young men, and if the employment is not fashionable among that class, the course which we have suggested will tend to remove this prejudice from their minds. It will tend to make the farming community, what their independent position qualifies them to be, the *true aristocracy* of the land. Why should they not be? There are few of the so called aristocracy of our cities, who can go back three generations without finding their fathers following the plough in some obscure nook in the mountains. We have no privileged class, unless it be the farmer. "He whom nature at his birth endowed with noble qualities, tho' an Ethiop and a slave, is nobly born."

Dismiss, then, from your minds the idea that agriculture is an employment *beneath* your faculties, and exert yourselves to elevate it in the estimation of the community. By the best informed, the truly great minds, it has never been so regarded. It is among those who are not certain of the estimation in which they are held, and who are striving to elevate themselves from the lowest plebeian to the patrician ranks, that the feelings which are here discountenanced are most commonly indulged. Let it attain to such perfection and permanency, that whoever cherishes *such feelings*, shall afford the most convincing evidence of a weak mind, a small brain, a retreating fore head, an ignoble origin.

So far is agriculture from being an undesirable profes-

sion, that there are many considerations, growing out of the employment itself, which should influence men of all classes and professions to carry out the plan which I have so imperfectly sketched, and which I believe to be the only effectual means of constant progress and permanent improvement in the art. There are many peculiarities in this employment which render it upon the whole the *most desirable* of any other.*

It is the most *independent* of all professions. The possession of a good farm enables the farmer to obtain nearly all that is absolutely essential to his existence and comfort. In professional life, there is a constant dependence upon the caprice of others. We are obliged to consult their prejudices, to bear with their indignities, submit to self-denial, and be harrassed with cares and anxieties, of which the farmer has not the most distant idea. He is lord of the soil, his own master, and is under no temptation to descend to anything mean or unworthy of a man. The fluctuations of business affect him far less than most other classes, and the rewards of his toils, although they come slow, are always sure, so long as the rains and the sunshine are granted him his store-house is sure to be filled.

Being, as it were, isolated and guarded from the vicissitudes of fortune and of favor, his situation is peculiarly favorable for cultivating the virtues of patriotism. The hills where he feeds his flocks, the fields where he sows his seeds and gathers his harvests, attach him to his country. They are associated with all his trials and all his joys, and hence, if these fields are invaded, his arm is the first and the strongest to repel and punish the invader.

The situation and employment of a farmer are best fitted to cherish and strengthen the *social affections*. The sources of his pleasures are in his own family, and by his own fire-side. His daily task accomplished, he gathers around the blazing hearth, amid bright faces, and buoyant spirits, to indulge in the sweets of domestic inter-

* See Addresses by the Rev. Henry Colman before the Agricultural and Horticultural Societies of New Haven County, 1840.

course, unalloyed by care or apprehensions of the future. Ambition, and envy, and discontent, find no sympathy there—the waves of anxious busy life, in crowded cities, break not in upon his security. He lays himself down to rest, contented and happy; no distressing dreams disturb his slumbers; no visions of falling stocks and broken banks, or disappointed hopes, prey upon his nerves, and lead him to wish for the morning, but it is as true now as it was in the days of the Wise Man, "the sleep of the labouring man is sweet." His friends are few, and hence he takes a deeper interest in the affairs of his neighbors All meet on common ground; artificial distinctions, which give rise to so much alienation and selfishness where different grades are mingled together, are un known. Hence, there arises, that natural interchange of kind offices and good wishes which contribute powerfully to strengthen the social relations, and to develope the humane and benevolent affections.

Finally, the condition and employment of the farmer are most favorable for cultivating the *moral sentiments and religious affections.* He is removed in a great measure from the temptations which are incident to other branches of industry; away from crowded streets, and artificial excitements, there is the best opportunity for sober reflection. The motives for dishonesty, for fraud and deception, are much less powerful, and fewer occasions present themselves for vicious indulgences. The hope of *sudden* affluence, which stimulates the merchant, the manufacturer, and the speculator, and which excites the selfish, ambitious propensities, has little power to weaken the moral sentiments of the farmer. There is, moreover, in labor itself, a tendency to guard the mind from the assaults of vice. An indolent people are always a *vicious* and an irreligious people.

> "All is the gift of industry, whate'er
> Exalts, embellishes, and renders life
> Delightful. Pensive winter, cheered by him,
> Sits at the social fire, and happy, hears
> The excluded tempest idly rave along.
> His hardened fingers deck the gaudy spring,
> Without him Summer were an arid waste,
> Nor to the Autumnal months could thus transmit

Those full, mature, immeasurable stores,
That, waving round, recall my wandering song."

There is little time for idleness, the parent of many vices. But when toil ceases, necessary rest must succeed. Hence, there is much sound philosophy as well as practical wisdom in the practice of sending boys from our cities to engage in manual labor, in consequence of the influence it exerts upon their vicious propensities.

It has been thought, I know, that labor is a curse; but when man was doomed to gain his bread by the sweat of his brow, fallen as he was, it became the greatest blessing. Such a requisition did not arise from the idea of retribution, but from that of mercy. It furnishes one of the brightest assurances, that the Deity, tho' justly incensed, has not given up our race to the hopeless consequences which disobedience might have incurred, for the effect of labor is to prepare the mind for the reception of *moral* and *religious truth*. This is fully confirmed by experience. Who ever heard of riots and mobs among farmers. Farming communities are uniformly more virtuous and more religious than those whose occupation leads them into scenes of greater temptation.

Setting aside, then, all other considerations of a pecuniary and temporal nature, it is my settled conviction that if any of your sons, after having acquired a thorough agricultural education, were to settle down to the tilling of the soil, they would be much more likely to lead happy and honest lives, and go to heaven at last, than if they were to engage in the strifes of political, professional, or mercantile pursuits, and obtained all the wealth which their ambition could desire.

The employment of the farmer seems best fitted to our present condition, and tends, more directly than any other, to prepare men for that future condition whither all of us, whether we will or no, are so rapidly hastening.

There are but two objections to the plan here suggested; the first is, the cost of such an education; the second, the time required to obtain it. We may pay too

high a price for the article which we purchase. Will the results, in all probability justify the undertaking? How much would such an education cost? I have not time here to go into particulars, but will pledge myself to show, that on the supposition that our young men spend four years of time, it shall not cost them over six hundred dollars; one half of which expense they may defray by teaching school during the winter; and is there a young man in this county or in New England who cannot obtain that amount? If he cannot, he has not the talent and industry which are needed to engage in an enterprize like this. But if all cannot do it, there are multitudes that can, and would, if the opportunity were furnished, and the countenance and support of the community were given. There is no necessity that any young man should be deprived of such an education on the ground of expense. But how can our young men spend the time? "Time is money," but in estimating its value, we must take into account the *whole* of life; is it certain that four years of time thus spent would be lost? is it not probable that at the age of forty the man would be possessed of more wealth, more influence and more character than if his time and money were devoted to the cultivation of the soil without such an education. Three or four years spent in the cultivation of the mind and the heart, may be of more value than all the money which a life of toil would secure, without such discipline. "Knowledge is power," and as we cannot live our lives but once, if the seed time is neglected, we cannot roll back the wheels of time, but must reap a scanty harvest in old age. "He that soweth sparingly shall reap also sparingly, and he which soweth bountifully shall reap also bountifully." Let it be remembered that a good education is an investment for life, yielding a constantly increasing income, which nothing can take away, which no fluctuations in human society can change or destroy.*

Is it not desirable, then, that efforts should be made to

* See Buel's Cultivator, vol. iv. p. 70.

place agriculture, the noblest as well as the foundation of all other arts, upon a scientific basis—that the lights of science may be brought to its aid—that it may become more profitable and more reputable? But how can this be done, unless schools be established for the study of it; how, unless the farming community are willing to educate their sons into the profession? Could this be effected, could all our farmers be taught those elementary principles, which would enable them to understand the character of the soils, and the mode of increasing their fertility, which should instruct them in the right modes of culture, I have the fullest conviction that in a few years the productions of their farms would be doubled with the same amount of labor, thus furnishing the means of increasing individual and national wealth, and a more liberal supply of all the necessaries and luxuries of life. Thus furnishing time and facilities for a more extended system of intellectual and moral culture, and for improvement in every art, in every branch of human industry, in every department of human knowledge, thus tending directly to elevate the popular mind, and prepare men to sustain, to enjoy the institutions of a free government, of liberty, of order, of law and of religion.

REPORTS, &c.

ON PLOUGHING.

WITH DOUBLE TEAMS.

YOUR Committee respectfully REPORT:

That the lots appropriated for ploughing with double teams, were taken in the order and finished in the time and number of furrows exhibited in the following table:

Lot.	*Names.*		*Minutes.*	*Furrows.*
1	Isaac W. Andrews,	Boxford,	45	28
2	Joseph Symonds,	Middleton,	45	28
3	Perley Tapley,	Danvers,	45	31
4	Joseph F. Davis,	Newbury,	42	26
5	Joseph Goodridge,	W. Newbury,	45	27
6	Ralph H. Chandler,	Andover,	51	28
7	Hobart Clark,	Andover,	50	27
½ lot.	Sylvanus B. Swan,	Danvers,	22	14
Do.	Richard T. Jaques,	W. Newbury,	22	14

The Committee, after having carefully examined the fields, have agreed to recommend the following awards: That the

1st	Premium,	$12	be given	Perley Tapley.
2d	"	10	"	Joseph Symonds.
3d	"	8	"	Ralph H. Chandler.
4th	"	6	"	Joseph Goodridge.

In reference to this Report, they further submit the following remarks:

That the first award was given without any qualifying circumstances.

The Committee were of opinion, that the work of the

second and third lots was equally well done, and in fixing upon the award, were brought to the result wholly by the fact that the third was finished in less time than the second.

In respect to the first lot, (Mr. Andrews') they observe, that its location was in some respects less favorable, and the grass taller and thicker than on the others, which, of course would render it more difficult to make smooth and finished work, while it is supposed that the length of the yoke used rendered it necessary to set the fixtures and plough in such a manner that the actual line of draft did not correspond with motion of the plough. This, combined with the fact, that Mr. Andrews ran his furrows deeper than was proposed by the Society, was undoubtedly among the reasons why the field presented slightly an unfinished appearance, and not that there was wanting skill in the person who performed the work.

On the fourth and seventh lots, the furrows were lapped over, which probably by many would be regarded as no defect and perhaps a real excellency, for on this subject, we are aware that there exists a diversity of opinion among the most experienced cultivators. Your Committee, however, while they are happy to state that the work was well done, feel constrained to think, considering the nature of the soil and the depth of the furrow required by the Society, that they ought to recommend the premiums offered, to those who laid the furrows flat and smooth, rather than to those who caused them to lap over.

It was an unhappiness, that there was not a sufficient number of lots provided to supply all who had given in their names as competitors, and owing to some misapprehension, or former usage, there had been a little irregularity in the manner in which some had given notice of their intention to take part in the match. All this was entirely unknown to your committee, till they had got upon the field—a place and a time very poorly adapted to investigate and settle questions of a somewhat complicated character. While the committee are conscious of having desired to do equal justice, they by

no means feel confident, that had all the circumstances been fully brought before them, but they might have been led to a different result. They feel happy in saying, that a very good and gentlemanly feeling was manifested by the competitors on this subject, and are certain that they may expect from such men no other than upright intentions accredited to them. Of those, who, in consequence of this deficiency of lots, had no means of taking a regular part in the contest, were Sylvanus B. Swan, and Richard T. Jaques. These gentlemen, finding, after the ploughing had commenced, that there was a lot designed as we suppose for the single teams, unoccupied, proposed to divide it between them. To which proposal your Committee consented. This lot was unfavorably situated, and the ploughing commenced under unpromising circumstances; but it is no more than justice to say, that from the manner in which the work was done, the Committee were left under the thorough impression, that had the gentlemen concerned enjoyed equal opportunities with the others, they would have found few equals, if they had any superior, in this most important and interesting part of agricultural operations. There was very little, if any difference in the skill manifested in the work, and none in the time taken in performing it. We hope they may have on a future occasion an opportunity to work with advantages equal to those who shall strive with them for the victory.

In regard to the whole trial, the Committee are glad to say, there prevailed a good spirit and great propriety of conduct, that the teams gave manifest evidence of being well trained, that there was very little use made of the whip or goad, and but a slight resort to forcing the oxen along in any way. The ox seemed to know, and feel willing to obey and serve his master, and the drivers, to realize and act under the influence, that a righteous man is merciful also to his beast.

Respectfully submitted,
For the committee,
G. B. PERRY.

Georgetown, Sept. 29, 1841.

WITH SINGLE TEAMS.

THE Committee on Ploughing with Single Teams, REPORT:

That nine teams were entered for premiums; seven only ploughed:

Namely, Allen Putnam, of Hamilton.
" William R. Putnam, of Wenham.
" Perley Tapley, of Danvers.
" Moses Pettingill, of Topsfield.
" John Preston, of Danvers.
" Joseph C. Putnam, of Danvers.
" William R. Cole, of Boxford.

The land for ploughing was marked off in lots, and numbered, and drawn by the following persons, viz:

Lot No. 1, was drawn by Allen Putnam, and was ploughed in 39 minutes, with Howard's plough, with 23 furrows.

Lot No. 2, was drawn by Perley Tapley, which he ploughed in 56 minutes, with Prouty and Mears' plough, with 30 furrows.

Lot No. 3, was drawn by Moses Pettingill, which he ploughed in 59 minutes, with Winslow's wooden plough, with 29 furrows.

Lot No. 4, was drawn by John Preston, which was ploughed in 62 minutes, with Ruggles and Nourse's plough, with 32 furrows.

Lot No. 5, was drawn by William R. Putnam, which he ploughed in 48 minutes, with Howard's plough, with 30 furrows.

Lot No. 6, was drawn by Joseph C. Putnam, which he ploughed in 42 minutes, with Ruggles and Nourse's plough, with 29 furrows.

Lot No. 7, was drawn by William R. Cole, which he ploughed in 64 minutes, with 29 furrows.

After the best examination which the Committee were

able to make while the teams were ploughing, and also after they had left the ground, they were unanimous in awarding the premiums as follows, viz:

1st Premium of $10, to Joseph C. Putnam, of Danvers.
2d " $8, to Allen Putnam, of Hamilton.
3d " $6, to William R. Putnam, of Wenham.
4th " $4, to Perley Tapley, of Danvers.

The Committee believe that the ploughing this year, taken altogether, is superior to what they have ever witnessed in any former year, and the ploughs, some of them, were of superior finish and workmanship, and they very much regret, that the comparative ease of draft of some of them, could not have been fairly tested, for want of time, and on account of the ill health of the Chairman of the Committee for that purpose.

All which is respectfully submitted,

For the Committee,

ANDREW DODGE.

Sept. 29, 1841.

WITH HORSE TEAMS.

The Committee on Ploughing with Horse Teams, REPORT:

That there were but two teams entered for premium, both of which did their work in 51 minutes.

To Seth Kimball, of Andover, who did his work with 28 furrows, averaging 6 1-2 inches in depth, without a driver, they award the first premium of eight dollars.

To Perley Tapley, of Danvers, who ploughed 30 furrows, averaging five inches in depth, with a driver, they award the second premium of six dollars.

For the Committee,

THOMAS E. PAYSON.

Georgetown, Sept. 29, 1841.

REPORT OF THE STATE COMMITTEE.

The Committee appointed to award the premiums granted by the Trustees of the Massachusetts Society for Promoting Agriculture, respectfully submit the following REPORT:

They award premiums as follows:

To George Hood, of Lynn, for the best full-blooded bull, of an imported breed, not less than one year old, on satisfactory assurance being given, that he shall be kept for use in some county of the State at least nine months from the day of exhibition, - - - - - $15 00

To Enoch Silsby, of West Bradford, for the second best, - - - - - 6 00

To H. C. Merriam, of Tewksbury, for cow Columbine, for the best full-blooded milch cow, of an imported breed, not less than three nor more than ten years old, with satisfactory evidence as to the quantity and quality of her milk, and the manner in which she has been fed, - 15 00

To H. C. Merriam, for cow Juno, for the second best, - - - - - 6 00

To Moses Pettingill, of Topsfield, for the best full-blooded yearling heifer, of imported breed, 5 00

To Hobart Clark, of Andover, for the best pair of working oxen, taking into view their size, power and training, - - - 12 00

To B. Cole, of Boxford, for the second best, 6 00

To Daniel Andrews, of Boxford, for the best pair of three years old steers, taking into view their size, power, &c. - - - 10 00

To Joshua Hale, of Rowley, for the best milch cow, of native breed, not less than three nor more than ten years old, with satisfactory evidence of the quantity and quality of her milk, and the mode of feeding. - - 10 00

For the Committee,

FRANCIS C. LOWELL.

ON BULLS.

The Committee on Bulls REPORT:

That there were twelve entries for premiums.

One by George Hood, of Lynn, 5 years old.

" Hazen Hazeltine, of Haverhill, 4 years old.

" George Spofford, of Georgetown, 3 years old.

" Jesse Sheldon, of Beverly, 3 years old.

" Paul T. Winkley, of Newbury, 2 years and 9 months old.

" D. S. Caldwell, of Newbury, 2 years and 7 months old.

" Tappan Pearson, of Newbury, 19 months old.

" John Preston, of Danvers, 18 months old.

" Enoch Silsbee, of Bradford, 17 1-2 months old.

" Thomas E. Payson, of Rowley, 17 months old.

" Amos Kimball, of Boxford, 16 months old.

" Josiah Crosby, of Andover, 13 months old.

The bulls were superior to any seen by the committee at any former Cattle Show in this County.

The bull of Mr. Hood, of Lynn, is unquestionably of first rate stock as to pedigree, as will appear by the statement handed to the Committee, and also by some of his stock this day at the show—but considering his age, and the very superior promise of some of the young bulls, no premium has been awarded him. But considering the interest he has manifested for the Society, by sending his bull to the show, we would recommend to the Trustees to grant him a gratuity of three dollars.

For the bulls of Hazen Hazeltine, George Spofford, Jesse Sheldon, Paul T. Winkley, and D. S. Caldwell, the Committee have awarded no premium, although they are all considered good bulls, and might have obtained premiums at former exhibitions.

The bulls of Thomas E. Payson, and Tappan Pearson were considered very superior animals, both as to appearance and as to pedigree. That of Mr. Payson, being from Mr. Hood's bull.

The bull of Mr. Silsbee, of Bradford, was considered a fine formed animal, of superior imported stock, and the Committee, with some division, awarded to him the second premium of five dollars.

To the bull of Mr. Crosby, of Andover, the Committee have awarded the first premium of ten dollars, unanimously considering him as to size, form, color, and pedigree, (being from Mr. Hood's bull,) one of the best bulls ever exhibited in this county.

There were two bull calves noticed by the Committee; no statement accompanied either, and the Society offer no premium for stock of this description.

In behalf of the Committee,
MOSES NEWELL.

ON FAT CATTLE.

The Committee on Fat Cattle have attended to that duty, and respectfully REPORT:

That only three pair of oxen were entered for premiums. One pair by Peabody Russell, of Boxford, for which your Committee would recommend there be awarded to him the first premium, for his off ox, $15.

One pair exhibited by Dr. Joseph Kittredge, of Andover, for which your Committee recommend that the second premium be awarded to him for his right ox, $10.

One pair of four years old oxen, by Samuel Jenkins, jun. of Andover, for which your Committee would recommend there be awarded to him the third premium, for the off ox, $5.

A fat cow was entered for a premium by Mehitabel Stickney, of Bradford, which your Committee have duly examined, and would say, that considering the length of time the cow has been dry, and her present state, they are of opinion that a premium cannot be awarded. All of which your Committee respectfully submit.

For the Committee,
J. W. ALLEN.

Georgetown, Sept. 29, 1841.

ON WORKING OXEN.

The Committee on Working Oxen and Steers, having attended to that duty, would respectfully REPORT:

There were eighteen pairs of working oxen entered for premium, and four pairs of three year old steers, and three pair of two year old steers. There were fourteen pair of working oxen appeared on the ground. Most of the oxen were very good. Your Committee were unanimous in awarding the premiums as follows:

First premium of ten dollars, to Hobart Clark, of Andover.

Second premium of seven dollars to William B. Cole, of Boxford.

Third premium of five dollars to Josiah Crosby, of Andover.

The first premium of seven dollars to Daniel Andrews, of Boxford, for his three year old steers.

Second premium of five dollars to John Preston, of Danvers, for do.

The first premium of six dollars to Amos Berry, of Andover, for his two year old steers.

The second premium of four dollars to R. H. Chandler, of Andover, for do.

All which is respectfully submitted,

J. H. BARKER,
FRANCIS DODGE,
DEAN ANDREWS,
H. B. SPOFFORD. } *Committee.*

ON MILCH COWS.

The Committee on Milch Cows and Heifers REPORT:

That the Society offers premiums for cows and heifers giving milk, and requires that the owner shall produce satisfactory evidence of the quantity and quality of the milk, and of the manner of feeding. If accurate statements were made by all competitors, they would be

as interesting as any communications that can be submitted to the Society; the Committee regret that the statements are so often vague and imperfect. Few farmers are aware of the great difference in the quantity and quality of the milk yielded by different cows of the same general appearance. By actual weight and measure, it has been made certain, that some cows in Massachusetts have given fifty or sixty pounds of milk per day. In S. Adams, in Berkshire county, there was a few years ago a cow which gave seventy pounds per day. Her extra feed was four pails of cheese whey, and some rye meal. A heifer in the same town is said to have given sixty pounds per day. Our own county has furnished many instances of extraordinary yield. It may be interesting to mention some of them. The Oakes cow made in the year 1813, 180 lbs of butter; in 1814, 300 lbs; in 1815, more than 400 lbs, 1 quart per day being reserved for family use, and a calf being suckled for four weeks in each of the years. In one week, 19 1-4 lbs of butter were made, and the average for three months was 16 lbs. The Nourse cow, owned in Salem, produced 20 lbs, in one week, and the average for four months was 14 lbs. The Barr cow gave in 268 days 7517 lbs of milk. The sales, including the calf, amounted to $151.15. The Putnam cow in 14 weeks, gave 3370 lbs of milk, making 139 lbs. of butter. The Osborne cow, in 77 days gave 3127 lbs of milk. A cow in Andover, in 1836, besides suckling her calf till sold to the butcher for $8, and supplying a family with milk and cream, made 166 lbs of butter.

The cow of Mr. Albert Johnson, of Lynn, which received last year one of the Society's premiums, gave in 184 days, 6840 lbs of milk. The sales from this cow, including her calf, amounted to $142.80, in six months. The cow of Mr. Charles F. Putnam, of Salem, yielded in one year, 4214 quarts, which at five and six cents per quart, gave him $244.03; estimated expense of keeping and milking $91.53, leaving a clear profit of $152.50; more than some who call themselves farmers realize from a dairy of six or eight animals, which are denominated

cows, but which disgrace their family and their owners.

Mr. Colman, in his first report of the agriculture of Massachusetts, makes the following statements: "The difference in the butter properties of different cows is not generally considered. In a yard of five cows, upon repeated trials, made at similar times, and as near as could be, under the same circumstances, the difference in the yield of cream upon nine inches of milk, was found to be as 13 to 3." "The yield of a cow is stated generally at 1400 quarts per year; of butter 87 1-2, 116, and 140 lbs. These returns are very small, and indicate either poor stock or poor pastures, or poor management."

The Committee recommend that the following premiums and gratuities be paid:

To Joshua Hale, of Rowley, for his cow, seven years old, - - - - - $10

To David S. Caldwell, of Newbury, for his young cow, - - - - - - 3

To George Spofford, of Georgetown, for his Canadian cow, - - - - - 3

To Moses Pettingill, of Topsfield, for his heifer of the cream-pot breed, - - - - 5

To David S. Caldwell, of Newbury, for six very promising heifers, not in milk, a gratuity of 3

To Parker Pillsbury, of Georgetown, - 1

To David Jewett, of Georgetown, - 1

for heifers of very good appearance.

John Marshall, of W. Newbury, exhibited a handsome cow, with a very large calf. Rev. Bailey Loring, of Andover, and Mr. John Hale, of Boxford, produced large and promising heifers. Enoch Silsbee, of Bradford, and Mr. Pettingill also exhibited very handsome Durham heifers.

The Committee hope that the farmers of Essex county will be induced to give more attention to their dairy stock, for they are satisfied that there is no stock which more liberally remunerates for generous feeding and careful management. For the Committee,

DANIEL P. KING.

Georgetown, Sept. 29, 1841.

JOSHUA HALE'S STATEMENT.

To the Committee on Milch Cows:

GENTLEMEN—The cow which I offer for exhibition is seven years old. She calved the 22d of March last, and gave milk up to the time of her calving. I sold her calf at three weeks old. She made two pounds of butter per week, on an average, while suckling her calf. The calf weighed 17 pounds the quarter. During the month of June, her milk averaged in weight forty pounds per day. In the same month I sold and used 22 1-2 gallons of milk from her, and she made in the same time forty pounds of butter. Her keeping was a fair pasture, and no other feed. Since the month of June the pasture has been very much dried, and she has never had anything except from the pasture. She has averaged 28 lbs. of milk per day since. Her winter feeding was meadow hay and stalk butts, and no grain or roots of any kind, and not more than 3 cwt. of English hay.

All which is respectfully submitted,

JOSHUA HALE.

Rowley, Sept. 28th, 1841.

GEORGE SPOFFORD'S STATEMENT.

To the Committee on Milch Cows:

GENTLEMEN—The cow which I offer for exhibition was two years old last spring. She was brought from the northerly part of the Canadas, and was purchased from the Indians. She calved the 25th day of March last, and her calf was taken off the fourteenth day of May. Her milk contains an uncommon quantity of cream. I have weighed it from week to week during the summer, and she has given on an average about fourteen pounds of milk daily, having never exceeded 19 pounds, and never fallen short of 10 pounds per day—so that the

whole weight of her milk from May 14th to date is 1918 pounds. She has had no feed except what she has picked from a very dry and poor pasture. I have sold her milk during the summer, and it has been pronounced by those who used it to be the best milk they ever used.

Yours truly,

GEORGE SPOFFORD.

Georgetown, Sept. 28th, 1841.

ON EXPERIMENTS ON MANURES.

The Committee on Experiments on Manures, REPORT:

That in the department assigned to them, two classes of premiums were offered by the Society; the first for experiments to test the value of the various fossil and other modern manures, and the second, "for the largest quantity of a valuable compost manure, collected and brought into condition for use, on any farm within the county." The latter class comprises three premiums, viz., one of thirty, one of twenty, and one of ten dollars.

In proposing so liberal and so many premiums, the trustees doubtless considered that this branch of agriculture was eminently deserving the encouragement of the Society, and that not a few competitors would be stimulated to enter the lists. The Committee fully concur in the opinion that the specific and relative value of the many new substances recommended for manures, deserve, nay, require the test of experiment before it can be expected that the farmers of Essex county, who always look before they leap, will enter very extensively on the use of such substances. The use of these will never supersede that of animal manure, where it can be obtained. But as the amount of animal manure made on most of our farms barely suffices to keep the land in the same heart from year to year, the enterprizing farmer must necessarily look to some foreign source for the means of increasing his crops, and improving the value of his land. Hence, in the neighborhood of the sea, kelp and muscle beds are seized upon with avidity, while

from the stables and stercoraries of populous towns, large drafts are made to increase the manure heaps in the vicinity. But these supplies are limited in amount, and in the locality of their application. The point is soon passed where the expense of transportation causes them to be an unprofitable investment.

Now if poudrette, ground bones, barilla, or other substances, be found to possess great value as manures, though the price paid for them in the first instance be large, yet from the comparative small expense at which they can be transported, and by rail-roads as well as other conveyances, they must at length find their way into general use. But before this period, our farmers must have facts spread before them—experiments, certain and satisfactory, and not contradictory, as have been many of the experiments with lime and other fossil manures.

It becomes those, therefore, who report trials of such substances, to omit no circumstance which has a bearing on the subject. Especially should the nature of the soil upon which they are applied be stated, whether wet and tenacious, or dry, gravelly, and sandy. The character, too, of the season following the application should be strictly noted. And here the remark of an English writer may not be amiss, that "salt-petre and nitrate of soda, [and other mineral manures,] will always be considered as *doubtful* fertilizers, because they must be used before it can be ascertained, except by conjecture, what sort of season is to follow."

The Committee trust that the agricultural community will not long be obliged to grope their way in the dark with respect to these manures, but that the light of practical experiment will be poured upon their path, so that they may see what is really beneficial, what uncertain, and what of no value at all. The farmer will not rest satisfied with theories of the chemist, or with experiments in the laboratory: for though these be ever so correct, he sees no actual results in the production of crops, or benefit to land, and until these be perceived, he will prefer to go on in the old way, rather than to attempt something great, and after all to come out at the little end of the horn. The Committee regret, therefore, that

there have been no applications for premiums under the first class, from which something might be learned as to the actual value of the substances used as manures.

Under the second class, however, a statement has been submitted to them by Allen Putnam, Editor of the New England Farmer, whose remarks in that Journal and elsewhere have placed his name among the list of those whose noble object has been to advance the cause of agriculture. Mr. Putnam has probably the present year done more for that cause than in any former year. Having purchased a small farm in Hamilton, of that light kind of soil which prevails so extensively in that region, he has set to work in good earnest, without the aid of a large manure pile, to improve the quality of his land. The method by which this has been attempted will be seen by an examination of his statement. Such efforts deserve success, and cannot fail to ensure it. That he has already succeeded in accumulating and applying a large quantity of valuable compost manure, cannot be doubted. The exact value of the various composts prepared by him, as no experiments have been submitted, cannot be stated. While these would have been highly gratifying the present year, yet as the crops on Mr. Putnam's farm were severely injured by the hail storm on the last of June, it would have been difficult to arrive at any certain conclusions in the premises. Should the next season prove favorable, it is to be hoped that he will lay before the public the result of his experiments, particularly those of the application of spent or salt ley, of which he is making such copious use. This article being so much more bulky than other uncommon articles of manure, the expense of transportation will enter materially into the estimate of its value to the farmer.

As there were no other statements but that of Mr. Putnam, the Committee have concluded to recommend, as they cordially do, that the second premium of twenty dollars, under the second class, be awarded him.

For the Committee,

ALLEN W. DODGE.

Hamilton, Dec. 30, 1841.

ALLEN PUTNAM'S STATEMENT.

To the Committee on Compost Manures:

GENTLEMEN—I propose to give you a statement of the amount of compost applied on my small farm of forty acres, and of the quantity now prepared for use. As to premium, I have no desire to have you feel the slightest obligation to give any, unless the rules under which you act shall require you to recommend one.

It is known to some of your number, that I purchased my farm in the autumn of 1839, and that in the spring of 1840 I moved and repaired all the buildings on the place. Operations on the farm were commenced April 1st, 1841, with one hired man, and one yoke of oxen. In May, I purchased $10.50 worth of cow manure, 16 bushels of ground bones for $6, 5 bbls of poudrette $10, and 1200 galls. spent or salt ley $4, making in all $30.50. These articles, excepting the poudrette, mixed in very varied proportions with rotting hay and muck found in the old barn and hog yard, and with soil from under and around the old buildings, furnished 58 loads of compost, which were applied to the land in the spring and early summer.

Dung, with the articles around the old buildings,			20	loads.
Salt ley, with	"	"	27	"
Salt ley and bone,	"	"	4	"
Ashes and manure,	"	"	2	"
Salt ley and dung,	"	"	5	"

Besides the above, I used thirty loads of the materials from around the old buildings, unmixed. Also, 2 loads of ox manure, 5 barrels of poudrette, about 120 lbs of nitrate of soda, and one bushel of common salt, equal to 33 loads. In August, I spread *unmixed* 100 bushels of barilla ashes upon low grass lands, 3 loads. In September, I spread 100 bushels of barilla, mixed with soil upon land that I was then seeding to grass—compost, - 6 "

64 "

Amount brought up. - -	64 loads.
In the same month put upon winter rye, 12 bushels of bone, *unmixed*. Also, 12 bushels bone, mixed with soil and ley, - -	1 "
In October, spread upon grass lands, compost of loam, ox manure and hog manure,	11 "
Have applied of compost, - -	76 "
" " not compounded,	36 "

besides the poudrette, nitrate of soda, and salt.

At the present time I have on hand fit for use, three large heaps of soil, into which about 6000 gallons of ley have been put, and the heaps have been hove over two and one of them three times. My men think that these heaps contain about 150 loads, but as it is matter of estimation, I propose to call the quantity 100 loads.

Also 100 bushels of barilla in 4 or 5 loads of soil, - - - -	7 "
Also, two casks of lime and nine bushels of salt in two loads of soil and muck,	2 "
Now prepared, - - -	109 "
Also, there is at this time, in my barn cellar, a compost of muck, ox manure, horse manure, pig manure, and the emptyings of the sink drains and privy, 8 or ten loads, say -	8 "
	117 "

In addition to the above, I have about 90 loads of soil in beds for the reception of ley the ensuing winter, into which 1200 gallons has already been put. Probably, I have 100 loads of meadow muck, dug at this time, which is designed for use the ensuing spring and summer. Should the weather permit, I shall probably add to my heap of soil an hundred loads, in the course of a few weeks, and to my muck heap a still larger quantity. My loads are probably something above 35 bushels generally.

The stock on my farm was, from April to August, one yoke of oxen only. In August, I purchased two pigs; in October, three more, and recently have procured four heifers. A horse also is kept on the place at present, but

it is not mine, and is not employed in the work on the farm. From April 1st to the last of June, I hired but one man; since June 28, I have employed two.

Very respectfully yours,

ALLEN PUTNAM.

Hamilton, Nov. 26, 1841.

ON THE DAIRY.

The Committee on the Dairy, consisting of Dean Robinson, Joseph How, Nathaniel Felton, Jesse Sheldon, and William R. Putnam, report as follows:

The number of entries were few, compared with some former years; but the quality was good, equaling, if not exceeding that of any preceding year. Entries of June butter were made by Daniel Putnam, of Danvers, a tub of 41 lbs; Joshua Lovett, of Beverly, 33 lbs; Benj. Boynton, of Andover, 28 lbs and Wm. R. Putnam, of Wenham, 45 lbs, the whole of which was of fine appearance and high flavor.

They award the first premium of eight dollars to Joshua Lovett; the second of six dollars to Daniel Putnam, and the third of four dollars to Wm. R. Putnam. And of September butter, by Margaret Wardwell, of Andover, Nathaniel Felton, of Danvers, Peabody Illsley, of West Newbury, Joshua Lovett, of Beverly, and Phineas C. Balch, of Newbury,—this was also very good, and but little difference in the quality. The Committee were some time in determining to whom the premiums should be awarded, but after a careful examination, they award the first premium of ten dollars to Margaret Wardwell, the second of eight dollars to Nathaniel Felton, and the third of six dollars to Peabody Illsley.

Isaac Carruth, of Andover, entered six cheeses of small size, but very good, and he is entitled to the first premium of ten dollars. Four were entered by Miss Mary T. Thurlow, of West Newbury, which would have

entitled her to the second premium, had her statement been sufficient to have brought her claim within the rules of the society; but as the cheeses were large, fair and good, and managed by a young lady of only seventeen, the committee recommend to her a gratuity of five dollars. Which is respectfully submitted.

For the Committee,

DEAN ROBINSON.

Georgetown, Sept. 29, 1841.

JOSHUA LOVETT'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN—I present for your inspection a firkin of butter, containing thirty-three pounds, made in the month of June, it being a part of the butter from the milk of four cows, which had no other feed than a common pasture. The milk was preserved in a dairy cellar, well lighted and ventilated, and used exclusively for the purpose of the dairy; it was strained into tin pans, the pans well scalded each time they were used, and kept twenty-four hours, when the cream was separated, while the milk was perfectly sweet, and put in tin vessels, and occasionally stirred. It was churned twice each week, and when the butter was gathered, it was separated from the buttermilk and washed in pure cold water, and wrought with the hands; the washings repeated until the buttermilk was thoroughly extracted, so that the water was clear. Then it was salted in part, and set in a cool place in the cellar, or suspended in the well until the next day, when it was worked again with the hands, and salted to the taste with fine salt sifted through a sieve, and set in the cellar twenty-four hours, then packed down into the firkin in layers, sprinkling a little salt between each, and leaving a space around the sides of the firkin of half an inch until full; the space around

was then filled with a strong brine, well prepared, and kept in that state until this day.

Yours respectfully,

JOSHUA LOVETT.

Beverly, Sept. 22, 1841.

DANIEL PUTNAM'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN—I present for your inspection a firkin of June butter, containing 41 pounds.

Process of making:—The milk is strained into tin pans; it stands from 36 to 48 hours, according to the weather, when the cream is taken off, put into tin pails, and occasionally stirred. We churn twice a week, when the butter is gathered, the buttermilk is drawn off, the butter is rinsed in two waters, then is taken out, worked in part, salted, (one ounce of salt to a pound of butter,) and set aside for twenty-four hours, when the working is completed. It is then put into the firkin, and a considerable quantity of salt placed between the butter and the firkin. Kept in the cellar during the summer.

I have kept eight cows—made from the 1st of June to the 9th of July, 263 lbs—sold and used in the family, about 20 gallons per week during the time.

DANIEL PUTNAM.

North Danvers, Sept. 29, 1841.

WILLIAM R. PUTNAM'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN—I present for your inspection a firkin of June butter, containing about 45 lbs.

I was not aware, until it was too late, that the Trustees had made any alterations in the premiums for June

butter, since last year; therefore, I am unable to give so minute an account of the produce of our dairy as could be wished.

We milked ten cows, one of which was a heifer, with her first calf, and one calved early in the winter. We used what milk was needed for a family of eight persons, which was probably equal to the milk of one cow.

The process of making and keeping the butter was the same as given to the Committe last year, except that the cream was not left on the milk so long by 12 hours.

The greatest quantity of butter made in one week was 55 lbs, the least, 28 lbs. The whole quantity made from the 1st of June to the 9th of July is 249 lbs.

Yours respectfully,

WM. R. PUTNAM.

From R. C. Winthrop's farm,
Wenham, Sept. 28, 1841.

[NOTE. A statement made to the Committee by Margaret Wardwell, in regard to the parcel of butter for which a premium was awarded to her, has been accidentally mislaid.]

NATHANIEL FELTON'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN—I present for your inspection two boxes of September butter, containing 25 lbs, being a specimen of 885 lbs. made since the 20th of May.

Process of making:—The milk is strained into tin pans, it stands from 36 to 48 hours in a cool cellar, the cream is taken off, put into tin pails, and stirred every day. We churn once a week, during the hottest weather; the cream is placed in the well about twelve hours before churning. After it is churned, the buttermilk is thoroughly worked out, and the butter is salted to the

taste ; after standing about one hour, it is again worked over, and weighed, each pound separately.

This butter was made from ten cows ; two of them were heifers of the first calf; the feed was common pasturing, till the 20th of August ; since then they have had green stalks once a day. Eight of the cows calved in March, the other two in April. I have eleven in the family that are supplied with milk, and have sold one gallon a week.

NATHANIEL FELTON.

South Danvers, Sept. 28, 1841.

ISAAC CARRUTH'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN—The cheese which I offer for your inspection was made in the months of June and July. Having sold our milk a part of the season, we have not made as much as usual, but during the above mentioned months we made 135 lbs. new milk, and 173 lbs. four meal cheese, from the milk of five cows, (excepting what we used in our family, which took one cow's milk,) three of them gave milk the past winter. Their keeping has been grass only, and that dry and poor. The process of making is, to set the milk in a cool place at night, and in the morning warm it and add it to the new milk ; then allow one gill of rennet to six pails full of milk ; let it remain half an hour, then cut it with a thin wooden knife that will reach the bottom of the tub ; let it remain again until the whey begins to appear ; then place a strainer in a basket and dip it out carefully; turn it and cut it, but not too fast, and then place a follower with a stone above it, on the curd, that the whey may be all removed ; then put it in the cellar to remain until the same process is performed again ; then cut the two curds in small pieces, warm them in whey about ten minutes, salt it to the taste, press it two days, turning

it twice a day ; then put the cheeses in an airy room, turn and butter them once a day.

Yours with respect,

ISAAC CARRUTH.

Andover, Sept. 29, 1841.

MARY T. THURLOW'S STATEMENT.

To the Committee on the Dairy :

GENTLEMEN—The cheese I offer for inspection was made from the milk of seven cows, two of which were farrow. We have made use of milk in the family, consisting of eight. They have been kept in a common pasture, without any extra keep.

Weight of butter made, 182 lbs.

Weight of cheese, 862 lbs.

The process of making is the common method.

Respectfully,

MARY T. THURLOW.

ON SWINE.

The Committee on Swine REPORT :

That there has been a great falling off in the quality and number of the swine presented, from last year, which they are very sorry to see. No breeding sows were offered for premium.

The Committee award the first premium of five dollars, for the best boar, to Charles R. Julyn, of Rowley. For the next best boar they award the second premium of two dollars to Nathaniel Dorman, of Boxford.

For the best litter of weaned pigs, they award the first premium of six dollars to Phineas C. Balch, of Newbury. Second do. of $3, to Samuel Scott, of Rowley.

Respectfully submitted,

For the Committee,

T. E. PAYSON.

ON MULBERRY TREES.

The Committee on Mulberry Trees, REPORT:

That for the grounds on which the Society's premiums are asked they would respectfully refer its executive officers to the statements which the claimants have severally made, and which the Committee believe to be substantially correct. And in carrying out the trust committed to them they respectfully recommend that the

1st prem. of $15 be awarded to Geo. Hood, of Lynn.

2d do. $10 do. to Ira Hardy, for his orchard of white mulberry trees in Boxford.

That the first premium of $10 for the best nursery of mulberry trees, of not more than two years growth, be awarded to George Hood, of Lynn.

The second, of $5, to Temple Cutler, of Hamilton.

The Committee in submitting this report, would respectfully suggest, as a subject worthy of reflection, whether the object contemplated by the encouragement held out by the Society, by its premiums on mulberry trees, &c. would not be more fully realized, should the premiums for the future be mostly or even exclusively confined to awards on silk raised and reeled, and articles manufactured from such silk. This appears to your Committee to be the plan in which public patronage is most particularly needed. It is the point where the enterprise labors; while after the great number of successful efforts in raising the trees, and the small comparative expense at which it can be done, there really appears to your Committee, but little reason why further public patronage should be extended to that branch of the business. It is also a fact worthy of consideration that under the patronage of the Society there are now scattered over the County, a great number of trees of different ages which are yielding no profit. While not a few upon which premiums have been awarded have been cut down, or suffered by neglect to decay away, the foliage of which, if it could be brought into

use, would add very considerably to individual benefit, and of course to the public prosperity.

All which is respectfully submitted,

For the Committee,

G. B. PERRY.

GEORGE HOOD'S STATEMENT.

To the Committee on Mulberry Trees:

GENTLEMEN—Among the premiums offered by the Essex Agricultural Society, I find some for the cultivation of mulberry trees, silk, &c. I have a plantation of several thousand mulberry trees, of different varieties at my farm on Water Hill, in this town, to which I invite the attention of your Committee. With a view to render what little aid I can in calling public attention to the production of silk, I offer my plantation for the premiums.

No. 1. For the best plantation of mulberry trees, for which no premium has been awarded, at least one hundred trees of three years growth or more, the same being in a thriving condition, $15 00

For the second best, 10 00

2. For the best nursery of mulberry trees, at least 500 trees, not exceeding two years growth, 10 00

For the second best, 5 00

For the first two, Nos. 1 and 2, I have many more than the required number of trees, of suitable age and condition.

For Nos. 3 and 4, I shall, if successful in my experiments, endeavor to lay before the Society "a statement in writing of the facts relating thereto."

Yours, very respectfully,

GEORGE HOOD.

TEMPLE CUTLER'S STATEMENT.

To the Committee on Mulberry Trees:

GENTLEMEN—I offer for premium a nursery of one sixth of an acre, containing about 2000 *multicaulis mulberry trees*, now of two seasons growth. These trees were planted in June 1840, in single bud cuttings, on a very poor soil, without manure. Being planted late, very few of them attained to more than 6 or 8 inches high. So small were they, that I did not offer them for premium last year, being in a separate lot from those I did offer. I left part of them standing in the field through the winter without covering of any kind. My object was to ascertain their ability to bear the rigor of winter in this climate. Every tree, and every branch, was as sound in the spring as those taken up in the fall and put in the cellar, or, as our common fruit trees.

Many of these trees, together with the remainder of the same lot from the cellar, were transplanted last May to a better piece of ground, but which had no manure last year, and half a cord only of compost manure was strewed in furrows 3 feet apart into which the trees were set, the roots covered 2 or 3 inches deep. The whole labor on this nursery was one day ploughing, transplanting and manuring, and half a day ploughing between the rows and hoeing twice, including all pulling out of weeds. Every tree is alive and flourishing, averaging about 4 feet, none being less than $2\frac{1}{2}$, nor more than 5 feet high. I herewith exhibit several leaves from these trees, without having taken pains to select the largest.

I wish those who condemn the mulberry orchards of our County as not worth preserving, to examine for themselves the one now presented, which, after having been stripped of its foliage to feed two successive crops of worms in the fore part of the season, of 10,000 at

each crop, I think they would feel satisfied that at least 20,000 more might have been fed from the same, if eggs could have been procured.

My main object, gentlemen, in making this experiment, was to test the comparative hardiness of the multicaulis and the white mulberry. I had a large number of seedlings of the latter kind in the same enclosure; these were mostly killed by the frosts of the winter. Now the question remains, which of the two should we call the hardy mulberry tree? In the remarks I was kindly permitted to make to the Committee, the last year, I expressed a decided preference in favor of the multicaulis for making silk. I would now only refer those who may have any remaining doubts, and those, if any there be, who may have been led to be cautious as to adopting the views I so confidently entertained, or those who may have supposed these views may have emanated from an over-heated zeal, to examine the history and progress of the silk culture the past season throughout the United States, and see if they can find any thing in the thousand instances of complete success recorded, to create a doubt of the superiority of the tree in question.

TEMPLE CUTLER.

We hereby certify that we have this day examined the above mentioned nursery of Mr. Cutler, and residing near by, have seen his management of the trees, both this year and last, and are satisfied the above statement is correct. OLIVER WHIPPLE, Jr.
TRISTRAM APPLETON.

Hamilton, Sept. 28th, 1841.

ON SILK MANUFACTURED.

The Committee report that there were but two specimens of manufactured silk presented. One by Mrs. M. P. S. Parker, of Bradford, consisting of a half pound

of sewing silk and twist manufactured from cocoons raised by herself, and a small specimen of thread made of the floss taken from the cocoons. The other by Miss S. C. Hodges, of Newburyport, consisting of sewing silk put up in skeins and dyed with different colors; and also, a work bag made of silk of her manufacture.

The Committee regard these specimens as possessing much merit, being in their opinion fully equal and they think rather superior to any that they have been called to examine. They feel sorry that the quantity is not sufficient to justify them in recommending the high premiums of the Society to be awarded, but do recommend that a gratuity of $5 be given to Mrs. Parker, and $3 to Miss Hodges.

For specimens of sewing silk, some of which was colored, they recommend to Miss Priscilla P. Atwood, of Bradford, a gratuity of $2.

For the Committee,
G. B. PERRY.

MEHETABEL P. S. PARKER'S STATEMENT.

To the Committee on Silk Manufactured :

GENTLEMEN—I present for your inspection a half pound of sewing silk and twist, which I made from cocoons raised this year. It was reeled on the common clock reel and twisted on the high wheel. Also, a specimen of thread made from the floss of the cocoons carded, then spun from the end of the roll on the high wheel. In cleansing it I put some in a thin bag, and some loose in the kettle with white bar soap and water, and boiled it about an hour. That which was left loose is much the clearest. I cannot make a certain estimate of the time it took me, as I had to devote part of the time to my family. It would probably have taken two weeks if I had nothing to interrupt me.

MEHETABEL P. S. PARKER.

Bradford, Sept. 29, 1841.

ON BEES AND HONEY.

To this Committee were submitted two entries made, one by Charles S. Tenney, and the other by George Spofford, both of Georgetown, of bees and honey raised by them in rooms in the roof of their houses.

Your Committee visited both of these places, examined the rooms, the hives and the various fixtures, and are gratified to report that the experiment of disposing of bees in this manner seems to have been made with skill and attended with good success, and they are of the opinion if a few persons in the various towns and villages would adopt this plan it would be the means of greatly increasing the amount of honey produced in the county, and thus add something to the general prosperity and personal gratification of the community. We say *a few persons in each town*, because we apprehend for various reasons that a large number of such establishments could not be sustained, unless there be a resort to some means of increasing the resources from which these industrious and saving creatures gather their nectar.

For the purpose of encouraging a commendable effort, and with the confidence that the gentlemen will, with cheerfulness, exhibit their establishments, and give all necessary information to those who wish to adopt that way of raising honey, your Committee recommend a gratuity of $4 to each.

And they would take liberty to suggest to the officers of the Society the expediency of appointing a Committee, who should be requested to procure information respecting the amount of honey raised within the county, and to what extent this amount might with profit be increased, and whether any enactments of the State Legislature could be made which would encourage a general attention to the subject, who should be requested to report at the next annual meeting.

For the Committee,

G. B. PERRY.

ON FATTENING CATTLE AND SWINE.

The Committee on the Fattening of Cattle and Swine REPORT:

That they have received no claims for premiums on this subject; but inasmuch as it is one that should command more of the attention of our farmers, they beg leave to make a few suggestions for their consideration. Every well conducted farm will have a surplus of produce for the market in some form or other. If the grain, hay, and vegetables raised, are carried directly to the market, this will necessarily impoverish the farm, and diminish its power of production, unless care shall be taken to return a corresponding proportion of manure. By a judicious consumption of these articles on the farm, there is a certainty that the supply of manure will be well sustained. We believe it to be a very common practice with our best farmers to fat one or two pair of cattle, with several other animals, every season. We have no doubt that they find a good account in so doing. Since the practice of raising vegetables for fattening of cattle has come into use, those who have raised them have brought them to a good market in this manner. Particularly if their supply of Indian corn is such as to admit of mixing a moderate proportion of meal with such vegetables.

Although the farmer may not at first realize so much cash when he feeds out his crops to his cattle and swine, as when he deals them out by the bushel in the market;—still when he takes into view the time lost in attending upon the market—the deficiency of nutritive qualities on the farm, in consequence of these articles not having been consumed at home; and the uncertainty at times of finding a ready and advantageous sale;—he will do well at all times, to make arrangements for using a good proportion of his produce on his own farm. We do not advance these views as mere speculative theories, but as the result of our observation among good farmers; and we challenge the inves-

tigation of the fact in any town of the county, and have no doubt that those who are generally reputed to be the best farmers will be found to have practised in this manner. In relation to swine, there is much room for the exercise of a sound judgment in the selection of the animals to be fed. Far better is it to purchase animals of the best breed, at a high price, than to take those of an inferior class for nothing.

We hope that the liberal premiums offered on these subjects, as well as others, will induce some of our young farmers to make experiments, and let their experience be known, and in so doing they will bring honor upon themselves and a lasting benefit upon the whole community.

For the Committee,
J. W. ALLEN.

December, 1841.

ON SHEEP.

The Committee on Sheep respectfully REPORT:

The Society has lately offered no premiums for sheep at their annual exhibition, but a lot having been presented by Mr John Hale, of Boxford, the Committee was directed to notice them in such manner as they might deserve. But few sheep, comparatively with the other agricultural counties, are kept in Essex.* But it is probable that sheep might be made very profitable on many of our farms. The difficulty of restraining them in common enclosures is the great objection, but the South Down variety, it is said, has less propensity to ramble. We were gratified with the appearance of Mr. Hale's sheep, and submit to the Society whether it would not be advisable to offer encouragement for the exhibition of sheep at future exhibitions.

* By the statistical tables published in 1838, it appears that there were in Massachusetts, 374,616 sheep, of these only 5,827 belonged to Essex.

The wool is of superior quality, and the fleece is heavier by nearly one fourth than the average weight in Massachusetts. The Committee recommend that a gratuity of three dollars be paid to Mr Hale.

For the Committee,

DANIEL P. KING.

JOHN HALE'S STATEMENT.

To the Committee on Sheep :

GENTLEMEN:—The subscriber presents to you eleven sheep and six lambs, for premium. The whole 3-4 native breed, and 1-4 merino; they give 3 3-4 lbs. wool each per year, and have done so for three years past. I have about 15 lambs by 10 sheep per year. The wool I think is far superior to full blooded merino, for family use, and about double the quantity.

JOHN HALE.

Boxford, Sept. 29th, 1841.

ON CROPS.

The Committee on the Cultivation of Crops REPORT: That claims have been entered and statements made as follows :—

By Francis Dodge, of Danvers, for Corn.
" Enoch Dole, of W. Newbury, " "
" John Noyes, of Newbury, " Rye.
" William Williams, of Rowley, " Oats.
" John Noyes, of Newbury, " Onions.

The Society the present year have offered premiums for the best conducted experiment on crops of wheat, rye, oats, barley and Indian corn, on not less than one acre; for the next year, in addition to the above, premiums will be offered for the best conducted experiments in raising crops of carrots, onions, sugar beets, ruta baga, and mangel wurtzel, on one half acre, and

it is hoped that there will be many claimants for all these premiums. Farmers are desirous of ascertaining by what process such crops can be most successfully cultivated, and by no other means can this information be so readily and satisfactorily obtained, or so easily disseminated. They want to know what kind of soil, manure and cultivation are best adapted to each of these crops, and their own operations will in some measure be directed by the successful operations of competitors. It is therefore highly desirable that all the statements submitted should be plain and accurate. The soil, manure and variety of seed should be carefully stated, and all such observations and remarks as may tend to enlighten not only old farmers but learners of the art.

It is often interesting to have the means of knowing how large crops have been raised in the county. For the purpose of satisfying in part this curiosity, some extracts from Mr. Colman's first Report of the Agriculture of Massachusetts are here inserted. There have been raised in this county, to the acre,

"Of Wheat, 24, 25, and 32 bushels.

Of Indian Corn, 84, 90½, 90¾, 105, 110, 113, 115, 117¼ bushels.

Of Barley, 50, 51½, 52, 54 bushels.

Of Rye, 40, 56 bushels.

Of Oats, 1000 bushels on twenty acres, averaging 50 bushels to the acre.

Of Carrots, 849, 864, 878, 900 bushels.

Of Mangel Wurtzel, 924, 1340, at 56 lbs. per bushel.

Of Beets, 783 bushels.

Of English Turnips, 636, 687, 672, 751, 814 bushels.

Of Onions, 651." By Mr. Ware, of Salem, 900 bushels.

Some of these quantities appear large, but the amount which may be raised on a well manured and thoroughly cultivated acre would astonish any one who has not witnessed the experiment. A great cause of the want of success of many farmers is their attempt to cultivate too much land. To own or to cultivate an extensive

territory is a poor ambition. Our object should be to show how well and not how much we can till. When stern necessity, or good policy, or the dispensation of Providence has divided farms, we have often noticed that the several parts became more productive, and in such cases it is almost always true, that the half is better than the whole. Whenever a farmer becomes satisfied that he is cultivating too much land, he should sell off or lease his supernumerary acres, or turn them into pasture. The labor and expense of raising thirty bushels of corn is three quarters as much as of raising sixty bushels to the acre.

Many of our farmers have yet to learn the great advantage of cultivating extensively root crops, as a winter feed for stock. A large portion of our time and strength is expended in procuring this feed: it is now principally hay and corn fodder. The average quantity of hay to the acre is less than a ton and a half: but fifteen or even twenty tons of carrots and mangel wurtzel, are not very extraordinary. The expense of raising these roots is considerable, but commonly it does not exceed six dollars per ton. There cannot be a doubt that as food for cattle, two tons of them are worth at least as much as one ton of hay, and stock kept in part on roots, are in better health and condition, and make more valuable manure. It is satisfactorily ascertained that two bushels of carrots, and one of oats, are worth more for a horse than two bushels of oats: and next to Indian meal, boiled carrots are admitted to be the best food for swine. But with all these facts before us, but few farmers, comparatively, can be induced to cultivate beets, carrots, or the different varieties of turnips. In agriculture, the progress of improvement has always been less rapid than in any other of the arts of life: may it not always be so. The field is ample, and all that is wanted is active, spirited, and enterprizing laborers.

By the statements which follow this report, it appears that some of our enlightened yeomen are ambitious of leading off in this good undertaking of agricultural improvement, and the Committee tender them their thanks

for their readiness to communicate so much information to the common stock.

The Committee award—

To Mr. Francis Dodge, of Danvers, for his crop of Indian corn, 105 bushels, the premium of $10 00

To Mr. John Noyes, of Newbury, for his crop of winter rye, 40 bushels and 22 quarts, the premium of - - - - - 10 00

To Mr. William Williams, of Rowley, for his crop of oats, 59 bushels, a gratuity of - 7 00

Mr. Williams's statement was not considered sufficiently full and well authenticated to entitle him to the premium, but his crop of fifty-nine bushels to the acre, is creditable to his good management.

Mr. Dole's crop of corn was a very good one for this season; his statement is full and satisfactory, and the Committee hope that next year he will receive a premium; but as a second premium is not offered by the Society, they cannot award it. The difference in the weight of Mr. Dole's corn at the time of harvesting and one month after, is remarkable, amounting to about one seventh. In determining the comparative amount of corn crops, the condition as to shrinkage and dryness should not be forgotten. Mr. Noyes' crop of onions, for the amount of labor spent upon it, is very large, but the Society has not authorized the Committee to award a premium for this crop.

The Committee recommend that the statements of all the claimants be published. They are creditable to their authors, and honorable to the county. In a more favorable season, larger crops might be obtained, but the farmer, having done his part, must look to Providence for genial sunshine, and refreshing showers.

For the Committee,

DANIEL P. KING.

Dec. 30, 1841.

FRANCIS DODGE'S STATEMENT.

To the Committee on Grain Crops:

GENTLEMEN—I offer for premium a crop of Indian corn, obtained from one acre of land, and measuring one hundred and five bushels. The land was a dark loam, with a sub-soil of clayey gravel. I do not know the name of this corn, but some of the same was exhibited at the annual meeting in Georgetown. A crop of hay was taken from the land last season, after which it was ploughed and sown to turnips and corn. It had at that time, a dressing of three cords of manure from the hog-yard. In the spring, it was cross-ploughed, and harrowed, and four cords of manure from the cellar, were spread over, when it was again ploughed and furrowed at a distance of three feet four inches one way, and three feet six inches the other. Four loads of old manure were put in the hill; this manure was hove well for the purpose of getting it fine. It was planted the 8th and 11th of May, seven kernels were dropped, and from five to six stood. It received two hoeings; at each time the Cultivator was used. The 27th of September it was cut up, and shocked and harvested the last of October.

Expenses of the Crop.

The land I value at $100.

Interest of the land,	$6 00
Eight loads of manure, $6,	48 00
Heaving old manure,	1 00
Ploughing twice and harrowing,	6 00
Furrowing,	0 75
Putting out manure,	2 00
Dropping, covering and seed,	2 25
Cultivating and hoeing twice,	7 00
Cutting up and shocking,	2 00
Harvesting and husking,	9 00
	84 00

Value of Crop, &c.

Half the manure, - - -	$24 00
105 bushels corn, a 80 c. - -	84 00
$3\frac{1}{2}$ tons fodder, a $10, - - -	35 00
	143 00
From which deduct expense of crop, -	84 00
Nett profit,	$59 00

FRANCIS DODGE.

North Danvers, Nov. 1841.

I, James Flanders, measured the above corn, and testify that the number of bushels, as within stated, 105, was raised from an acre of ground.

JAMES FLANDERS.

This may certify, that I measured and staked off the above mentioned acre of ground.

ANSEL W. PUTNAM.

ENOCH DOLE'S STATEMENT.

To the Committee on Crops:

I submit the following statement in relation to the acre of corn I have entered for premium.

The ground is a sandy loam, upon the bank of Merrimack river, and occasionally flooded with water in high freshets, perhaps as often as once in two or three years. The ground was broken up in the spring of 1840—manured in the hills only, with four cords of rotten manure to the acre, and planted with corn; crop about equal to this year's.

In 1841, the hills were split and harrowed once, and seven cords of new manure spread upon the acre—the ground ploughed and harrowed. It was then furrowed

four feet by three and a half feet—four cords of rotten manure per acre put in the hills, and planted about the 15th of May—ploughed between the rows twice, and hoed three times; at the time of the last hoeing, the only object was to destroy the weeds. The stalks were cut about the middle of September, and the crop harvested about the 25th of October. There were about three and a half acres of land in the lot planted, one acre of which was measured off, and the following quantity of produce grew upon the lot measured and staked off by the surveyor, viz., 128 bushels of ears when husked, two bushels of which were shelled; weight of corn, 68 1-2 lbs., measured 38 quarts, weight of cobs 13 lbs, weight of whole in the ear Nov. 27, as per certificate of weigher, 4700 lbs. There were eighteen bushels of turnips and 40 bushels of pumpkins grown upon the acre aforesaid, in addition to the corn. There were only five bushels of small ears on the acre.

ENOCH DOLE.

W. Newbury, Dec. 1841.

I hereby certify that I measured off and put up stakes about one acre of corn on land of Enoch Dole. It was all in one piece, and laid off on the western end of the lot; at his request, I measured off the acre where I thought the corn was the best. I consider the crop nearly equal throughout, and think a half acre might have been selected together better than the acre taken would average. MOSES NEWELL.

JOHN NOYES'S STATEMENT.

To the Committee on Crops:

Newbury, Nov. 10th, 1841.

Gentlemen—I submit to you the following statements with regard to my crops, which are as follows:—onions

and winter and spring rye. The onions were grown on a yellow loam, on a gravel bottom,—has grown onions several years previous,—was replenished with twelve cords of manure ploughed in in the fall of the year 1840; the following spring it was harrowed, and drilled in rows 14 inches apart, and two and a half lbs. of seed sown with a machine on the same. It was weeded but once by hand, but hoed several times—harvested and sold in September and October—the produce of which was six hundred and sixty-four bushels.

The rye was grown on a black loam on a clay bottom; has grown potatoes three years previous—the manure ploughed in; is inclosed by itself, containing two acres one hundred and six rods. The produce in 1840 was two hundred bushels per acre. The manure applied was eight cords per acre. The last of September, 1840, I sowed one and a half bushels rye on one acre; the remaining part I sowed with spring rye about the middle of April. The winter grain was reaped the 20th of July, and threshed within ten days after; the product of which was forty bushels and twenty-two quarts, independent of eight quarts of small grain. The spring grain was reaped and threshed the beginning of August; the produce was forty-two bushels and twenty-five quarts.

Yours respectfully,
JOHN NOYES.

This may certify that we assisted in cultivating, marketing, and measuring the above crop of onions, and that the above statement is correct.

GILES A. NOYES.
JUSTIN NOYES.

Essex, ss. Nov. 16, 1841.

Personally appeared Giles A. Noyes and Justin Noyes, and made oath to the truth of the foregoing statement, before me, STUART CHASE,
Justice of the Peace.

This may certify that I assisted in measuring the above crop of winter grain, and that the above statement is correct. JOHN J. ADAMS.

Essex, ss. Nov. 16th, 1841.

Personally appeared the above named John J. Adams, and made oath to the truth of the above statement, before me. STUART CHASE,
Justice of the Peace.

This may certify that I assisted in measuring the above crop of spring grain, and that the above statement is correct. WM. W. PERKINS.

Essex, ss. Nov. 16th, 1841.

Personally appeared the above named William W. Perkins, and made oath to the truth of the foregoing statement before me. STUART CHASE,
Justice of the Peace.

This will certify, that upon the request of the subscriber, I surveyed the land where he raised his crops of grain and onions. The onion plat contained one acre and six rods; the rye field contained two acres and a hundred and six rods; one acre with winter grain, the remainder with spring grain.

TRISTRAM LITTLE, *Surveyor.*

WILLIAM WILLIAMS'S STATEMENT.

To the Committee on Crops:

GENTLEMEN—The field of oats which I cultivated the present season, contained one acre and fifty-four rods. The produce of the lot was seventy-eight and a half bushels of oats; it was measured by Mr. Daniel Spiller

and Mr. Rufus Lothrop. The field was planted with corn last season, applying about eight cords of barn-yard manure; this season I spread on about four cords of barn-yard manure. I ploughed it the sixth of May and sowed it the tenth of May. I sowed four bushels on the lot; when my oats were got in they were very dry, and those that saw them thought there were as many shelled out on the ground as were sowed, for they came up very thick, and made good fall feed.

Yours respectfully,
WM. WILLIAMS.

Rowley, Dec. 16, 1841.

ON FRUITS, VEGETABLES, AND FLOWERS.

The exhibition of fruits and vegetables to-day was highly gratifying to your Committee, as it evidently showed an increasing interest in this department of cultivation. The agricultural and horticultural exhibitions of the present day may be made as useful in our country as they have been in Europe. But in order to render them of the greatest possible value, there should always accompany the specimens sent, (when it is known,) the method of culture, soil, &c. &c. The articles, with the names of the contributors, are placed in the order in which they were sent.

A basket of Rose Chasselas, Sweet Water, and Black Hamburgh grapes, green-house culture, and green melons, open ground culture, from P. Dodge, Salem.

Four kinds of apples and two of pears, from Erastus Ware, Salem.

Native Rareripes, from Joseph Savory, East Bradford.

St. Michael pears, and monstrous Bell-flower apples, from Daniel Adams, 3d, Newbury.

Large native peaches, grapes, and apples, from Josiah Newhall, Lynnfield.

Isabella grapes, prematurely ripe in consequence of taking off the leaves, (which is a practice to be deprecated, as leaves are to plants analogous to the lungs in the human system, and are consequently necessary to the full developement of the fruit;) from John B. Bateman, Georgetown.

President and Boxford Stump Apples, from Peabody Russell, Boxford.

Apples, 11 varieties, peaches and Isabella grapes, from James Peabody, Byfield.

Apples, 12 varieties, 5 kinds pears, quinces and peaches, Andrew Dodge, Wenham.

Apples, 10 varieties, Clingstone peaches, quinces and pears, Moses Pettingill, Topsfield.

One basket of fine Clingstone peaches, from Daniel N. Breed, Lynn.

Fine Sweetwater grapes and apples, from H. A. Breed, Lynn.

Twenty varieties of pears, mostly new fruits, from J. M. Ives, Salem.

Two bouquets of Dahlias from Mrs. George Spofford, and one from Mrs. Charles S. Tenney, both of Georgetown

Fourteen varieties of fine pears, from E, Emmerton, of Salem.

Three varieties of apples, from Ephraim Wood, Salem.

Fine large variety of the Blood peach, for preserving, and also White grapes, J. B. Sargent, West Amesbury.

Native blue plums, for preserves, from B. Winter, Georgetown.

Twelve varieties of apples, from S. P. Fowler, Danvers.

Orange tree in pot from seed, Mrs. Perry, Georgetown.

Bouquet of cut flowers, from Susan D. Breed, Lynn.

Fourteen varieties of pears, all fall eating fruit, R. S. Ives, Salem.

Vegetables, &c.

Purple egg plant, an edible fruit grown from seed sown in the open ground the last of May, the soil being highly manured with ashes; this is a popular vegetable in the southern markets; raised by A. G. Bradstreet, North Danvers.

Belgian White carrot, from P. Dodge, of Salem ; these were the average of the crop in size ; with regard to the quality of this new carrot, we are not yet satisfied of their superiority over the long orange ; they are, however, more easily harvested, growing as they do, from two to four inches out of ground ; others of the same kind, were sent in by Erastus Ware.

Yellow Globe mangel wurtzel ; nothing accompanied these relative to their superiority, if they have any, over the common variety ; sent by Allen Putnam, Wenham.

Two kinds of potatoes, raised from seed, and large mammoth pumpkin, from J. Savory, Bradford.

The samples of corn exhibited were from Francis Dodge, Danvers, Oliver Kilham, Boxford, John Preston, Danvers, William Williams, Rowley, and Samuel Longfellow, Newbury.

Pure Autumnal Marrow squash, from southern seed, Andrew Dodge, Wenham.

Mangel wurtzel and Sugar beet, from Moses Pettingill, Topsfield.

Marrow and Lima squash, (mixed) weighing 70 lbs, James L. Wales, Bradford.

Large yellow onions, Samuel P. Jewett.

Sugar beet, mangel wurtzel and solid celery, Charles F. Putnam, Salem.

Cucumber and apple, grown in bottles, Elijah Kimball, Georgetown.

Your Committee recommend the following gratuities :

To James Peabody, of Byfield, two dollars.

To Moses Pettingill, of Topsfield, H. A. Breed, and D. N. Breed, of Lynn, P. Dodge, Salem, Mrs. George Spofford, Georgetown, R. S. Ives and Erastus Ware, of Salem, one dollar each.

To Mrs. Charles S. Tenny, and B. Winter of Georgetown, E. Wood, of Salem, S. P. Fowler, Danvers, Andrew Dodge, Wenham, E. Emmerton, Salem, John B. Bateman, Georgetown, J. Savory, Bradford, A. G. Bradstreet, Danvers, J. B. Sargent, West Newbury, Stephen C. Thurlow, do., and Miss Susan D. Breed, of Lynn, fifty cents each.

An individual at the exhibition expressed his surprise that the same varieties of apples raised in West Cambridge and around Boston, were so much larger than those he was accustomed to see grown in Essex county. The cause is obviously not in the natural quality of their soil, but in their high manuring and more severe pruning. There are farmers in West Cambridge who apply one hundred dollars worth of manure annually to an acre of land. The size, as well as the quality of apples depend more upon the nature of the soil upon which they are grown than is generally supposed; for while the Baldwin, Roxbury Russet and Yellow Bellflower apples, fruit well upon soil of a light, loamy nature; the Hubbardston Nonesuch, Pickman Pippin, Piper, and some other varieties, require that of a deep clayey loam.

Mr. S. P. Fowler submitted the following resolve:

Voted, That the Committee on Fruits and Flowers be requested to furnish for publication in the Society's next annual Report, a list of fruits best adapted for culture in our county, together with a few flowering shrubs.

Respectfully submitted,

For the Committee,

JOHN M. IVES.

In forming a collection of fruits, it is better to be contented with a few good kinds, that produce well in most seasons, than to plant those, for the sake of variety, of which perhaps a crop may be obtained once in three or four years; we should endeavor also to fix upon those which are found to suit our latitude; many varieties of apples, which are first rate in our southern cities, for example the Newton Pippin and Pennock's Winter, are, when grown here, inferior to the Lyscom, Fall Harvey, and many others. Attention should also be paid to selecting sorts suitable to their destined soils, as some that would succeed well in a strong clay loam, would languish in a poor, light, sandy soil, and others that would ripen to perfection in the enclosed yards of our

populous cities, would not mature in our open fields. There are also some situations where the apple and pear thrive well, while the cherry and plum do not ; the cultivation of the two former should therefore be encouraged, while that of the latter should be only so to a limited extent. The Baldwin, Bellflower, Swaar, and some other varieties of apples, do well in a soil of a light, loamy nature, while the Ribstone Pippin, Hubbardston Nonesuch, Piper, and Pickman Pippin, require that of a strong, clayey, and retentive loam.

The following list of apples which answer well in our locality, comprises some of the best summer, autumn, and winter varieties for New England culture.

APPLES.

Early Harvest, or July Flower, ripens in July and August.
Early Bough, or Washington, of N. H. ripens in July and August.
Summer Permaine, ripens in Sept.
Fall Harvey, (fine) " " and Oct.
Cloth of Gold, Cressy apple of Beverly, ripens in Oct.
Williams's Favorite Red, " Aug.
Boxford Stump, ripens in Sept. & Oct.
Lyscom, (superior) " Oct.
Porter, (handsome fruit) ripens in Sept. and Oct.
Ribstone Pippin, (English apple) ripens in Dec. to Feb.
Rhode-Island Greening, ripens from Nov. to Feb.
Baldwin, " Dec. to Feb.
Yellow Bellflower, " Dec. to Jan.
Swaar, (great bearer) ripens from Jan. to March.
Danvers or Eppes Sweeting, ripens from Jan. to March.
Roxbury Russet, ripens from Feb. to April.
Hubbardston Nonesuch, (fine fruit) ripens from Oct. to Dec.
Minister, (very superior) ripens from Nov. to Feb.

PEARS.

Madaleine, ripens in July and Aug.
Bloodgood, (fine) ripens in Aug.
Summer Franc Real, " Sept.
Bartlett, (superior) " "
Dearborn's Seedling, (fine) " Aug.
Cushing, " Sept.
Seckel, " Oct.
Belle Lucrative, (superior) " "
Surpasse Virgalieu, (") " "
Buffum, (great bearer) " Sept.
Washington, (beautiful fruit) ripens in Sept.
King of Wurtemberg, (large and fine) ripens in Oct.
Urbaniste, (melting fruit) ripens in Nov.
Napoleon, (bears young and abundantly) ripens in Oct.
Marie Louise, " Nov.
Bleker's Meadow, " "
Dix, " "
Duchesse of Angeuleme, (large & fine) ripens in Nov.
Winter Nelis, ripens from Dec. to Feb.
Lewis, (great bearer) ripens in Dec.
Josephine, (very sugary and fine) ripens in Dec.
Easter Beurre, ripens from Feb. to May.

Iron or Black pear of Worcester,
Catilac,
Doctor Hunt's Winter,
} FOR BAKING.

PLUMS.

Green Gage, ripens in Aug, and Sept.
Bolmar's Washington, ripens in Sept.
Italian Damask, " Aug.
Coe's Golden Drop, ripens in Oct. and Nov.
Blue Imperatrice, ripens in Oct. and Nov.
Cruger's Seedling, " Sept. and Oct.
Sharp's Emperor, ripens in Sept.
Imperial Gage, " Aug.

PEACH

Early Royal George,
Early Red Rareripe,
Cooledge's Favorite,
Brattle's White or Snow peach.
Noblesse,
Vanguard,
Hastings's Rareripe.

CHERRIES.

Black Tartarian,
Early May Duke,
Honey Heart,
Black Eagle,
Mottled Biggareau,
Napoleon do.
Black Heart,
Hyde's Seedling.

CURRANTS.

White Dutch and Morgan's Large Red.

ORNAMENTAL TREES AND FLOWERING SHRUBS.

Large Trees.—Class 1.

Abele, or Silver Leaf.
European Sycamore,
Weeping Willow,
Butternut,
Elm,
Lime, or Linden,
Scarlet Maple,
Sugar do.
Tulip Tree,
&c. &c.

Smaller Trees.—Class 2.

Siberian Crab Apple,
Curled Mountain Ash,
Double Flowering Cherry,
Fringe Tree,
Laburnum,
Double Flowering Peach,
Buffalo Berry,
Scotch Larch, &c.

Shrubs and Trees of Low Growth.—Class 3.

Rose Acacia,
Double Flowering Almond,
Althea, or Rose of Sharon,
Carolina Allspice,
White Caucasian Honeysuckle,
Cornelian Cherry,
Persian Lilac,
Snow Ball, or Guelder Rose,
Tree Pæonias, (of sorts)
Japan Globe Flower,
Hardy Roses, (of sorts.)

THE JACKSON POTATO.

It was the intention of the Committee to have brought forward to the exhibition in Georgetown, a new potato which a member of your Committee received from

Franklin county in this state, through Dr. J. E. Fisk, of Salem, as the best in quality, and nearly if not quite as prolific as the Long Red or River Plate, which is so well known in our county; but being a late potato, they were not harvested in season. It is the opinion of those who have raised them the past season, that they are in quality and bearing superior to any other variety cultivated in our vicinity. The following letter from a farmer in Beverly, who planted two barrels of this kind late in the spring, was addressed to the Chairman of the Committee, is here inserted.

Beverly, Dec. 27, 1841.

MR. JOHN M. IVES:

Dear Sir—The potatoes which I had of you I planted on a rich, loamy soil, which had been broken up a week or two previous, with a good shovel full of barn-yard manure in each hill, which was all that was used on the land. In consequence of my thinking them to be early potatoes, they were not planted till the first or second week in June, but notwithstanding the lateness of the season in which they were planted, and the remarkably dry summer, they yielded as well as the Long Red, *if not better;* although they did not attain to much more than half their usual size. In quality, they are fully equal to the best Eastern Chenangoes, if not even superior to them. I am decidedly of the opinion, that, taking into consideration their superiority, both in quality and in their yield, they are the *best* and most profitable potato for cultivation which have ever come under my observation.

Respectfully yours,
LUKE MORGAN.

This potato in form resembles the Chenango or Mercer, and from the description of a new potato which was cultivated the past season, in the county of Worcester, and there called the Snow Ball, from its whiteness after cooking, we apprehend it is one and the same.

ON DOMESTIC MANUFACTURES.

The Committee on Domestic Manufactures, having attended to the duty assigned them, beg leave to REPORT :

The number of articles entered in this department was not so large as that of the past year ; but in the taste and skill displayed in their execution, no falling off was perceptible to your Committee. On the contrary, some of the wrought pieces,—the fairy work of fairy fingers,—seemed to your Committee more like the productions of foreign countries than those of our own firesides. By some it may be thought that these articles of taste are hardly worthy of the time and pains bestowed upon them ; but to your Committee it seems, that whatever contributes to the pleasure of the eye, whether in works of art or nature, is highly deserving of encouragement. If the moral influence of flowers be, as we all know it to be, so powerful and salutary, we see no reason why the faithful imitation of flowers on carpets and rugs and quilts and other coverings, may not also be beneficial. How many are the virtues called forth too in their execution ! The good wife, or her fair daughter, saves all the fragments of cloth for a carpet or a rug—at the same time she is learning or at least practising that most useful virtue, frugality. Like the bee she devotes hours and hours to construct her curious fabric, and like the winged honey-merchant, she is exhibiting a pattern of patience and industry. Whether, therefore, in the benefits or the pleasures they contribute to domestic life, the description of wrought articles to which we have alluded, are well entitled to the continued patronage of this Society, and we trust that the rewards which it bestows upon them will continue to excite competition among the fair fingers of Essex county, till in every house will be seen a trophy of success.

The number of rugs this year exhibited was about equal to the number of towns in the county—though many of

them were from the same town, and it was with difficulty the committee could decide upon their priority of merits. When they come to equal the number of families in the county, the Committee will need a couple of weeks or at least days, instead of a couple of hours, to examine and estimate their proportionate excellence. The muslins and laces were also of superior skill and elegance. Many of the other productions evinced a laudable spirit of emulation, proving that the ladies of Essex county will at the annual cattle show, pull their part of the yoke, and not be outdone by those of the hardier sex.

The Committee have therefore unanimously awarded the following premiums and gratuities, viz:

For a piece of wrought carpeting, to Mrs. Abby Welch, of Newburyport, a gratuity of $3 00

For a piece of carpeting, to Matilda Plummer, of Newbury, a gratuity of . . 1 00

Hearth Rugs.

To Mrs. Ann C. Foster, of Beverly, 1st premium, 3 00
To Mrs. Theron Johnson, of Andover, 2d premium, 2 00
To Mrs. Eben Meacom, of Danvers, a gratuity of 1 00
To Sarah Ann Emery, of Newburyport, do. 1 00
To Mary Dorr, of Newburyport, do. 1 00
To Sarah L. Steele, of Haverhill, do. 1 00
To Mrs. Dr. Nichols, of Danvers, do. 1 00
To Miss Elizabeth Coffin, of Newbury, do. 1 00
To Miss Ann Maria Gerrish, of Newbury, do. 1 00
To Miss Mary Jane Harun, of Beverly, do. 1 00
To Mrs. Dorcas Hale, of Newbury, do. 1 00
To Miss M. B. Chadburn, of Newburyport, do. 1 00
To Mrs. John M. Stocker, of Beverly, do. 1 00
To Mary Ann Choate, of Essex, do. 1 00
To Sarah D. Tenny, of Bradford, do. 1 00
To Nancy M. Richards, of Newburyport, do. 1 00
To Lucy Peck, of Hamilton, do. 1 00
To Louisa Fryes, of Andover, do. 1 00
To Caroline Coffin, of Newburyport, do. 1 00
To Mrs. Thomas Hills, of W. Newbury, do. 1 00
To Mrs. P. Newman, of Newbury, do. 1 00

Mrs P. Sawyer, of Boxford, for the best piece of woolen frocking, a premium of . 2 00

Mrs. Ann Cleaves, aged seventy years, of Wenham, for six pair wrought woolen hose, a premium of . . . 2 00

Mrs. Mary Titcomb, of Newburyport, for 4 pair silk half hose, a gratuity of . 1 00

Miss Mary Howe, of Methuen, for one pair silk hose, a gratuity of . . 1 00

Sally E. Griffin, of Beverly, for 2 pair of worsted hose, a gratuity of . . 1 00

Mrs. Jacob Osgood, of Andover, for 24 yards of linen cloth, the first premium of . 4 00

Miss Mehitable Ballard, of Andover, for 2 pair linen sheets, a gratuity of . . 1 00

Elizabeth Adams, of Byfield, for linen table cloths and napkins, a gratuity of . 1 00

Mrs. M. Ballard, of Andover, for a counterpane, the 2d premium of . . 2 00

Mary Foster, of Beverly, for a counterpane, a gratuity of . . . 1 00

Abigail M. Harding, of Haverhill, for a counterpane, a gratuity of . . 1 00

Lydia N. Dole, of West Newbury, for a counterpane, a gratuity of . . 1 00

Lydia N. Dole, of Newbury, for a black lace veil, the first premium of . . 3 00

Sarah O. Bagley, of Amesbury, for four wrought lace collars and edging, the 2d premium of 2 00

Mrs. R. Worcester, of Danvers, for wrought lace handkerchiefs, a gratuity of . 1 00

Hannah J. Putnam, of Danvers, for a black lace veil, a gratuity of . . 1 00

Mrs. Myra Abbot, of Bradford, for a wrought cape, a gratuity of . . 1 00

Mrs. John Pearson, of Newburyport, for an embroidered mantilla, a gratuity of . 1 00

Mary Ann Choate, of Essex, for a worked table covering, a gratuity of . . 2 00

Susan R. H. Nelson, of Georgetown, for a worked table cover, a gratuity of . 1 00
Mrs. L. L. Dearborn, for a rich centre-table covering, wrought in imitation of German crewel work, a gratuity of . . 5 00
Miss Harriet Ayer, of Danvers, for wrought cricket covers, a gratuity of . 1 00
Eliza M. Nelson, of Georgetown, for wrought cricket covers, a gratuity of . 50
Mary Ann Caldwell, of Newbury, for wrought cricket covers, a gratuity of . 50
Harriet M. Saunders, of Newburyport, aged 11 years, for a worked cricket cover, being the best specimen of work by a child under 12 years of age, the 1st premium, . 3 00
Sarah Barker, of Andover, for a worked sampler, she being but 9 years old, the 2d premium of 2 00
Eliza Kilham, for straw mats, a gratuity of 50
Mary A Renton, of Bradford, for a net shawl, a gratuity of . . . 1 00
N. S. Vance, of Bradford, for calf-skin boots, a gratuity of . . . 1 00
John Hale, of Boxford, for 1 pair cow-hide brogans, a gratuity of - - 50
Greenleaf Cheney, of Rowley, for work-box, spool stands and swifts, a gratuity of 1 00
J. B. Sargent, of Amesbury, for one pair steel springs, agratuity of . . 1 00
E. Smith, of Beverly, for a syringe to destroy insects, a gratuity of . . 1 00
John Harriman, of Haverhill, for a churn, a gratuity of . . . 1 00
J. C. Page, of Danvers, for Daguerreotype miniatures, a gratuity of . . 1 00
Elizabeth Trask, of Beverly, for two shell card racks, a grutuity of . . 1 00
Catharine S. Hardy, of Bradford, for a work bag, a gratuity of . . . 50
Mrs. Worcester, of Danvers, for specimens of hair work, a gratuity of . . 2 00

Angelina Kilham, of Boxford, for samples of farmers' mittens, . . 1 00
Lorintha Curtis, of Boxford, for a bonnet made from down of sea-fowl, a gratuity of 50
John Kimball, of Georgetown, for six pieces of seal-skin leather, a gratuity of . 1 00
W. and M. Black, of Danvers, for specimens of leather, a gratuity of . . 1 00

All which is respectfully submitted,
For the Committee,
ALLEN W. DODGE.

Georgetown, Sept. 29, 1841.

LIST OF

PREMIUMS AND GRATUITIES

AWARDED IN 1841.

Joshua Lovett,	Beverly,	For June butter	$8,	1st prem.
Daniel Putnam,	Danvers,	"	6,	2d "
William R. Putnam,	Wenham,	"	4,	3d "
Margaret Wardwell,	Andover,	September butter,	10,	1st "
Nathaniel Felton,	Danvers,	"	8,	2d "
Peabody Illsley,	W. Newbury,	"	6,	3d "
Isaac Carruth,	Andover,	Cheese,	10,	1st "
Mary S. Thurlow,	W. Newbury,	"	5,	gratuity.
Perley Tapley,	Danvers,	Ploughing, double teams,	12,	1st prem.
Joseph Symonds,	Middleton,	" "	10,	2d "
Ralph H. Chandler,	Andover,	" "	8,	3d "
Joseph Goodridge,	W. Newbury,	" "	6,	4th "
Joseph C. Putnam,	Danvers,	" single teams,	10,	1st "
Allen Putnam,	Hamilton,	" "	8,	2d "
William R. Putnam,	Wenham,	" "	6,	3d "
Perley Tapley,	Danvers,	" "	4,	4th "
Seth Kimball,	Andover,	" horse teams,	8,	1st "
Perley Tapley,	Danvers,	" "	6,	2d "
Josiah Crosby,	Andover,	Bull,	10,	1st "
Enoch Silsbee,	Bradford,	"	5,	2d "
George Hood,	Lynn,	"	3,	gratuity.
Hobart Clark,	Andover,	Working oxen,	10,	1st prem.
William B. Cole,	Boxford,	"	7,	2d "
Josiah Crosby,	Andover,	"	5,	3d "
Daniel Andrews,	Boxford,	Steers, 3 years old,	7,	1st "
John Preston,	Danvers,	" "	5,	2d "
Amos Berry,	Andover,	" 2 years old,	6,	1st "
Ralph H. Chandler,	"	" "	4,	2d "
Peabody Russel,	Boxford,	Fat oxen,	15,	1st "
			$212	

		Amount brought over,	$212,	
Joseph Kittredge,	Andover,	Fat oxen,	10,	2d prem.
Samuel Jenkins, jr.	"	"	5,	3d "
Joshua Hale,	Rowley,	Milch cow,	10,	1st "
David S. Caldwell,	Newbury,	"	3,	gratuity.
George Spofford,	Georgetown,	"	3,	"
Moses Pettingill,	Topsfield,	Heifer,	5,	1st prem.
David S. Caldwell,	Newbury,	Heifers,	3,	gratuity.
Parker Pillsbury,	Georgetown,	Heifer,	1,	"
David Jewett,	"	"	1,	"
John Hale,	Boxford,	Sheep,	3,	"
Charles R. Taylor,	Rowley,	Boar,	5,	1st prem.
Nathaniel Dorman,	Boxford,	"	2,	2d "
Phineas C. Balch,	Newbury,	Pigs,	6,	1st "
Samuel Scott,	Rowley,	"	3,	2d "
Charles T Tenney,	Georgetown,	Management of bees,	4,	gratuity.
George Spofford,	"	" "	4,	"
Mrs. Nath'l Parker,	Bradford,	Silk,	5,	gratuity.
S. C. Hodges,	Newburyport,	"	3,	"
Priscilla Atwood,	Bradford,	"	2,	"
Allen Putnam,	Hamilton,	Experiments on manures,	20,	2d prem.
George Hood,	Lynn,	Mulberry nursery,	10,	1st "
Temple Cutler,	Hamilton,	"	5,	2d "
Francis Dodge,	Danvers,	Crop of corn,	10,	1st "
John Noyes,	Newbury,	" rye,	10,	1st "
William Williams,	Rowley,	" oats,	7,	gratuity.
George Hood,	Lynn,	Plantation of mulberry trees,	15,	1st prem.
Ira Hardy,	Boxford,	" "	10,	2d "
By the Committee on Domestic Manufactures, See pp. 79–82,			85,	
By the Committee on Fruits and Flowers, See pp. 71–77,			20,	
			$482	

BY THE MASSACHUSETTS SOCIETY FOR PROMOTING AGRICULTURE.

George Hood,	Lynn,	Bull,	$15,	1st prem
Enoch Silsbee,	Bradford,	"	6,	2d "
Horatio C. Merriam,	Tewksbury,	Milch cow,	15,	1st "
" "	"	"	6,	2d "
Moses Pettingill,	Topsfield,	Heifer,	5,	1st "
Hobart Clark,	Andover,	Working oxen,	12,	1st "
William B. Cole,	Boxford,	"	6,	2d "
Daniel Andrews,	"	Steers,	10,	1st "
Joshua Hale,	Rowley,	Native cow,	10,	1st "
			$85	

PREMIUMS OFFERED

BY THE

ESSEX AGRICULTURAL SOCIETY,

FOR

1842.

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1. MANAGEMENT OF FARMS.

For the best cultivated farm of not less than fifty acres, exclusive of woodland, regard being had to particular improvements within a few years past, the quantity of produce, the manure, and expense of cultivation, with a statement in writing of all facts in relation to the same.

1st premium,	-	-	thirty dollars.
2d premium,	-	-	fifteen dollars.

☞Notice of intention to claim these premiums must be given to the Secretary on or before the 30th of June, the present year.

2. DAIRY.

1. For the best produce of butter on any farm within the county of Essex, from the 1st of June to the 9th of July inclusive, in the present year, a sample not less than 25 lbs. to be exhibited, with a particular statement of the number of cows, quantity of butter, method of making and preserving it, &c. &c.

1st premium,	-	-	ten dollars.
2d premium,	-	-	eight dollars.
3d premium,	-	-	six dollars.

2. For the best produce of butter on any farm within the county of Essex, in the four months next following the 20th of May, the present year, a sample of not less than 25 lbs. to be exhibited, *quantity* as well as *quality* to be taken into view; with a full account of the manner of feeding the cows, and the general management of the milk and butter.

1st premium,	- -	ten dollars.
2d premium,	- -	eight dollars.
3d premium,	- -	six dollars.

3. For the best produce of new milk cheese, in proportion to the number of cows producing it, on any farm within the county of Essex, in the months of July, August, and September, of the present year, a sample of not less than 50 lbs. to be exhibited, with a statement of the method of making and preserving the same

1st premium,	- -	ten dollars.
2d premium,	- -	eight dollars.

NOTE. It will be observed that these premiums are offered for the *best produce on the farms*, and not simply for the best specimen exhibited. Claimants will therefore be requireed to be particular in keeping an account and preparing a statement of the entire produce within the times mentioned.

3. TURNING IN CROPS AS A MANURE.

For the most satisfactory experiment of turning in crops as a manure, either *green* or *dry*, on not less than one acre of land, a detailed account of the whole process to be given in writing.

1st premium,	- -	twenty dollars.
2d premium,	- -	ten dollars.

4. FOREST TREES.

1. For the best plantation of either of the following species of forest trees, viz:—white oak, yellow oak, locust, birch, white ash, maple or walnut, in the third

year of their growth, and not less than one thousand trees, thirty dollars.

2. For the best do. do. do. not less than six hundred trees, fifteen dollars.

3. For the best do. do. do. not less than four hundred trees, ten dollars.

NOTE. For an explanation of these premiums, see remarks in former years.

5. CULTIVATION OF MULBERRY TREES, SILK, &c.

1. For the best plantation of mulberry trees for which no premium has been awarded, at least one hundred, of three years growth or more, the same being in a thriving condition, - - - fifteen dollars.

For the second best, - - ten dollars.

For the third best, - - five dollars.

2. For the best nursery of mulberry trees, at least five hundred, not exceeding two years growth, ten dollars.

For the second best, - - five dollars.

3. For the best conducted experiment in the production of silk, the result to be shown in the exhibition of the article, the same to be exhibited either in cocoons reeled or manufactured, with a statement in writing of the facts relating thereto, - ten dollars.

For the second best, - - five dollars.

6. IRRIGATION.

For the most satisfactory experiment for increasing the crops upon not less than one acre of land, by irrigation, with a detailed account of the manner, expense, and benefits produced, - twelve dollars.

For the second best, - ten dollars.

7. IMPROVING WET MEADOW OR SWAMP LANDS.

For the best conducted experiment in reclaiming wet meadow or swamp lands, on not less than one acre, the

course of management and the produce, &c. for a period of two years at least, to be detailed, with a statement of all incidental expense, - twenty dollars,

For the second best, - ten dollars.

For the best conducted experiment on not less than one half acre, with the same requisitions, ten dollars.

For the second best, - five dollars.

8. PLOUGHING.

1. Double Teams—For the best performance in ploughing, at least one sixth of an acre, *seven* inches deep, - - - twelve dollars.

For the second best, - ten dollars.

For the third best, - eight dollars.

For the fourth best, - six dollars.

2. Single Teams—For the best performance in ploughing, at least one eighth of an acre, *five* inches deep, - - - ten dollars.

For the second best, - eight dollars.

For the third best, - six dollars.

For the fourth best, - four dollars.

3. Horse Teams—For the best performance in ploughing with horses, - eight dollars.

For the second best, - six dollars.

4. For the best plough, character of the work done by it, easiness of draught, workmanship, and cost of implement being taken into consideration, ten dollars.

Note. Particular regard will be had in awarding these premiums to the character of the ploughs used. The power necessary to be applied in their use will be tested, and those which work best, with least power, will be preferred. The competitors for these premiums must be the owners of the team, and the same must be entered in the name of the owner. Those who intend to be competitors must give notice to the Secretary, or his agent, on or before the Monday next previous to the Exhibition. Teams that come more than ten miles, will be fed the night previous to the Exhibition, at the expense of the Society.

9. IMPROVEMENT OF AGRICULTURAL IMPLEMENTS.

To the person who shall exhibit at the show, any new or improved agricultural implement, the invention being his own, which shall, in the opinion of the Trustees, merit a reward, a premium shall be given, not exceeding ten dollars.

In all cases, proof must be given of the work done by the implement before it is exhibited, and of its having been used and approved by some practical farmer.

10. COMPARATIVE VALUE OF CROPS AS FOOD FOR CATTLE.

For the most satisfactory experiment upon a stock of cattle, not less than four in number, in ascertaining the relative value of the different kinds of fodder used, with a statement in detail of the quantity and value of the same as compared with English hay, the experiment to be made in the three winter months,

1st premium,	- -	twenty dollars.
2d premium,	- -	fifteen dollars.
3d premium,	- -	ten dollars.

These premiums are offered to be paid whenever a meritorious claim is presented; and will be continued until awarded.

11. EXPERIMENTS ON MANURES.

1. For an exact and satisfactory experiment in the application of poudrette, urate, bone-manure, ashes, soaper's waste, saltpetre, barilla, marl or gypsum, with a view to test their specific or comparative advantages with each other or any other manure,

1st premium,	- -	twenty dollars.
2d premium,	- -	ten dollars.

2. For the largest quantity of valuable compost manure, collected and brought into condition for use on any farm within the county, the materials and ability of

the claimant being taken into consideration, a statement in detail to be given,

1st premium,	-	-	thirty dollars.
2d premium,	-	-	twenty dollars.
3d premium,	-	-	ten dollars.

12. FATTENING CATTLE AND SWINE.

For the most satisfactory experiment in feeding cattle or swine, with a statement in detail of the process and the results,

1st premium,	-	-	fifteen dollars.
2d premium,	-	-	ten dollars.

13. CULTIVATION OF WHEAT, RYE, OATS, BARLEY, AND INDIAN CORN.

1. For the best conducted experiment of *Wheat*, on not less than one acre of land, ten dollars.
2. For the best conducted experiment of *Rye*, on not less than one acre of land, ten dollars.
3. For the best conducted experiment of *Oats*, on not less than one acre of land, ten dollars.
4. For the best conducted experiment of *Barley*, on not less than one acre of land, ten dollars.
5. For the best conducted experiment of *Indian Corn*, on not less than one acre of land, ten dollars.

ROOT CULTURE.

For the largest crop of Sugar beets, ten dollars.
For the largest crop of Carrots, ten dollars.
For the largest crop of Ruta Baga, ten dollars.
For the largest crop of Mangel Wurtzel, ten dollars.
For the largest crop of Onions, ten dollars.
raised on not less than one half acre of land, and the quantity of the crops to be ascertained by weight.

☞Claimants for all the above premiums, will be required to give a statement of the previous condition of the land, the comparative value of the land, the value

of labor and manure applied, the produce, the manner of preparing the ground, the seed used, the harvesting, &c., including all the details in relation to the crops, the same to be forwarded to the Secretary, previous to the 1st of December.

14. ANIMALS TO BE PRODUCED AT THE EXHIBITION,

On Wednesday, Sept. 28, 1842.

TO BE ENTERED IN THE NAMES OF THEIR PROPER OWNERS.

For the best ox, fatted within the county, regard being had to the manner of feeding, and the expense thereof, fifteen dollars.
For the second best, - ten dollars.
For the third best, - five dollars.

For the best bull, not less than one year old, on satisfactory assurance being given that he shall be kept for use in the county at least nine months from the day of exhibition. - - - ten dollars.
For the second best, - eight dollars.
For the third best, - six dollars.
For the fourth best, - four dollars.

For the best milch cow, not less than three, nor more than ten years old, with satisfactory evidence as to the quantity and quality of her milk, and the manner in which she has been fed, - - ten dollars.
For the second best, - seven dollars.
For the third best, - five dollars.

For the best heifer that has been in milk three months or more, with satisfactory evidence as to the quantity and quality of her milk, - seven dollars.
For the second best, - five dollars.

For the best pair of working oxen, taking into view their size, power, and training, ten dollars.
For the second best, - seven dollars.
For the third best, - five dollars.

For the best pair of three year old steers, do. seven dollars.
For the second best, - five dollars,

For the best pair of two year old steers, taking into view their size, power, and training, six dollars.
For the second best, - four dollars.
For the best pair of yearling steers, do. four dollars.
For the second best, - two dollars.
For the best boar, - - five dollars.
For the second best, - two dollars.
For the best breeding sow, five dollars.
For the second best, - three dollars.
For the best litter of weaned pigs, not less than *four*, from two to six months old, - six dollars.
For the second best, - three dollars.

NOTE. In testing the power of working cattle, five years old or more, the load is not to exceed *two tons*; under five years old, it is to be *one ton*.

15. DOMESTIC MANUFACTURES.

For the best piece of carpeting, a yard wide, and not less than twenty yards to be exhibited, five dollars.
For the second best, - three dollars.
For the best piece of stair carpeting, not less than twenty yards to be exhibited, - three dollars.
For the best straw or grass bonnet, five dollars.
For the second best, - three dollars.
For the best wrought hearth rug, having regard both to the quality of the work and expense of the material, three dollars.
For the second best, - two dollars.
For the best piece of woolen cloth, 7-8ths of a yard wide, and twenty yards in quantity, five dollars.
For the second best, - three dollars.
For the best piece of flannel, a yard wide and twenty yards in quantity, - - four dollars.
For the second best, - two dollars.
For the best wrought woolen hose, not less than four pair, - - - two dollars.
For the second best, - one dollar.

For the best men's half-hose, not less than four pair, one dollar.
For the best silk hose, not less than three pair, two dollars.
For the best piece of linen cloth not less than twenty yards, - - - four dollars.
For the second best, - two dollars.
For the best piece of linen diaper, not less than twenty yards, - - - three dollars.
For the second best, - two dollars.
For the best wrought counterpane, having regard to the quality and expense of the materials, four dollars.
For the second best, - two dollars.
For the best specimen of wrought lace, three dollars.
For the second best, - two dollars.
For the best specimen of work performed by a child under twelve years of age, exhibiting industry and ingenuity, - - - three dollars.
For the second best, - two dollars.
For the best pair of thick boots, three dollars.
For the best pair calf-skin thin boots, four dollars.
For the best pair thick brogan shoes, two dollars.
For the best pair calf-skin shoes, two dollars.
For the best specimen of shell combs, not less than one dozen, - - - five dollars.
For the best specimen of horn combs, not less than one dozen. - - - three dollars.
And should any other articles of domestic manufacture be exhibited, worthy of attention, a proper notice will be taken of them, and suitable premiums awarded; the whole amount not to exceed one hundred dollars.

16. FRUITS AND FLOWERS.

A convenient room will be provided for the exhibition of fruits and flowers, and a committee will be appointed to examine and report on such as may be presented. Whoever may present is requested to furnish a minute

in writing of the name of the owner, and description of the article presented. The Committee will be instructed to recommend such gratuities as the articles may seem to merit, not exceeding in amount the sum of thirty dollars.

17. LIVE FENCES.

For the best cultivated hedge or live fence of any kind, of not less than five years growth from the seed, and at least twenty rods in length, well trimmed and filled,

1st premium,	- -	twenty dollars.
2d premium,	- -	ten dollars.

18. FRUIT TREES.

For the best nursery of fruit trees, not less than five hundred in number, raised from the seed, and one or more years old, from the bud or graft,

1st premium,	- -	twenty dollars.
2d premium,	- -	ten dollars.
3d premium,	- -	five dollars.

GENERAL REMARKS.

All claims for premiums to be awarded on the day of exhibition, must be entered with the Secretary of the Society or his agent, on or before nine o'clock, A. M. of that day.

All other claims for premiums must be handed or forwarded to the Secretary in writing.

All premiums awarded, the payment of which is not demanded of the Treasurer within *one year* from the day of exhibition, will be considered as given to increase the funds of the Society.

No animal for which a premium has heretofore been awarded by the Society will be entitled to another premium, unless it be of a higher order, or for qualities dif-

ferent from those for which the former premiums were awarded.

No person will be entitled to receive a premium, unless he complies with the conditions on which the premiums are offered, and *gives notice as required* of his intention to claim the same.

In regard to all subjects for which premiums are offered, it is to be distinctly understood, that the trustees reserve to themselves the right of judging of the QUALITY of the animal or article offered; and that no premium will be awarded unless the objects of them are of a decidedly SUPERIOR QUALITY.

By order of the Trustees,

DANIEL P. KING, *Secretary.*

January, 1842.

COMMUNICATION FROM DR. A. NICHOLS.

To the Secretary of the Essex Agricultural Society:

DEAR SIR—I have continued the use of a compost, composed of the same swamp muck, ashes, and barn manure, as stated in my former papers on this subject, another year, on my farm in Middleton, as successfully as heretofore, making proper allowance for the injury done the crops by the hail of the 30th of June and the drought in August. To the compost used on about two acres, about twenty pounds of salpetre were added;—wherever this went, worms did not injure the corn, while other portions of the field were considerably injured by them. We were not certain of other benefits. My paper on the Science of Agriculture, No. 1, Vol. iii. of our Transactions, is doubtless very imperfect in many particulars and incorrect in some. The assertion ventured that the muck by us used as manure contains a free alkali, in its natural condition, is, I am now satisfied, erroneous. The test which I relied on, (owing to my antiquated chemistry,) is not a sure one, where alkaline

earths, lime, &c. are present. From the action of carbonic acid on silicates, both lime and magnesia may change the purple to blue, and during the decomposition which ensues between the sulphate of lime which the muck contains and the test itself, lime in its passage from one state to another may affect the test like a free alkali. Dr. Dana's analysis is doubtless correct. To determine whether the muck we used differed essentially from common peat in its fertilizing qualities, two cart loads of what when dry is a light, fibrous peat, were taken directly from the meadow, mixed with ashes in the same proportion as with the other muck, and four rows through the piece of corn, manured therewith. These rows were as good, we thought a little better than the adjoining ones manured with the compost above mentioned. Since the publication of the paper above mentioned, two editions of Liebig's Organic Chemistry, in its applications to Agriculture and Physiology, have been published at Cambridge. This is a valuable work for scientific farmers, although some of its theories, not being well established by experiments in the field, should be received with caution. His theory of the operation of plaster of paris is a plausible one, and if correct, of great importance. He says, "the action of gypsum, and chloride of lime really consists in their giving a fixed condition to the nitrogen, or azote, or ammonia, (a compound of nitrogen and hydrogen gases,) which is brought into the soil, and which is indispensible for the nutrition of plants." Ammonia is produced by the putrefaction of animal and vegetable substances which contain nitrogen. Animal manures doubtless owe much of their efficacy to this constituent, as those which contain it in the largest proportion are most valuable. Much of the ammonia formed by the process of putrefaction arises and mixes with the atmospheric air. Every shower of rain or snow brings it down again to the earth, and wherever it meets plaster of paris or chloride of lime, it takes the acids from these salts, and forms with them fixed salts. These, decomposed by the roots of vegetables, furnish the nitrogen necessary to their growth.

The superior value of human excrements and urine as a manure is well known to farmers. Liebig says, "the Chinese are the most admirable gardeners and trainers of plants, for each of which they understand how to apply the best adapted manure; the agriculture of their country is the most perfect in the world. In the case of everything except rice, the Chinese seem to manure rather the plant itself than the soil, supplying it copiously with their liquid preparations. Human excrements, especially urine, they consider invaluable. Laws of the state forbid that any of them should be thrown away, and reservoirs are placed in every house, in which they are collected with the greatest care. No other kind of manure is used in their corn-fields. If we admit that the liquid and solid excrements of man amount on an average to 547 lbs in a year, which contain 16,41 lbs. of nitrogen, this is much more than is necessary to add to an acre of land, in order to obtain, with the assistance of the nitrogen absorbed from the atmosphere, the richest possible crop every year." This, certainly, appears to us very extravagant, but it should be remembered that this is not the night soil used by our farmers, which has lost most of its ammonia, but an article with which they have not yet experimented—urine and excrement preserved. It would greatly promote the cleanliness of our cities, towns, and habitations generally, if, instead of the usual vaults, &c. of privies, casks or tubs, with well fitted covers, were placed open beneath the seats, and into these a handful of ground plaster of paris, a small keg of which might be kept standing by for this purpose, were thrown every few days. When these casks or tubs become nearly full, they can be removed, the covers being put on, and carried in wagons, or otherwise, wherever needed, without offending any one. Two sets of these vessels would in most cases be needed, that when one is removed another may be put in its place. This method is now in use at my own domicil, and I find it attended with very little trouble. If the floors of stables, heaps and reservoirs of manure be strewed from time to time with ground gypsum, they

will lose all offensive smell, and none of the ammonia which forms there can be lost; for ammonia and sulphate of lime cannot be brought together without mutual decomposition, forming carbonate of lime (chalk) and sulphate of ammonia, which are destitute of all smell, and according to Liebig, the greatest fertilizers of soils; for they contain carbonic acid and ammonia, which, with water, contain the elements necessary to the support of vegetables or animals. The same substances are the ultimate products of decay and putrefaction; and thus death, the complete dissolution of an existing generation, becomes the source of life to a new one.

Contrary to all received notions among farmers, and hitherto among scientific men also, Liebig asserts that geine, humus or vegetable mould are not the food of plants, and declares that so far from humus being extracted from the soil, it is in fact increased by cultivation; as in the case of a forest, the more abundant the growth of wood upon it, the greater the amount of humus upon the soil, where the debris (leaves annually thrown off,) is suffered to remain upon the land; and contends that after the leaves are formed, plants derive their nourishment chiefly from the atmosphere. On this, Dr. Dana remarks, "as regards Liebig there are so many points to be settled in vegetable physiology, that his views can be considered at present only as highly ingenious, bold, and counter to experience." Liebig says, that "when vegetable mould is placed in a vessel full of air, it extracts oxygen therefrom with greater rapidity than decayed wood, and replaces it by an equal volume of carbonic acid." But this is only a partial view of the action of air upon geine; it produces not only carbonic acid but water also, by uniting with the hydrogen of the geine. The amount of water proceeding from this cause is truly astonishing. It has been found by actual experiment,* equal per hour from an acre of fresh ploughed sward to 950 lbs., while the undis-

* These interesting facts, for which Dr. Dana refers to Nicholson's Journal, Vol. 23, pages 51—57, induced me to obtain and examine the paper which contains them. The experiments are so interesting and important that I have been

turbed ground gave not a drop. This is equal to the evaporation per hour from an acre, after the most copious rains. Here let us pause and consider; we can, it seems, generate water in the soil in a dry time, by stirring it with a plough or cultivator! This proves the correcteess of an observation made by Cobbet, I think, on the cultivation of Indian corn, that the effects of a drought upon it may be prevented by ploughing among it every morning while the dew is on. He thus noticed the fact without understanding the cause. Evening ploughing must be preferable to morning, however, as the roots would have a longer time to absorb the genera-

induced to make the following abridgement, to be inserted as a note to my communication.

* J C. Curran, Esq. M. P., to cleanse his foul grounds without resorting to fallows, planted them with cabbages, in a quincunx form, allowing 4 1-2 feet between each plant; 2350 were set per acre. The manure, about fourteen tons, was deposited as deep as the plough could penetrate, drawn by four horses, and the plants set directly above it. The plough and harrow, constructed to work betwixt the rows, was constantly employed during the summer, and the ground, a poor cold clay soil, was as completely freed from weeds as it could have been by a naked fallow. The crop in October was 35 1-2 tons per acre, many of the cabbages weighing 55 pounds each. Astonished at his success, and unable to account for it, he by mere accident met with the Bishop of Llandaff's experiments on evaporation from earth [newly ploughed I presume,] which had remained for thirty years without any practical application of it to agriculture. It appeared to him highly probable that the rapid growth after the hoeing of drilled grain, was attributable to the absorption of the evaporation produced from the earth, and was the cause of the growth of his cabbages. Accordingly, the following year he cultivated cabbages and potatoes in the same manner, with like success. In the mean time, he made constant experiments with glasses contrived for the purpose, to ascertain the quantity of evaporation from the land, which he found to amount on fresh ploughed land to 950 lbs. per hour on the surface of a statute acre, while on the unbroken no moisture arose from the earth. The evaporation from the ploughed land was found to decrease rapidly after the first and second day, and ceased after five or six days, depending on the wind and sun. These experiments were carried on many months; after July the evaporation decreased. The evaporation after the most abundant rains was not advanced beyond what the earth afforded on being fresh turned up. Evaporation from dung is five times as much as from earth, and is equal on the surface of an acre to 5000 lbs. per hour. By making use of dung in its freshest state, he says, the farmer may extend his cropping to one third more land, with the same quantity of manure. He recommends covering it deep. Manure exposed on the surface tends to no good. I have omitted his philosophical inferences from these experiments, for they are obviously incorrect. Dr. Dana's theory is more satisfactory. Such facts are imperishable, and cannot fail, sooner or later to enlighten those for whose benefit they are recorded. More than sixty years have now elapsed since the Bishop of Llandaff sowed the seed of a great improvement in agriculture, which is now just beginning to vegetate, and attract the attention it deserves. Let then every newly discovered fact in science and art be recorded. It will sooner or later benefit mankind.

ted water, before it would be in part lost by evaporation. Liebig states that cold water dissolves only one ten thousandth part of its own weight of vegetable mould. Dr. Dana remarks, "Liebig takes it for granted that it is rain only that is to dissolve geine and geates. He says, it is not enough. We offer him an abundant source in the fountain of water from geine. He says, it is not enough. We add, if indeed we should not begin there, the action of growing plants upon silicates, evolving bases whose action upon geine renders it easily soluble. I think these causes of the solubility of geine enough, and no small argument to prove that geine exercises other functions in soil besides evolving carbonic acid. Geine ceasing, barrenness follows. When Raspail and Liebig prove the contrary, I'll believe ourselves wrong in our views."

Amid these conflicting theories of the mode of its operation, one thing is certain, the presence of a large percentage of geine in soils, provided it be by culture duly exposed to the influence of air, alkalies, salts, &c., insures the greatest fertility. And farmers will do well not to let the theory that vegetables feed on air prevent them from supplying them with more substantial food, compost manures, in which, at least for light gravelly soils, peat, muck, or other substances rich in geine, forms a large proportion. It seems to me that Liebig's theories, when divested of contradictory appearances, shew conclusively that geine or its elements are the primary food of plants,—that the absorption of these by the rootlets developes those organs, the leaves, &c., which become in turn capable of absorbing from the atmosphere the same elements in even a larger quantity than is received by the roots, and appropriating them to the growth of the plant, thereby, in the end, by one of those beautiful laws of compensation everywhere met with in natural science, it becomes enabled to repay to the soil, with interest, the geine it takes from it. Deprive the plant of a soil containing geine, or carbon otherwise combined, and no organs can be developed to imbibe the same elements from the atmosphere.

Dr. Samuel L. Dana has now in press a work on these subjects, designed expressly for farmers. He has hitherto most generously given to the public his valuable discoveries without fee or reward, and it is to be hoped that every farmer will show himself both grateful and wise, by purchasing and studying this work, which, from the well known ability of the author, cannot fail to be worth its weight in gold to all who will avail themselves of its instructions. It is to be, I am informed, a volume of about 175 pages, small octavo, divided into eight or nine chapters, and these chapters into numbered paragraphs.

CHAP. 1. *On the Geology of Soil*—showing that the farmer need be neither a geologist nor mineralogist, as agriculturally considered there is one rock and one soil.

CHAP. 2. *On the Chemistry of Soil*—In which just enough is taught to show the farmer the nature and constitution of rocks.

CHAP. 3. *Properties and manner of action of the Elements of Soils*—Very full on the action of salts.

CHAP. 4. *Organic Elements of Soil*—Containing a detailed account of their origin and properties.

CHAP. 5. *Geine*—A full account of its properties.

CHAP. 6. *Manures*—The whole subject discussed.

CHAP. 7, 8, 9. *On the Artificial Preparation of Manures—the Principles of Irrigation—and the Physical Properties of Soil*—showing that these depend chiefly on geine, &c.

ANDREW NICHOLS.

Dr. *Essex Agricultural Society in account with Andrew Nichols, Treasurer.* *Cr.*

1840.	Paid Premiums 1840,	$192 90	1840.	Balance in Treasury, Dec. 31,	$723 42
	Paid Bills 1840,	273 12	April and	Dividends Commercial Bank,	22 00
	Amount funded,	500 00	October.	" Merchants Bank,	16 50
	Balance paid William Sutton, Treasurer,	252 98		" Salem Bank,	8 25
1841.				" Exchange Bank,	21 00
Nov. 22.		$1219 00		" Mercantile Bank,	17 50
				" Warren Bank,	57 00
				" Village Bank,	15 00
				Interest on Deposite,	13 33
				J. Shove's Note and Interest,	325 00
					$1219 00

FUNDS OF THE SOCIETY.

Bank Stock, par value,	$5533 33
Notes with sureties,	999 34
Savings Bank Deposite,	868 40
Balance in Treasury,	252 98
	$7654 05

ANDREW NICHOLS, *Treasurer.*

Nov. 22d, 1841.

Then examined the above account, and found the same correct.

R. S. DANIELS,
DANIEL ADAMS, 3D.

The above funds then transferred to William Sutton.

R. S. DANIELS,
DANIEL ADAMS, 3D.

OFFICERS OF THE SOCIETY,

Chosen Sept. 29th, 1841.

LEVERETT SALTONSTALL, of Salem, PRESIDENT.

DANIEL ADAMS, 3D, of Newbury,
NATHAN HAZEN, of Andover,
SOLOMON LOW, of Boxford,
ASA T. NEWHALL, of Lynnfield. } VICE PRESIDENTS.

WILLIAM SUTTON, of Salem, TREASURER.

DANIEL P. KING, of Danvers, SECRETARY.

TRUSTEES.

JEDEDIAH H. BARKER,	Andover.
ANDREWS BREED,	Lynn.
WILLIAM D. S. CHASE,	Haverhill.
JEREMIAH COLMAN,	Newburyport.
SAMUEL DAY,	Ipswich.
ANDREW DODGE,	Wenham.
JAMES H. DUNCAN,	Haverhill.
NATHANIEL FELTON,	Danvers.
DANIEL FULLER,	Middleton.
MOSES FRENCH,	Salisbury.
JOSEPH HOW,	Methuen.
FREDERICK HOWES,	Salem.
ASAHEL HUNTINGTON,	"
JOSIAH KIMBALL,	Boxford.
JOSEPH KITTREDGE,	Andover.
WILLIAM S. MARLAND,	"
ROYAL A. MERRIAM,	Topsfield.
MOSES NEWELL,	West Newbury.
DANIEL PUTNAM,	Danvers.
DEAN ROBINSON,	West Newbury.
JAMES B. SAVARY,	Georgetown.
JESSE SHELDON,	Beverly.
JEREMIAH SPOFFORD,	Bradford.
ERASTUS WARE,	Salem.

MEMBERS ADMITTED IN 1841.

CALEB FOOTE,	Salem.
FRANCIS DODGE,	Danvers.
WILLIAM A. LANDON,	"
JONATHAN KING,	"
EBEN KING,	"

Any citizen of the County may become a member by paying to the Treasurer three dollars. Members are not liable to any assessments.

INDEX.

TRANSACTIONS

OF THE

ESSEX AGRICULTURAL SOCIETY,

FOR

1842.

VOLUME III.—NUMBER III.

PUBLISHED BY ORDER OF THE SOCIETY.

JANUARY, 1843.

SALEM:

PRINTED AT THE SALEM GAZETTE OFFICE.

1843.

ADDRESS.

BY ALLEN W. DODGE, ESQ.

Gentlemen:

Once more we assemble on this joyous occasion—once more we hold the farmer's festival. It is meet, as the sheaves are yielding up their rich treasures into our granaries and the corn is ripening for the harvest, that we should gather in the fruits of our experience and observation, and submit to the view of others those things which may be deemed worthy of experiment in the field of agriculture. Especially is it meet, at the present time, when a season of almost unparalleled productiveness is closing upon us, that we should unite our hearts in grateful homage to that Heavenly Benefactor, who has poured the rain and the sunshine upon our fields, and has suffered neither tempest nor mildew to blast our crops.

As one of your number, I come hither, bringing but limited observation and still less practical knowledge of agricultural pursuits; but if a lively interest in those pursuits, and a hearty sympathy with the members and objects of this association, can compensate for a deficiency of ripe experience and mature judgment, then may I claim indulgence, whilst I endeavor not to instruct in any thing new, but to remind of what is already known and to impress its importance.

Indeed, it has seemed to me that the farmers of Essex have ample sources of information on the various branches of their vocation. They have access to the most valuable standard works on those subjects, to the reports of this and of kindred societies, and to the agricul-

tural journals with which they are so cheaply furnished—they have, too, the examples of some of the best farmers in the land. No farmer here can justly complain that he is destitute of the means of knowledge—of that knowledge, which, applied to agriculture, is power—power to develope its resources—power to multiply and improve the quality of its products—power to facilitate the methods of its varied operations. Every farmer can be a neat, and to some extent a thrifty farmer, if he resolutely and perseveringly sets about it. "Where there is a will, there is a way," saith the old proverb; but here is not one way merely, but often many ways, already provided to our hands, of accomplishing this result—each and all faithfully tried and approved by individuals acting independently of one another, so that the greatest assurance of success is guarantied to those who under similar circumstances, shall essay to accomplish a similar result.

How is it then that so few good farmers are to be found among us? How is it that only here and there is an individual conspicuous for good husbandry, whilst the remaining portion go on from year to year in the same unvarying course, without striving to correct errors or to adopt improvements in their system of cultivation?

Various answers to this inquiry have been suggested. By some it is alleged that our soil is, in general, poor, and that the difference in the quality of the soil makes the difference in the character and condition of those who till it—that any one can be a good and a prosperous farmer on land naturally productive, or with means at hand, such as abound on the sea-shore, of perpetually renewing its fertility, whilst on light or rough land its occupant must be doomed to eke out a scanty subsistence, by dint even of the severest pains-taking.

Now it is not to be denied, that, other things being equal, he that cultivates a rich soil has decided advantage over him who carries on such as is deficient in the elements of fertility. But how many farms there are where Nature has done every thing, and Art nothing—

where the capabilities for improvement are obvious to every eye, but the disposition to improve is not to be perceived. How many farms, too, there are, upon which Nature has been chary in bestowing gifts, but such as are yielded have been seized upon with avidity and turned to the most profitable account. On one farm, a bank of clay has furnished the means of enriching a sandy soil—on another, a peat meadow has supplied material, which, by skillful preparation and admixture with the contents of the hog and barn yards, has doubled the amount of its manure. On a third, low, swampy grounds, where cattle once mired to the breast, have by thorough ditching and draining, been transformed into the best of English mowing. The difference then between good and bad husbandry does not consist altogether in the difference of the land cultivated—the poverty of much of our soil is not, as I conceive, the principal cause of the impoverishing cultivation which it receives.

Again, it is said, that want of capital prevents the majority of our farmers from making progress in agricultural improvements. Undoubtedly, this, to a considerable extent, is the fact. It is often hard work to get from a farm, by the greatest industry and frugality, sufficient income to meet its expenses and those of the household. This unquestionably should be, as it is, the first and main object; for it is not advisable, as a general rule, for those who are in receipt of so little gain as most of our farmers are, and that too, in driblets, to run in debt even for improvements. A mortgage is oftener an incubus than an incentive to exertion; six per cent. annually, makes a large draft on the proceeds of the season, and to meet the principal, the farm itself is frequently sacrificed. The habits and circumstances of our yeomanry, so diverse from those of the English land-holders and tenants, will not warrant such an outlay of borrowed capital by the former, as is made by the latter. Neither is the practice of our manufacturers and merchants, in this respect, a safe guide to our agriculturalists.

But what constitutes the farmer's chief capital—the grand outlay by which and from which he is to derive the largest returns? Is it not labor? Is capital of any value to the agriculturalist, except mainly as it commands labor? Money may, indeed, purchase all the means of improving soil and multiplying products; but labor, labor is the great and most expensive item by which these ends are to be effected. How stands the case then with the New England farmer? Owner of the land he tills, the labor upon it is performed principally by himself and family. Blessed with strong constitution and with limbs hardened to the severest work of summer and winter,—blessed, too, with children, trained to habits of steadiness and industry—he is already supplied with capital of the best kind; he is the truly independent man, for he is not obliged to hire others to do that which he and his household are themselves able and willing to perform. How, then, is it, the question again rises, that their condition and that of their farms are not more improved?

It is urged by some, that the Legislatures, both state and national, have not rendered such efficient aid as they might render to agriculture, and as it is entitled to receive. As to our own state, who can justly lay to the charge of her legislators, that they have been unmindful of the agricultural interests of the Commonwealth? Look at her bounties, from time to time, bestowed on the productions of her soil. Look at her agricultural, geological, and other scientific surveys, instituted mainly to promote the practical benefit of the farmer. Run along the bright roll of her statute-book, and mark the wise and wholesome laws to encourage her farming interests. See, standing in bold relief, her annual grant of funds to this and similar associations, to aid in stimulating the cultivators of her soil. True, some of these bounties may be deemed injudicious; but even these evince the willing mind and fostering hand. True, some of these surveys may not as yet have yielded their promised harvest; but are we not beginning to reap it? Is the information embodied in the treatise on

"Insects injurious to Vegetation," of no service to the farmer in helping to extirpate them from his land and his trees? And those elaborate surveys of the late agricultural commissioner, while they shed lustre on his name, are of themselves sufficient to demonstrate, as with a noon-day sun, the enlightened aid extended by Massachusetts to agriculture.

The service which can be rendered to the same cause by the National Government, must be incidental through her revenue laws; and these, I believe, have operated to the benefit of agricultural as well as manufacturing interests. There are exceptions, I know, but the articles of foreign production which come in competition with the products of our own soil are comparatively so few, that the necessity of tariff laws to protect domestic agriculture, is hardly felt or demanded. By protecting manufacturing interests, a home market is provided for the produce of our farms—a protection more effectual than it would be practicable to accomplish by duties upon foreign agricultural productions. Encourage manufactures, and the farmers in the vicinity of our numerous manufacturing villages have no difficulty in disposing at good prices of their produce; produce, which, if not thus disposed of, would find its way from the interior to the seaboard, to the detriment of the farming interests here. Although the price of some articles—as wool for example—may have been depressed by the want of sufficient protection, yet agriculture, on the whole, has not, as I have been able to learn, suffered in consequence of any neglect of the General Government to interpose in its behalf.

Can we, then, point to any other cause which has operated to prevent a more successful cultivation of our soil? It has frequently been said, and I think justly, that the majority of our farms are too large; that more ground is cultivated, or attempted to be cultivated, than there is ability to cultivate profitably or well. The time and labor expended in raising ten acres of corn, would be diminished nearly one half, if bestowed only on five acres; while, if the same quantity of manure as

is generally applied to the former, were used on the latter, the crop would be equally as large, and the land would be left in far better heart. The same is true, also, with regard to grass-land. Ten tons of English hay, on five acres of ground, can be cut and cured, with as little delay and expense as five tons on ten acres. The gain in this respect, to say nothing of other advantages, must be apparent to all. I know of a farm, in this county, consisting of but forty acres of tillage and mowing, full one quarter of which, when I lately saw it, was under root cultivation, and a luxuriant growth of rowen covered the remainder. From this had been taken, the present season, forty-five tons of English hay, all of which was cut, cured and stored by three men; and it was but eleven days from the time the first, till the last load went into the barn.

But suppose that your farm is a dairy-farm, consisting of a large range of pasture. There are the fences and the gates to be maintained, and the taxes to be paid, double what they would be, on half the extent of ground. And the larger the pasturage, the less likely will it be to receive any efforts to renovate its fertility. Hence, we see, throughout the county, large tracts of such land, moss-grown and nearly barren, which needs only the plow, and a moderate supply of manure and hay seed, to bring it into good condition. But the extent of this description of land discourages the attempt. I am almost inclined to the opinion, that, could many of our farms be divided into halves, and one moiety lie fallow for five or ten years, and the other moiety only be cultivated and fed, we should, in the end, find our account in the increased fertility of the latter, from the very fact, that our resources were better husbanded, and our labor and manure better applied.

There is another prominent error prevalent among our farmers, which operates powerfully to their injury. I mean the little pains which they take to improve the manure-heap, and to preserve it in the best possible condition for use. I say nothing as to the best method of applying manures—whether by plowing-in, harrowing-

in, or using only in the hill—for this is a vexed question, and the practice of good farmers varies in respect of it. But how few the farmers who devote the care they ought to enlarge the manure heap. How seldom are barn-yards contrived in the manner best adapted to save the strength of all that goes into it; and how rarely are they supplied with the material at the proper times and in sufficient amount, to produce the greatest result. What waste, too, is committed by the summer's sun, and the rain and winds of spring and autumn, in dissipating the virtues of that which is to constitute the food of the coming crops. We might borrow a useful lesson from the English farmers, by making manure into what they term "pies," instead of carting it in the fall to the open field, to be strown over a large surface, exposed to the ravages of the weather. This may be done by placing it in alternate layers with meadow-mud or with soil, and enveloping the whole with a side and top crust of the same material.

Again, I would ask, if labor is as well directed, if foresight and judgment are as often exercised, as they should be, upon our farms in order to bring them into the best condition? In many places there are yet meadows to be reclaimed; wet lands to be drained; clayey soils to be mellowed by the admixture of sand and sandy soils, to be strengthened in texture by clay. Are these and similar improvements made as often and as effectually as they might be made, if undertaken in good earnest? Do you say there is not time? There may always be found intervals of time for such work, if resolutely determined upon. But the magnitude of the undertaking appals many a faint-hearted man, simply because he looks at the execution of the whole, instead of setting about it at once, and accomplishing it as he is able. He will commend the improvement, wish it was made, is persuaded of its benefit, and will freely intend one of these years to undertake it, but he never does.

Such an one is a *going-to-do* farmer; and is it any wonder that he makes little or no progress?

Look now at his neighbor, who is always *doing*. He

spends no time in complaining of hard times, want of means, or the extent of the job he has on hand. Not he. If the times are hard, so much the more reason, he thinks, why he should work the harder; if his means are small, that does not lead him to envy his more wealthy neighbors, but stimulates him according to his means, to rival their husbandry; if the job is heavy, the sooner it is begun the sooner it will be completed; so at it he goes, boys and all, from early dawn till dusk—as he finds opportunity—and when it is finished the whole family of the going-to-do begin to wonder how he finds time to do so much. Now here is one reason, almost of itself sufficient to account for the disparity of condition between a good farmer and a poor one. Is it not so? And cannot you call to mind living examples of the two pictures here drawn?

But, do the best they can, the farmers of Essex have many obstacles in the way of their prosperity to encounter. The means of communication from the interior to the seaboard, are now so numerous, so cheap and expeditious, that almost all kinds of agricultural produce are brought from a distance in direct competition with our own. The price of butter, one of the staples of this county, has been depressed the present season, by the large supplies introduced into our markets by rail-road. And the farmers of Berkshire are already contemplating sending their hay, in screwed bundles, to Boston, by the same conveyance.

It were idle, if not unwise, to complain of that which promotes the general good, though it operates at the same time to our own injury. I ask any candid and enlightened farmer, if he would have Massachusetts, if he could, stripped of those iron avenues which connect her not only with adjoining states, but with the far West and the far East? If he would have lines of travel when they reach our borders, by these avenues, stopped, and the traveller told, that he must seek his way as he can over our soil, for its agricultural interests are too sacred to be invaded by Rail Roads? No! I am persuaded that your good sense revolts from such

a wish; that what the public convenience and necessity demand, you would be the last to oppose or destroy.

If then, this competition must continue, it must be met and sustained on our part by superior skill and application, by more intelligent management, by resorting to new articles of production, or restricting ourselves to those which are less likely to be affected by such competition. Our large market towns will always require large and early supplies of vegetables, and for these, fair remunerating prices will continue to be obtained. It is certain that far greater profits are derived from market gardens, than from any large farm, on which the same expenditures are made. But to these there is a limit.

There is another source of profit opened to us, the value of which we have not yet begun to appreciate or realize. I mean our orchards; not orchards as they now are, but as they may be made to be—large and thrifty orchards of valuable summer and winter fruit. Time was, when apples were cultivated principally for cider, and this Society annually offered premiums for the best sample of it. That time has gone by, but on most of our farms, the trees still remain, yielding the same sour fruit, which now hardly repays the labor of gathering. When not too far gone, these trees should be furnished with a new head, as many a farmer has been, who once depended on their whole produce for his home consumption of cider. New views and new habits, in this particular, have been engrafted on the minds of nearly our entire agricultural community, and why should not new fruit and better fruit be inserted into our old apple tree stocks? The apple tree is longer lived and will continue in bearing a greater length of time than is generally supposed. On a farm in this county, two apple trees lately existed—one of them yet remains—from which forty dollars' worth of fruit was taken in one season, after they were one hundred years old. From the same farm more than a thousand barrels of winter apples have repeatedly been taken in a single year. This however has been effected only by good care and culti-

vation. The trees are properly trimmed, decayed wood removed, wounds healed up, and the grounds beneath kept almost constantly under the plow, for the express benefit of the trees. So manifest are the advantages of keeping under cultivation the belt of land occupied by fruit trees, that I would urge upon all the adoption of the practice. It requires labor and manure, but upon what can they be more profitably bestowed? By such a system, fresh vigor may be imparted to many an orchard which is now conspicuous only for its unfruitfulness.

Our orchards, however, are sadly deficient in number and extent. They must be recruited, and to do this we must either resort to the nursery men or we must raise the trees ourselves. If we are anxious to commence at once, they should be procured at the earliest season of transplanting, and when that is properly done, they should receive yearly as much care as is bestowed on our cornfields or gardens. If contented to wait a few years, we should, the coming fall, put into the ground the seed to supply ourselves with stocks. By the second or third summer after, they will be large enough to bud, if this method of propagation be adopted.

The inducements to enter largely into the cultivation of fruits, it appears to me, are great and obvious. As to summer fruit, what a lamentable deficiency exists among us. I know of but few farms in the county where it is raised in sufficient quantities to supply their own wants. Is it not desirable to have such fruit always at hand in its season, for the children, at least, if not for the older members of the family. Why, it seems to me that a direct temptation to theft is offered to the boys, where summer fruit is so great a rarity. The longing for it is too keen to be resisted, and the supply is to be obtained only by committing trespass on some more favored individual. Multiply fruit trees, and robbery of orchards will be unheard of. We have, to be sure, here and there an apple tree growing in the pasture, the fruit of which has the rare recommendation that it does not set the teeth on edge quite so bad as that of

the orchard; or a plum tree, from which, perhaps, a cupfull of preserves is manufactured in an abundant season; or a peach tree, the fruit of which is somewhat softer than its stones, after it has been hit a few hard blows by the frost. But beyond these, we have not generally on our farms much to boast of, in the way of summer fruit.

Besides the satisfaction and the nourishment and health to be derived in our families from a plentiful supply of such fruit, it would furnish one of the most profitable articles for market. The demand for it is great; greater, I am inclined to believe, since stimulating drinks have been so generally abandoned. Its refreshing qualities are an agreeable substitute for such drinks in the warm season. If, as is justly said, the cocoa nut is meat and drink to the natives of the torrid zone, is not a pleasant apple, a melting pear, a luscious peach, entitled to a similar reputation with us?

New varieties of fruit are constantly being propagated in the nurseries, and as soon as tested and approved they should be introduced into general culture. Great credit is due to our Manning and Ives for their indefatigable zeal and judicious skill in stocking their gardens with such choice descriptions of cherries, plums, peaches and pears; thanks too should be awarded them and other gentlemen in Salem and its vicinity, for the excellent Horticultural Society, which they have so successfully established, and for the practical instruction which they are imparting to the rest of the county in this collateral branch of agriculture.

As to winter fruit, we possess eminent facilities for its successful culture. Our soil, where light, suits the universal favorite, the Baldwin; where strong, it yields abundant crops of that capital old variety, the Roxbury Russet. Our proximity to the ocean seems to favor the growth and health of the trees and the quality of the fruit. I am informed by those residing in the western part of the state, that the apple does not flourish there and that they are dependant on Boston and New York for a supply for winter. There is always a good

demand for this fruit, not only for neighboring markets, but for shipping abroad. Our winter apples have generally the property of long keeping; and if, as is said, they are superior in flavor to those of the south and of Europe, the day cannot be far distant, when steam navigation will open sources for its exportation as yet unexplored. The apples of Essex may yet be as widely celebrated as the oranges of Havana.

It is unnecessary, however, to urge this subject further on your consideration, for in every quarter evidence is seen of increased and increasing attention to it in practice. Our farmers are beginning to wake up to the value of good orchards, and are renovating old ones and planting new. Let such efforts be continued and in a few years we shall ourselves receive substantial rewards; and when the next generation take our places, they will bless our memory for the rich legacy bequeathed to them; every blossom in spring will revive grateful recollections, and every cluster of fruit in autumn will be a fresh memento of our deeds.

But there are other branches of agriculture which should receive greater attention. One, especially, deserves consideration—the providing of succulent food for cattle in winter and early spring. The general practice among us is to send to market as much hay as possible; probably in no part of the state is so much hay sold from the same territory, as from our own county. This course will doubtless be continued, so long as this article commands the prices, which of late years have been obtained for it. Our fresh meadows and salt marshes, by furnishing supplies of fodder for home use, enable us to do this; but our farm stock to a considerable extent, suffer from the inferior fare they are obliged to put up with. Now, would we increase the number and improve the condition of our cattle, ample provision must be made for their wintering. By so doing, we shall multiply the means of fertilizing the soil, for improvement in one branch of agricultural economy begets improvement in another.

It is little credit to a farmer to boast of the large

quantities of hay he sells, when his live stock in spring, like so many walking skeletons, show how scanty the food upon which life may be sustained. No; provision should be made for the barn, as ample as that for the house. This can be accomplished, and the great article of hay still be left for sale, by the cultivation of roots; the carrot, the ruta-baga and the beet. The cultivation of these is extending, but if it proceeded far more rapidly, we should all find our account in it. The potato will undoubtedly continue to maintain the first rank in root culture; yet the cost of seed and the crop of weeds usually grown along with it, are serious drawbacks to its value, in comparison with other roots. With respect of the latter, a necessity exists for clean cultivation and high manuring, which will assuredly tell, not only on the superior amount of the crop raised, but on the future condition of the land.

Extensive cultivation of root crops is the basis of good husbandry in Great Britain, and I see no good reason why it should not be with us. True, sheep cannot be fed here in winter on turnips in the field, even if we had the sheep to feed; but we can secure the roots in trenches or cellars, for the use of our horned cattle and horses, and swine, during the hard and long winters through which we must carry them. Again I repeat, that by such a course, we are increasing the capital of that bank, upon which the farmer must draw in spring —the bank of manure—of which the owner being sole president and director, may extend its operations without danger to the community.

The cultivation of roots too, would enable us to extend the business of the dairy into winter, in the same way that it enables the milk farms to supply the markets during that season with milk. The period of butter-making is much shorter than it need be; much shorter, I am satisfied, than the interest of our farmers should suffer it to be. In connection with roots, the culture of winter rye, to be grazed in early spring, deserves, as I trust it will receive, careful experiment. In fact, if more forethought and attention were bestowed upon the

liberal treatment of our cows from the beginning to the close of the year, it would well repay our efforts. Look at any large milk establishment, and mark the provident care with which succulent food of various descriptions and in bountiful supplies, is furnished to its cows. If the pasturing in summer is short, they are soiled from the mowing lots, or are fed with green corn stalks raised expressly for that purpose. So well convinced have I been of the benefit of this latter species of feed, that on a farm where a dozen of cows are usually kept for the dairy, I have the past and the present season sowed about a third of an acre with corn, in drills near together, and dressed with a compost of one half meadow mud, hove by the frost, and one half green manure. On the stalks raised last year on this ground, the stock of cows with four oxen were liberally fed at each evening for five weeks, beginning about the middle of August. This carried the cows through the dry season, without pinching or drying. The kind of corn then sowed, was our common Northern corn, of rather smaller stalk than usually prevails, so that butts and all were entirely consumed. This year I sowed the Southern yellow flat corn, but it has grown so rank, averaging eight or ten feet in height, that a large part of the stalk is left untouched by the cattle. The produce of a square rod was weighed September fifth, and found to yield about 30 tons to the acre. From the rankness of its growth it is not so palatable to the cows, as stalks from our own corn. The sweet corn stalk would doubtless be preferable to either, and though recommended for trial by the first president of this Society, at its first public meeting as long ago as 1818, I have not been able to learn of its culture, except in a recent instance, for the object before named. It is eaten with the keenest relish by cows, and from the sweetness of its juices, there can be little doubt that by the free use of it, their milk would be of the richest quality.

While on the subject of the dairy, I would suggest whether a churn, superior to any in common use, one which should require less time and labor in churning,

might not be invented. In the western part of the state, this operation is performed by a dog or sheep travelling on a horizontal wheel, by which the power is communicated to the churn—but our dairies are so small that manual labor must, probably, be retained here for this purpose. A churn, the dashers of which are moved by a set of cog-wheels, has recently been devised by one of our mechanics, but its advantages can be tested only by repeated trials and experienced hands. The plow has deservedly received a large share of mechanical ingenuity, in bringing it to its present improved condition; but there are other important implements of agricultural industry which still wear out strength and patience for want of this aid. Let improvements in these be brought under the actual inspection of our farmers or their wives, and, if convinced of their reality, they will not be slow to adopt them.

I would here allude to one general means of agricultural improvement, which, I believe, has not been sufficiently appreciated,—the personal visitation of farms that are distinguished for good management in general, or for excellence in any specific department. True, we have our annual Agricultural Exhibitions, and they accomplish great good in stimulating to exertion and imitation of worthy examples. But at these *results* are exhibited, without an actual exhibition, except in the case of the ploughing match, of the means and modes by which they have been attained. This is well, as far as it goes, and the publication of the transactions of our societies is well—but it is an old saying and a true one, that "seeing is believing." Now this "*seeing*," this actual inspection of excellence, is what we must have, if we would successfully imitate it. It is not enough to contemplate the face of a watch—to observe the motion of its hands and listen to its tickings, to become a good watchmaker—nor will any written account initiate you into the hidden mysteries of its machinery; no, you must *see* that machinery taken apart and again put together, piece by piece, before you have a just knowledge of its combination and attempt with success to form it.

Apply the illustration to some of the details of agriculture. If you see growing on a farm a number of acres of carrots or ruta-bagas, you can take in with a glance the greater amount of food which they afford from the same space of ground, over other usual articles of cultivation. If you witness clean culture and high culture, you can comprehend and estimate their immense advantages. If you observe fruit trees healthy, thrifty and productive, the land under which is kept constantly cultivated, you are impressed with their good management more forcibly than you can be from any separate exhibition of their fruit, or any statement of their management. Almost every good farmer has a superior way of performing some operations—or a peculiar and decidedly improved arrangement either in his farm buildings or yards or other premises, which might be adopted with benefit by others. Farmers, I am aware, are in general so much occupied at home that they can find but little time for visits abroad. The road to market and to mill is the principal road they travel. But let them occasionally take a day for such explorations as I have named, and the value of their discoveries will often more than compensate for the time devoted to them. Said one of the oldest and best farmers in my neighborhood, I resolved when I commenced farming, not to follow implicitly the footsteps of my ancestors, but to give a fair trial to whatever I observed in others worthy of experiment. Here I gained one idea and there another, entirely new to me. These were submitted to practice, and I am satisfied that I learned more in this way than by any other course I ever adopted.

As a general fact, we are too much attached to the old ways—the *good* old ways of our fathers. Very good, no doubt, they were in their day; but is there no better way for us, is the question we are to settle, each for himself. And to help us to settle it, the course I have mentioned, would be of most efficient service. Opportunity would thus be afforded, not only of seeing with our own eyes what we wish to see, but of making all inquiries relative thereto, and of having them answered at

the time and on the spot. It is for want of this, that agricultural journals frequently fail of giving such satisfactory information as we desire. They are essential and valuable aids to agricultural improvement, and if they accomplished no other object than to keep our minds in active exercise on the various subjects in which we are so deeply interested, they would be worth more than the price at which they can be procured.

Every thing, indeed, which exercises the faculties—which elicits the thought and enlarges the knowledge of the farmer on his own calling, should be brought into requisition for his use. His is a pursuit whose daily operations demand far more intense application of mind, as well as of body, than was fondly imagined by the poor old King of England, who, in the midst of trouble and disasters of state, is represented by Shakspeare to sigh—

Methinks it were a happy life
To be no better than a homely swain—
To sit upon a hill, as I do now;
To carve out dials, quaintly, point by point,
Thereby to see the minutes how they run
How many make the hour full complete,
How many hours bring about the day—
How many years a mortal man may live.
When this is known, then to divide the times,
So many hours must I tend my flock;
So many hours must I take my rest;
So many hours must I contemplate;
So many hours must I sport myself;
So many days my ewes have been with young;
So many days ere the poor fools will yean;
So many years ere I shall shear the fleece;—
So minutes, hours, days, weeks, months and years,
Passed over to the end they were created,
Would bring white hairs unto a quiet grave.
Ah what a life were this! how sweet! how lovely!

Thus thought a crowned head, and thus think many uncrowned heads, of the homely farmer's life—so sweet, so lovely, because, forsooth, in their estimation, it is free from all care and all anxiety of mind. When troubles surround and threaten to engulph the merchant, he sighs for the peaceful farm, where life shall flow on like

a summer stream. But when he resorts to those fields which he fancied were Elysian, he wakes from his delusion. However large his capital, it will require all his care and all his skill to keep it from evaporating in fancy farming. Or if, of humbler means, he labors himself, he soon learns by hard experience that the poetry of agriculture is one thing and the prose another and a very different thing—that the constant care of his crops and his stock and the management of farm matters generally, require quite as much judgment and care and skill as mercantile traffic, whether in tapes or in tonnage—at the counter or on the wharf.

Yes, farmers of Essex, you know better than I can prove or illustrate, that your occupation demands intelligence, application, labor, skill—that immunity from care is not the privilege of your lot. You know also that your gains, though small, are sure—that your pursuits invite not to habits of speculation—that your property is not all upon paper to be blown to the winds by the vicissitudes of trade. Let the reflection that the spot of Earth you till, is your own, and that in tilling it to the highest perfection, you have ample scope for the constant exercise of the noblest powers of mind, animate you to redoubled exertions to attain to that perfection.

REPORTS, &c.

ON PLOWING.

WITH DOUBLE TEAMS.

THE Committee on plowing with double teams, REPORT:

That sixteen teams were entered—thirteen of which were present—engaged in the work.

The field selected for the purpose was directly in front of the building of the Theological Institution at Andover. Lots Nos. 1 to 10 were 18 rods long and 24 1-2 feet wide—Nos. 11 to 13 were 17 rods long and 26 1-2 feet wide—each containing about one sixth of an acre. The soil may be described as a heavy granite soil, with a very hard gravelly or stony subsoil. Most of the fast rocks near the surface had been removed. The soil itself appears never to have been plowed more than *five inches* deep, and the subsoil was so hard that it was difficult to attain the requisite depth of *seven inches*. Of consequence, the appearance of the furrows was rougher and more broken, than it otherwise would have been; and the power required to move the plows was necessarily much increased.

The lots were drawn, and the work was done, as follows—viz:

No. 1. Jesse Curtis, of Marblehead, owner; George W. Winslow, plowman; Andrew Curtis, driver. Plow made by Ruggles & Co.; 2d size. Work done in 58 minutes, with 21 furrows; the furrows were well laid, smooth, rather shallow.

No. 2. Charles Foster, of Andover, owner; Charles W. Foster, plowman; John P. Foster, driver. Plow made by Ruggles & Co.; 2d size. Work done in 64 minutes, with 21 furrows; they were lapped a little, not quite seven inches deep, well laid.

No. 3. Ralph H. Chandler, of Andover, owner; himself plowman; Joseph Chandler, Jr., driver. Plow made by Ruggles & Co.; Eagle size. Work done in 62 minutes, with nineteen furrows; quite deep, and appeared more broken than most of the others; the work was faithfully done.

No. 4. George P. Wilkins, of Middleton, owner; James Wilkins, 2d, plowman; Andrew S. Curtis, driver. Plow made by Ruggles & Co.; with a circular cutter from one of Pike's plows. Work done in 44 minutes, with 19 furrows; in going the second round, the point of the shave was broken by striking against a fast rock, but this inconvenience was counterbalanced by the extra skill and exertion of the plowman. For this work the second premium was awarded.

No. 5. Joseph Kittredge, of Andover, owner; Nathan Foster, 3d, plowman; Israel Foster, driver. Plow made by Prouty & Co.; size A. Work done in 45 minutes, with 19 furrows; of proper depth, not so regularly laid as some of the others, probably through inattention to this point, on the part of the plowman.

No. 6. Samuel Jenkins, of Boxford, owner; Joshua Day, plowman; Samuel Jenkins, driver. Plow made by Prouty & Co.; size A. Work done in 41 minutes, with 18 furrows; these furrows were wide, of full depth, and well turned, somewhat broken, favorable for the land. For this work the third premium was awarded.

No. 7. Jacob S. Phelps, of Andover, owner; himself plowman; Chandler Phelps driver; plow made by Ruggles & Co.; 3d size. Work done in 63 minutes, with 20 furrows; not so even as some, and rather shallow; the plow was not large enough for the work.

No. 8. William Peters, of Andover, owner; himself plowman; George Jewett, driver; plow made by Prou-

ty & Co.; 2d size. Work done in 41 minutes, with 19 furrows, irregularly laid, as compared with others.

No. 9. James Stevens, 2d, of Andover, owner; Franklin Kimball, plowman; John Martin, driver; plow made by Prouty & Co.; size A. Work done in 40 minutes with 17 furrows. This team was a pair of oxen and a horse; they worked remarkably well and quick, and with little fatigue. Their work was done as well as any on the field; but in the opinion of a majority of the Committee, the team was not *such a double team* as was contemplated when the premiums were offered—of consequence not a regular competitor for the premium.* A gratuity equal to half the 1st premium is recommended for this performance.

No. 10. Jedediah H. Barker, of Andover, owner; Otis M. Clark, plowman; J. H. Barker, driver; plow made by Prouty & Co.; size B. Work done in 52 minutes, with 19 furrows; not cut so true as some, wide and flat. This team was well trained, as Mr. Barker's cattle always are.

No. 11. Samuel F. Barker, of Andover, owner; Timothy Faulkner, plowman; Samuel M. Barker, driver; plow made by Prouty & Co.; sod C. Work done in 58 minutes, with 20 furrows. This land was less favorable for plowing than most of the others; it was considered well plowed, and laid, but not the depth required.

No. 12. John F. Carlton, of Andover, owner; Simeon Foster, plowman; J. F. Carlton, driver; plow made by Prouty & Co.; size A. Work done in 60 minutes, with 21 furrows. This was laid very smooth indeed, and in all respects well done. To this work was awarded the fourth premium.

No. 13. Samuel Jenkins, jr., of Andover, owner; John F. Foster, plowman; Samuel Jenkins, jr., driver; plow made by Prouty & Co.; size A. Work done in 51 minutes, with 20 furrows. Very perfectly done indeed, and quick, without hurry or fatigue, evincing skill

* Since this decision was made, the Board of Trustees have determined that a team like this may properly be admitted as a competitor for these premiums.

in plowman and driver, and perfect discipline in the team. To this work was awarded the first premium.

RECAPITULATION OF PREMIUMS.

Samuel Jenkins, jr., Andover,	1st,	$12
George P. Wilkins, Middleton,	2d,	10
Samuel Jenkins, Bradford,	3d,	8
John F. Carlton, Andover,	4th,	6
James Stevens, 2d., Andover, a gratuity,		6

In attempting to discriminate among the performances of so many so nearly equal, it would naturally follow, that there would be differences of opinion, in the minds of the committee; and probably their opinions may in some instances differ from others who examined the work. Several of the committee had much practical experience, both in *holding* and *driving*, and their opinions were particularly regarded in the decisions made. Where all did so well, it is not easy to say with *certainty*, which did the best. Much credit is due to all concerned, for their promptness in being ready for the work; starting precisely at the time appointed; and for the entire want of noise, and hurry and bustle, in their movements, and for the general propriety of the performance. Considering the hardness of the soil, and the difficulties of the work, we think it was as well done, as any match we have ever witnessed.

The plows used, were designed to lay the furrows flat. In a light soil, this is unquestionably the preferable mode of laying them. But it was the opinion of some of the committee, that on a heavy soil, like this, on land naturally moist and cold, it is better to leave the furrows somewhat broken, or a little on the edge, so that the atmospherical agencies may aid in pulverizing them. Especially if the plowing is in Autumn, when the furrows will be exposed to the frosts of the ensuing winter.

This Society has appropriated from $60 to $80 a year, for 20 years past, to encourage improvements in plowing. Not less than $1500 has been paid for this purpose. It is fair to inquire what benefits have result-

ed from this expenditure? It is not sufficient that it affords an interesting and exciting spectacle for the time, like any other game of hazard, but to justify the continuance of such appropriations, there should result some practical benefit. Having witnessed all the exhibitions in this county, and many of those in other counties, we may be permitted to testify as to their practical influence, and do say, without hesitation, that the premiums offered for the improvement in the construction and use of plows, next to those for the entire management of farms, have been among the most beneficial appropriations of the funds of the Society.

Who that remembers the structure of the plows in common use, *thirty years* since, and compares them with the best approved structures of the present time, will doubt on this subject? It is perfectly easy to demonstrate, that a saving of nearly one half the labor may be made, by proper attention to the forms and finish of the plow used. The prominent points to be considered in the structure of the plow, are, the power required to draw it; the ease or difficulty of directing it; and the manner in which it turns the furrow. The power of draft can be ascertained with great precision, by means of an instrument constructed for the purpose, placed between the end of the beam and the chain by which the plow is drawn. Actual observation shows, that some plows will do the same work with about half the power required by others. Suppose this to be so, then one pair of cattle on a plow of best construction, will effect as much as two pair on a plow of bad construction; and at the same time will probably leave the ground in better condition for cultivation. Take into view also, that the plowman himself can manage the team of one pair of cattle, without a driver, and that a driver will always be needed with two pair of cattle, and it is not extravagant to say, that in the ordinary plowing of our fields, one half the labour may be saved, by a proper attention to the structure of the plow and the discipline of the cattle. Let any of our farmers who have not been attentive to these improvements hereto-

fore, apply these principles on their own farms, and we will guarantee that they will save more than the whole amount of all their *taxes* (excepting the Grocer's *tax* for that which is not *bread*) in the first year of their application.

In the selection of plows, from the numerous approved patterns before the public, it will not do to rely entirely upon *certificates*. If you do, like to the medicines in use, perfection will be found in every shop. Some plows may be admirably adapted to turn a proper furrow, where the land is level and free of stones and other obstructions, that would not answer at all in rough and hard soils; others are specially designed to set the furrows on edge, turning but half over. Which of these is best, will depend upon the character of the soil, and the use for which it is intended. The Scotch farmers, who are not a whit behind even the shrewdest yankees in their agricultural improvements, prefer the plow that cuts a narrow furrow and sets it on edge. The cast iron plows that were introduced a few years since, from the upper part of the state of New York, broke the ground in pieces and left the furrows in most irregular condition; performing the double operation of a plow and harrow. The peculiarities of the plows now most popular are, that they cut wide furrows and lay them flat, leaving the surface when passed over with a roller, almost as smooth as before it was turned.

Among the valuable plows that have been offered to the public within a few years, those constructed by Mr. Pike, of Danvers, are entitled to a respectful notice. Rarely, if ever, have we seen better work than these plows turned out, when directed by the skillful hand of Mr. Tapley. If our recollection is right, the *mould-boards* and the *cutters* upon these plows were particularly well adapted to the purpose. We have the testimony of Mr. Colman, whose authority on matters connected with agriculture is second to that of no man among us, that "the best working plow he ever saw was made by Mr. Pike, of Danvers." It is to be hoped that a man who succeeded so well in his first attempts in the con-

struction of this useful implement, will persevere in this application of his labour.

If we would realize the full benefits to be derived from our plowing-matches, perhaps it would be well to follow them with the offer of suitable premiums for the cultivation of the field plowed. Let the distinguishing characteristics of each land plowed, be distinctly stated in the report of the committee; let the cultivation be similar on all, and the quantities of produce be noted on each;—then would the result show which work was best. That plowing must be best, which has a tendency to produce the best crops, whatever the form of the furrow or the beauty of its appearance.

Respectfully submitted, by

J. W. PROCTOR,
W. JOHNSON, JR.,
A. GRAY,
N. FELTON,
T. E. PAYSON,
} *Committee.*

Andover, Sept. 28, 1842.

WITH SINGLE TEAMS.

The Committee on plowing with single teams, REPORT:

That thirteen teams were entered, eleven of which were ready at the time appointed, and engaged in the work required. The field on which the work was done was situate in front of the Seminary buildings, adjoining that occupied by the double teams, of similar soil, in like condition. It was divided into lots, containing each one eighth of an acre, being about 17 rods long, and about 18 feet wide. The lots were assigned, and the plowing was required to be at least *five inches* deep. The work was done as follows—viz:

No. 1. Andrew F. Curtis, of Middleton; himself plowman; plow made by Winslow, of Middleton; 42½ minutes, 18 furrows. For this was awarded the 4th premium.

No. 2. Wm. R. Putnam, of Wenham ; himself plowman ; plow made by Howard, of Hingham ; 37 minutes, 16 furrows.

No. 3. Town farm in Danvers ; Warren Jewett, plowman ; plow made by Ruggles & Co. ; 27 minutes, 15 furrows. This work was done with more energy and dispatch than either of the others. But as the team was not regularly entered at the proper time, the committee did not feel at liberty to recommend a premium. The cattle were at least equal to any on the field.

No. 4. Asa M. Bodwell, of Methuen ; himself plowman ; plow made by Ruggles & Co. ; 40 minutes, 17 furrows.

No. 5. Nathan Tapley, of Danvers ; Joseph C. Putnam, plowman ; plow made by Ruggles & Co. ; 46 minutes, 16 furrows.

No. 6. Timothy F. Wilkins, of Middleton ; his son plowman ; plow made by Ruggles & Co. ; 44 minutes, 17 furrows. For this was awarded the 2d premium.

No. 7. Isaac Osgood, of Andover ; his farmer plowman ; plow made by Prouty & Co. ; 44 minutes, 18 furrows. For this was awarded the 3d premium.

No. 8. Allen Putnam, of Wenham ; his farmer plowman ; plow made by Howard ; 37 minutes, 16 furrows. For this was awarded the 1st premium.

No. 9. Perley Tapley, of Danvers ; himself plowman ; plow made by Ruggles & Co. ; 49½ minutes, 19 furrows. This work was well done—in the opinion of the Committee equal to any on the field ; but as the cattle used had heretofore obtained the Society's *first premium* for similar work, the Committee understood that a premium could not be awarded for this work, consistent with the established regulations and usages of the Society. If the Committee were misinformed on this point, Mr. Tapley will be entitled to a favorable notice from the Trustees. They cheerfully bear testimony to Mr. Tapley's superior skill in handling a plow.

No. 10. Edmund Bartlett, of Methuen ; himself plowman ; plow made by Prouty & Co. ; 48 minutes, 19 furrows.

No. 11. Silas H. Newton, of Bradford; himself plowman; plow made by Prouty & Co.; 49 min., 16 furrows.

RECAPITULATION OF PREMIUMS.

Allen Putnam,	1st,	$10
Timothy P. Wilkins,	3d,	8
Isaac Osgood,	2d,	6
Andrew F. Curtis,	4th,	4
Warren Jewett, a gratuity,		3

The Committee are unwilling to speak of the distinguishing characteristics of the work done by each team, or each kind of plow used, as they did not make minutes of the same on the ground, and they might not do exact justice by trusting to their recollection. In general the work was very well done. The plows were of good construction—made at four different establishments. The Committee forbear to speak of their comparative merits, as this will be done with more propriety by the Committee to whom this subject is specially assigned, if they shall be brought to their notice. In work of this kind, much, very much, depends upon the skill of the plowman. To hold a plow to the best advantage, requires much practical experience, and careful attention. It is also necessary that the cattle should be well trained to this kind of labour. With proper attention to these requisites most of our plowing can be advantageously performed with one pair of cattle, directed by one man. The experiments of this day, averaging 42 minutes time, for the plowing of one eighth of an acre of hard swarded, rocky grass land, show that an acre can be ploughed with six hours labour; which can reasonably be performed, day after day, by the same team; so that the breaking up of our common tillage land, when managed with proper economy, need not cost more than *two dollars per acre.*

Respectfully submitted, by

AARON C. PROCTOR,
THERON JOHNSON,
WM. FOSTER, JR. } *Committee.*

NOTE. Messrs. David Andrews and Richard S. Jaques, members of the Committee, were not present.

Andover, Sept. 28, 1842.

ON PLOWS OFFERED FOR PREMIUM.

The Committee to examine the plows entered for premium, REPORT:

That in consequence of the numerous claims, and of the interest manifested by the different manufacturers, they found it impossible to complete their examination in a manner satisfactory to themselves, on the day of the Exhibition. It was therefore postponed until the Tuesday following, when the Committee, with three others associated with them, by order of the Trustees, were occupied about five hours in the trial of the plows. There were ten plows presented, six of them made by Prouty & Co.; four of them made by Ruggles & Co. None others were offered. The committee regretted that they could not have had plows from other distinguished manufacturers, as they were desirous of making the comparison of merit as complete as possible.

There were three sizes of the Prouty plows, and three sizes of the Ruggles plows, nearly corresponding with each other, if we may judge from their prices, which did not vary more than one dollar in a plow; these prices ranging from $10, to $13,50. These plows appear to be designed to cut furrows, about as many inches in width, as they cost dollars: the depth of the furrows is easily regulated by the roller, on the front of the plow. Each of the plows was furnished with a roller and an upright cutter. All the plows were nearly new, and in as good condition as their owners could put them.

A piece of land about twelve rods square, was selected. It was rich, free of stones, and covered with a thick coat of grass; apparently it had been mown for six or eight years past. Two pair of oxen were used, the same on all the plows, and driven moderately; not so fast as is customary in common plowing, The competitors selected their own plowmen. It was agreed, before the work commenced, that the plows should be adjusted to cut the furrows as near six inches deep as practicable. The width of the furrow to be regulated

by the skill of the plowman. A dynamometer, graduated from 1 to 9, was used to indicate the power applied in the work. This was placed between the end of the beam and the chain, and the index was watched by two of the committee, in all its movements. At the end of each furrow they compared their observations, and took the average result of each plow. Two others of the Committee observed the width and depth of the furrows, and took the average result in the same manner. During the experiments, each of the committee held the plows, more or less, and examined with care the manner in which the work was done. Attention was given to the plows, as to the ease or difficulty of guiding; as to their running true, or wavering to or from the land; as to the manner in which the furrow slice was laid, whether flat or lapping, smooth or broken; and generally as to all those incidents which are considered constituents of good plowing. All these plows were designed to lay the furrows flat; and when drawn by the same team, but little difference was observed in their work, in this particular.

No.	Description of Plow	Power applied.	Depth of furrow.	Width of furrow.	Earth turned.	Result.	Earth turned by 100 pounds of power.
1.	PROUTY & Co's, A.	35	$6\frac{1}{4}$	$12\frac{3}{4}$	80	2.28	$18\frac{1}{3}$
2.	" B.	33	6	12	72	2.19	$17\frac{1}{3}$
3.	" C.	31	6	10	60	1.94	$15\frac{1}{2}$
4.	" C.	36	$5\frac{3}{4}$	10	58	1.61	13
5.	" A.	34	6	13	78	2.30	$18\frac{1}{3}$
6.	" A.	37	6	$13\frac{1}{4}$	80	2.16	15
"	" "	44	$7\frac{1}{4}$	13	94	2.14	17
	RUGGLES & Co's,						
7.	Sward C.	33	6	12	72	2.19	$17\frac{1}{2}$
8.	" "	40	$7\frac{1}{4}$	13	94	2.35	$18\frac{4}{9}$
"	" Eagle	33	6	11	66	2.00	16
9.	" Sward D.	$33\frac{1}{2}$	6	$11\frac{1}{2}$	69	2.06	$16\frac{1}{2}$
10.	" Eagle	33	6	$10\frac{3}{4}$	65	1.99	$15\frac{3}{4}$

The work thus stated was done with oxen. The numbers in the column of power applied, indicate

eighths of one hundred pounds. The number of square inches of earth turned, is ascertained by multiplying the width and depth of the furrow together; and the proportionate result is ascertained, by dividing the quantity of earth turned, by the power applied. The last column shows the number of square inches of earth turned by the application of one hundred pounds of power.

Work was done by plows Nos. 6 and 7, when drawn by a powerful span of horses as follows:

No.	Description of Plow.	Power applied.	Depth of furrow.	Width of furrow.	Earth turned.	Result.	Earth turned by 100 pounds of power.
6.	PROUTY & Co's, A.	40	$5\frac{1}{2}$	12	66	1.65	$13\frac{1}{3}$
7.	RUGGLES & Co's, C.	40	$6\frac{1}{4}$	12	75	1.87	15

In experiments of this kind, the *time* in which the work is performed, is an important item to be taken into consideration. This will be apparent, when we compare the work done by horses with that done by oxen. Probably, the furrows turned by the horses were done in two thirds of the time occupied by the oxen; that is, the horses would plow three furrows, while the oxen plow two. How long they would be able to continue to work in this manner, is proper to be inquired into. For if they could continue through the day, and the plowman could hold out to follow them, it is manifest that the result produced would be much in their favor. Especially when trained as, in the present instance, were Mr. Marland's horses, to use, without a driver, the plowman taking the whole charge of the team.

We have been thus particular in noticing all the incidents connected with these experiments, because in this way alone is it possible to approximate to a just comparison of merits;—and when this is done, certainty is not attainable. Very much depends on the skill and adroitness of the plowman. A little additional attention would add one inch to the width of the furrow. Care to keep the plow true without pressure upon the handles, will lessen the power of the draft. So that the

result produced may be essentially varied, by a skillful handling of the plow.

Plows Nos. 1 and 2 were entered by Joseph Kittredge, of Andover.
No. 3 by Prouty & Mears, of Boston.
No. 4 by Seth Kimball, of Andover.
No. 5 by Samuel Jenkins, Jr., of Andover.
No. 6 by John F. Carlton, of Andover.
No. 7 by Ralph H. Chandler, of Andover.
Nos. 8 and 9 by Wm. S. Marland, of Andover.
No. 10 by Joseph C. Putnam, of Danvers.

While examining the work, your committee had some doubt whether the dynamometer indicated truly the actual power in pounds weight applied by the team ;—but a re-examination of the instrument, as to the manner in which it is graduated, by the actual suspension of so many pounds weight upon it, as well as the assurance of the Editor of the N. E. Farmer, who has much practical experience in these matters, has removed these doubts. Our conclusion is, that the actual power applied to draw a plow in common grass land, varies from *three hundred* to *six hundred* pounds,—depending upon the structure of the plow and the skill of the plowman ; and that by proper attention to these considerations, and due care in obtaining plows of the best construction, one half of the labour and expense of plowing may be saved, as compared with the manner in which it is usually done.

Thus far your Committee found their duty a pleasant one, because they felt they were eliciting valuable information on a useful subject. But when they came to review their minutes, and to attempt to discriminate, where the shades of difference were so very slight, it was no easy task to be assured, which of several should have the preference.

From the plows made by D. Prouty & Co. we selected No. 5, entered by Samuel Jenkins, Jr., and No. 6, entered by John F. Carlton.

From the plows made by Ruggles, Nourse & Co. we selected No. 7, entered by Ralph H. Chandler.

On a comparison of these, on the conditions for which the premium was offered, viz :—"For the best plow, character of the work done by it, easiness of draught, workmanship, and cost of implement, being taken into consideration," your Committee unanimously agreed to recommend that the premium of *ten dollars* be awarded to Ralph H. Chandler, of Andover, for his plough, made by Ruggles & Co., sward C., costing *twelve dollars*. This was the largest size, from these manufacturers, on the field. We understand that they have one size larger. But we had no opportunity to compare the work of the largest size of the Ruggles plows. In the experiments we made we found, as a general result, that the larger plows did the most work, in proportion to the power applied.

At the same time we give this preference, because such is the conclusion to which we came, we do not think that the manufacturers of the other plows should be at all discouraged, in further attempting the perfection of this most important instrument of agriculture. We hope that one or more premiums of this description will be annually offered — that the attention of ingenious artists will be directed to the subject ;—and that the contest for superiority will be continued, so long as efficient laborers and patient committees can be found ready and willing to devote their attention.

To Messrs. Clark, Chandler and Marland, for the free use of their teams, and to Dr. Johnson, for the accommodation of his land, we desire to express the thanks of the Society.

Respectfully submitted, by

MOSES NEWELL,
W. SUTTON,
HOBART CLARK,
N. W. HAZEN,
J. W. PROCTOR,
A. T. NEWHALL,
} *Committee.*

Andover, October 4, 1842.

WITH HORSE TEAMS.

The Committee on Ploughing with Horse Teams, respectfully REPORT:

That 5 teams were entered for premium, and performed their work as follows:

	Time.	Furrows.
Land No. 1, Seth Kimball, of Andover,	51 m.	17
" " 2, Plummer Weeks, of "	46 "	15
" " 3, Wm. S. Marland, of "	54 "	16
" " 4, John A. Stevens, of Methuen,	45 "	17

" " 5, Joseph C. Putnam, of Danvers, quit the ground after the second round.

To Seth Kimball, of Andover, they award the first premium of eight dollars.

To John A. Stevens of Methuen, the second premium of six dollars.

Your committee would remark, that the ground selected was very rocky, and that there was considerable inequality in the several lands.

In awarding the second premium, it was difficult to determine which of the two, numbers 2 or 4, was entitled to it; and their decision is, that a slight preference should be given to number 4; to number 2 a gratuity of four dollars is recommended, should it come within your rules.

Soon after starting, number 3 unfortunately broke the share of his plough, which, of course, injured his work. The whole work was, in the opinion of your committee, of a character highly creditable to the competitors.

The ploughs used by Nos. 1, 2 and 4, were of the manufacture of Prouty & Mears. That of No. 3, of Ruggles, Nourse & Mason.

In behalf of Committee,

WM. P. ENDICOTT.

Andover, Sept. 28, 1842.

ON WORKING OXEN AND STEERS.

The Committee on Working Oxen and Steers, having attended to that duty, would respectfully REPORT:

There were twenty-three pair of working oxen entered, and seventeen pair appeared on the ground.

Most of them appeared very well, and all drew well, but some were very deficient in backing. Your committee were unanimous in awarding the premiums as follows:

First premium, of ten dollars, to Doct. Joseph Kittredge, of Andover.

Second premium, of seven dollars, to Charles Foster, of Andover.

Third premium, of five dollars, to Joseph Holt, Jr., of Andover.

First premium, of seven dollars, for steers, to Wm. Peters, of Andover.

Second premium, of five dollars, to John F. Carlton, of Andover.

All of which is respectfully submitted.

ERASTUS WARE,
JOSIAH F. ABBOTT,
FARNHAM SPOFFORD, } *Committee.*

Andover, Sept. 28, 1842.

ON STEERS.

The Committee on Steers REPORT:

That there were four pair of three year old steers entered for premium.

One pair by Ralph H. Chandler, of Andover.
" " " Allen W. Dodge, of Hamilton.
" " " Amos Berry of Andover.

Two pair of two year old steers:

One pair by Isaac Osgood, of Andover.
" " " Charles Foster, of Andover.

One pair of yearling steers, twins, by Jacob Farnham, of Andover.

One pair of steer calves, 5 months old, by Thomas E. Payson, of Rowley; and two pair by Samuel F. Barker, of Andover.

The committee consider the three year old steers of a superior quality, as to size, training, and also as to being well matched.

The two years old steers were not considered superior as to size or appearance.

The yearling steers were of common size, and so well trained, that a small boy could drive them in the yoke, in any direction, at pleasure, among the crowd of spectators.

The steer calves of Mr. Payson, were from Durham stock; one of them is considered a superior calf.

The four calves of Mr. Barker, of Andover, were of fair quality. It was not ascertained of what stock.

After a good deal of hesitation and repeated examination, the committee have agreed to award the first premium, of seven dollars, to Allen W. Dodge, of Hamilton, for his three year old steers.

To Joseph Kittredge, of Andover, the second premium, of five dollars, for his three years old steers.

The second premium, of four dollars, to Charles Foster, of Andover, for his two years old steers.

The first premium, of four dollars, to Jacob Farnham, of Andover, for his yearling steers.

They also recommend a gratuity of two dollars to Ralph H. Chandler, of Andover, for his three years old steers.

Also, to Thomas E. Payson, of Rowley, a gratuity of two dollars for his calf.

Also, a gratuity of two dollars to Samuel F. Barker, of Andover, for his four calves.

For the Committee,

MOSES NEWELL.

Andover, Sept. 28, 1842.

ON FAT CATTLE.

The Committee on Fat Cattle have attended to their duty, and respectfully Report:

That only three pair of oxen were entered for premium.

One pair by Charles B. Lander, of Danvers.
" " " Alexander Davidson, of Andover.
" " " Joseph Kittredge, of Andover.

The Comittee have awarded to Joseph Kittredge, the first premium, of fifteen dollars, for his near ox.

To Alexander Davidson, the second premium, of ten dollars, for his near ox.

Your committee would remark, that, considering the abundant crops of feed the present season, they were surprised at not seeing more fat cattle. The pair offered by Mr. Lander, were good cattle, but as but two premiums were offered, they were excluded.

AMOS KIMBALL,
OLIVER EMERSON, } *Committee.*
OTIS BAILEY,

Andover, Sept. 28, 1842.

ON BULLS.

The Committee on Bulls Report:

That there were entered ten bulls; two for exhibition, and eight for premium.

The two first, one a full-blooded Ayreshire, belonging to William S. Marland, the other a half-blooded Durham, belonging to Josiah Crosby, having received the Society's first premium, were entered for exhibition. The committee, much pleased with the above animals, were unanimous that they were equal to any ever exhibited in the county, and for the interest which the above gentlemen took in the exhibition, they are entitled to the thanks of the Society.

The committee award the first premium, of ten dollars, to Enoch Silsby, of Bradford, for his full-blooded Durham short-horn, two years and five months old, from imported stock, as appeared by statement.

They award the second premium, of eight dollars, to Thomas E. Payson, of Rowley, for his full-blooded Durham, two years and five months.

They award the third premium, of six dollars, to William P. Endicott, of Salem, for a full-blooded Durham, short-horn, four years.

They award the fourth premium, of four dollars, to Benjamin Boynton, jr., of Andover, for a half-blooded Durham, two years and two months.

There were several other bulls of promise, particularly, the bull Napoleon, belonging to George Hood, of Lynn.

There were also several bull calves; one from the Indian Hill farm, belonging to Benjamin Poor, which the committee consider a superior animal, and for which they recommend a gratuity of three dollars.

They farther recommend a gratuity of two dollars, to Charles B. Lander, of Danvers, for a three-quarters Durham bull calf.

They also recommend a gratuity of two dollars to Daniel P. King, of Danvers, for a three quarters Durham bull calf.

All which is respectfully submitted,

For the Committee,

JOSEPH KITTREDGE.

Andover, Sept. 28, 1842.

ON COWS AND HEIFERS.

The committee on Cows and Heifers, having attended to their duty, make REPORT as follows:

The number entered for premiums and exhibition was larger than at some former years, although not equal to what might have been expected from that part of the county in which the exhibition was had. A number of

cows and heifers were entered for exhibition only. An imported cow from Bartlett farm, Methuen. A large, fine cow, not in milch. A very beautiful, half-blood heifer, twenty-eight months old, belonging to Daniel P. King, of Danvers, with a bull calf, three months old. The heifer was of fine size, form and colour, and gave much promise for her milking qualities.

A number of cows and heifers were entered for premium, but were not accompanied with a statement sufficiently exact to entitle them to the Society's premium. The committee had much difficulty in determining to whom the several premiums should be awarded, owing in part to the different manner in which the animals had been kept, some having had grain while others had none; they, however, assume the position that the farmers of the county of Essex do not consider it good policy to feed cows with grain during the summer season. Therefore, other things being equal, they award to those that have had no extra feed in preference to those that have.

The first premium of ten dollars, they award to Joseph Kittredge, of Andover, for his cow, nine years old.

The second of seven dollars, to Jeremiah Stickney, of Rowley, for his cow, eight years old.

The third, of five dollars, to George Hood, of Lynn, for his cow Countess, six years old.

On heifers, the first premium, of seven dollars, to William S. Annis, of Methuen.

The second, of five dollars, to William S. Marland, of Andover.

Respectfully submitted, for the Committee,

DEAN ROBINSON.

Andover, Sept. 28, 1842.

JOSEPH KITTREDGE'S STATEMENT.

To the Committee on Cows and Heifers:

I offer for premium, my cow Fairface. She calved the last of April. Her calf was taken from her the 1st

of June, between which time and the 24th of Sept., she has given 3740 pounds of milk, being an average of 32 pounds a day. From an experiment made to try the quality of her milk, I found it took 26 pounds of her milk to make a pound of butter. The above cow is 9 years old, and has had nothing but pasture feed.

I also exhibit for premium, a heifer 2 years old, from the above cow. She calved about the middle of May; her calf was taken from her the 1st of June. Her milk has been weighed regularly since that time, until the 24th of Sept. She has given 2409 pounds of milk, being an average of 21 pounds a day. From an experiment made with her milk, I find a pound of butter can be made from $23\frac{1}{2}$ pounds of milk. She has been in the same pasture with her mother during the summer, and has had no extra feed.

Respectfully submitted,

JOSEPH KITTREDGE.

Andover, Sept. 28th, 1842.

JEREMIAH STICKNEY'S STATEMENT.

To the Committee on Cows and Heifers:

GENTLEMEN—The cow which I offer for premium is eight years old. She calved in March, and has given since 35 lbs. of milk daily on an average. We have made from her on an average 35 lbs. of butter per month, and have used milk sufficient for the other uses of a very large family besides, and have kept no other cow. She has been fed on hay and grass only. Her butter is of the best quality, and she will milk up to her calving, on common feed.

JEREMIAH STICKNEY.

Rowley, Sept. 27, 1842.

GEORGE HOOD'S STATEMENT.

To the Committee on Cows and Heifers:

GENTLEMEN—The Cow Countess which I have enter-

ed this day for exhibition, is 6 years old. She was raised in this town. The sire, a native bull, a fine animal. The dam, Dolly, an extraordinary milker, bred by Benj. J. Phillips, Esq., of this town, and believed to be a full blood Durham short horn. A particular description of her may be found in Colman's 4th Report, No. 10, page 276. The quantity of milk which she has given at different periods is there stated. I have owned her three years, and she has averaged 16 qts. per day for 6 months. In January 1840, she gave 565 qts. milk measured out, averaging over 18 qts. per day in the coldest winter month. She is remarkable for transmitting her milking qualities to her offspring. Several of her calves have been raised here, and are nearly equal to her.

This Cow Countess bids fair to excel her dam. I purchased her in Sept. 1839—she had her second calf the Oct. following, and she gave for some months afterwards 14 qts. milk per day, being then in the 4th year. She has since had two calves, and has increased and given a large quantity of milk, but being kept on the farm with 20 other cows, no account has been kept of it, until May last. She had a calf on the 3d of May, and from the 12th a record was kept of the weight of her milk, a statement of which is herewith submitted. During the time stated, 138 days, she has given 5956 lbs. or 2382 qts. averaging $17\frac{3}{4}$ qts. per day. I intend to continue the account, and ascertain how much she will give in a year. She holds out well, and will give milk up to time of calving, but I prefer to dry my cows, and give them 6 weeks rest. If they have this time to recruit I think they do better.

The milk from this cow is rich and makes excellent butter. She is kept on a milk farm, and the quantity of butter she would make has not been fairly tested. From the 12th to the 18th June last, she gave $335\frac{1}{2}$ lbs. milk, being $19\frac{1}{7}$ qts. per day for 7 days. This milk was set and produced 15 lbs. of butter. The milk was carried two miles in cans, and it was about two hours before it was set, which probably lessened the quantity of cream. I think she would produce 18 lbs. of butter per week on

a fair trial. She has had a good pasture, and been fed with oats and corn, cut green at morning and evening. During the past 4 months she has had 5 bags of wheat bran or shorts. This cow has not before been offered for exhibition.

If any further information in regard to her is desired by the committee, I shall be happy to furnish it.

Respectfully, yours, &c.,

GEORGE HOOD.

Lynn, Sept. 27, 1842.

[NOTE. By well authenticated statements it appears that Mr. Hood's cow produced from May 12th to Sept. 26th, 138 days, 5956 pounds milk; greatest quantity in one day, 53 pounds.]

WM. S. ANNIS'S STATEMENT.

To the Committee on Cows and Heifers:

GENTLEMEN—I offer for premium, a young cow, two years and three months old. She has given thirteen quarts of milk in one day. She gives now eight quarts. In summer, when she gave most, she had nothing but grass. She has now one quart meal and oats.

WM. S. ANNIS.

Methuen, Sept. 27th, 1842.

ON SWINE.

The Committee on Swine REPORT :

That the show in their department has been meagre, compared with most parts of the day's exhibition. The only entries were by

Levi Davis, of Andover—sow and pigs.
Josiah Crosby, of Andover—one boar, five pigs.
William S. Marland, Andover—sow and two pigs.
Master George Gould, Andover—one Berkshire sow.
Bailey Loring, Andover—four pigs, one boar.

After examination, and a hunt for Master Gould's Berkshire sow, which was unsuccessful, the committee unanimously agreed to recommend that the Society's first premium, of five dollars, be awarded to William S. Marland, of Andover, for the best breeding sow. Two pigs, four months old, by her side, were of superior excellence, but were not enough in number to entitle them to a premium. For the best litter of weaned pigs, they recommend the first premium, of six dollars, to Bailey Loring of Andover.

The second premium, of three dollars, to Josiah Crosby, of Andover.

Mr. Levi Davis's pigs were pretty for their age, but being only four weeks old, are not entitled, by your rules, to a premium.

Your committee were honored also with power to sit in judgment upon sheep. After all due search, they were able to find only a solitary *lamb*, and when found, it was thought enough to make mention of the fact. For the Committe,

A. DURANT.

Andover, Sept. 28, 1842.

ON HORSES.

The Committe on Horses Report:

That there were two entries; one by James Abbot, of Andover, a sorrel colt, three years old last July. The colt was well formed, but of a small size, and not considered one that will make a horse commanding high price, unless her speed will add much to her value; not being thoroughly broke, the committee had no means of judging as to that property.

A mare and colt by Thomas Wellwork, of Andover. The mare, of small size; the colt, four months old, over middling size; said to be from the sorrel horse, Black Hawk, which stands high as a horse of blood, speed and bottom.

We should recommend for the improvement of our stock of horses, that mares of a large size be put to this celebrated horse.

The committee recommend a gratuity, of two dollars, to James Abbott, for his three year old colt.

Also, a gratuity, of three dollars, to Thomas Wellwork, of Andover, for his colt, four months old.

The committee understand no premium is offered for the exhibition of horses or colts; and that it was discontinued on the ground that premiums had been awarded to animals of inferior qualities.

They do not consider this a reason sufficient, and they do consider that our stock of horses need improving, and that the farming community have means at command to do it, and would recommend to the trustees to revise the decision they have come to in this particular.

EASTMAN SANBORN.

Andover, Sept. 28, 1842.

ON STOCK FROM OTHER COUNTIES.

The Committee for the examination of Stock, from other counties, respectfully REPORT:

A communication from H. C. Merriam, Esq., of Tewksbury, was referred to the committee. He states, that at the request of some members of the Society, he had sent some of his stock for exhibition. Mr. Merriam was kind enough to send a pair of five years old steers. A bull fourteen months old, and two heifers; all of the stock of Hon. John Wells.

He also sent a roan cow, four years old, and a heifer, three years old, Durham stock, and two other heifers.

The attention paid by Mr. Merriam to his stock, and their superior quality, is well known. In the opinion of the committee, the Society is much indebted to him for the interest he has taken in their exhibition; and they deeply regret that they had not an opportunity to examine the stock above enumerated, as the animals all

unfortunately escaped from the pens, and were not recovered in season for examination. They hope Mr. Merriam will not be discouraged from sending a portion of his stock on a future occasion.

The committee, however, have examined, and with great pleasure, a pair of large, fat oxen, belonging to Mr. Merriam. In their opinion, these oxen would be distinguished at any cattle show, in this or any other county. They appear to be *first rate*, in every respect.

L. SALTONSTALL,
E. SILSBY,
J. KITTREDGE,
} *Committee.*

Andover, Sept. 28, 1842.

ON THE DAIRY.

The Committee on the Dairy would REPORT:

That there has not been so much interest manifested among our good dairy women, the present year, as would be desirable. There were but four entries of June butter. Some of it was of very good quality.

We recommend the first premium of ten dollars to be awarded to Wm. R. Putnam, of Wenham ; the second premium of eight dollars to Daniel Putnam, of Danvers.

There were six lots of September butter entered for premium (a part of it, however, was not entered with the Secretary). Your committee were of opinion that some of the claimants were not acquainted with good butter, and were not aware how theirs would compare with it.

We however recommend the first premium, of ten dollars, to Nathaniel Felton, of Danvers, the second premium, of eight dollars, to Isaac Carruth, of Andover.

There were but four lots of cheese entered for premium ; but it was all of very good quality, and it was with some difficulty your committee could decide which deserved a premium the most. We however recommend the first premium, of ten dollars, to be awarded to

widow Lucy Osgood, of Andover; the second premium, of eight dollars, to Isaac Carruth, of Andover.

Per order of the Committee.

JOSEPH HOW, Chairman.

Andover, Sept. 28, 1842.

WILLIAM R. PUTNAM'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN—I present for your inspection a pot of June butter, containing 37 lbs.

Process of making:—The milk is strained into tin pans; it stands 48 hours, if the weather is cool; the cream is then taken off and put into tin pails and stirred occasionally, and a little salt put in. We churn twice a week. When the butter-milk is drawn from it we rinse it thoroughly in cold water; it is then taken from the churn, worked in part, salted, and a quarter of an ounce of sugar added. In about 24 hours it is again worked and put into the pot. It has been kept in the well, during the summer, about 15 feet from the top.

We have on the farm eleven cows, one of which was farrow last winter, and three of them were heifers with their first calves. The calves were not all sold until the first of July, so that we cannot state precisely what quantity we made per cow The whole quantity made, from the first of June to the ninth of July, was 262 lbs. We used what milk was necessary for the family. The feed of cows was a common pasture.

WM. R. PUTNAM.

From R. C. Winthrop's farm,
Wenham, Sept. 26, 1842.

DANIEL PUTNAM'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN—The firkin of June butter presented for your notice contains 50 pounds.

Process of making :—The milk is strained into tin pans ; stands 36 hours ; then the cream is taken off, put into tin pails, and occasionally stirred. We churn twice a week. When the butter is gathered, the butter-milk is drawn off, the butter is rinsed in two waters, then is taken out, worked in part, salted, (one ounce of salt to a pound of butter, and a quarter of an ounce of loaf sugar to the same quantity,) and set in the cellar for 24 hours, after which the working is completed, and it is placed in the firkin. It was kept in the cellar during the summer.

The number of pounds made from the first of June to the 9th of July was 273, from seven cows the three first weeks, afterwards from eight.

DANIEL PUTNAM.

North Danvers, Sept 28, 1842.

NATHANIEL FELTON'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN—I present for your inspection, two boxes of September butter, containing 25 pounds, being a specimen of 889 pounds, made since the 20th of May.

Process of making:—The milk is strained into tin pans; it stands from thirty-six to forty-eight hours in a cool cellar, when the cream is taken off, put into tin pails and stirred every day. We churn once a week. During the warmest weather, the cream is placed in the well about twelve hours before churning. After it is churned, the butter-milk is thoroughly worked out, and the butter is salted to the taste; after standing about an hour, it is again worked, and weighed, each pound separately.

This butter was made from the milk of eight cows; the feed was common pasturing till the middle of August; since then, they have had green stalks once a day. We have sold and used in the family about three gallons per week. NATHANIEL FELTON.

South Danvers, Sept. 27th, 1842.

ISAAC CARRUTH'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN—I offer for your inspection, a lot of butter, made in Sept. We have milked four cows this season, one of them was milked the last winter. We use one cow's milk in our family, which leaves but three to make butter and cheese from. From the 15th of May to the last of August, we made 174 pounds of new milk and 281 pounds of four-meal cheese, and up to this time 204 pounds of butter. The feeding of the cows has been grass only. The general management of my dairy is to make butter and four-meal cheese until the hot weather commences, then we make new cheese until about the last of August, then butter, &c.

The process of making is to strain the milk into tin pans, set it in the coolest place, to remain thirty-six or forty-eight hours, depending on the weather; the cream is then taken off and churned twice a week. After the butter is taken from the churn it is salted in part, set in a cool place, to remain until the next day, when it is wrought with the hands until all the butter-milk is out; then it is salted to the taste, which I should think took about a tea-cup of salt to six pounds of butter, with the addition of one ounce of the best refined sugar to two pounds of butter.

Yours respectfully, ISAAC CARRUTH.

Andover, Sept. 27th, 1842.

LUCY OSGOOD'S STATEMENT.

To the Committee on the Dairy:

The following statement is respectfully submitted to the Committee on the Dairy, by Lucy Osgood, widow of the late Mr. Jacob Osgood, who continues to carry on the farm owned by him, and is aged seventy-four years.

Butter and four-meal cheese made by her in May, June, and September:—

Butter made,	143 pounds.
Four-meal cheese made,	246 do.

New milk cheese made by *her* since the 22d of June, July and August, 601 pounds.

The above quantity of butter and cheese was made from the milk of five cows and three two year old heifers, (two of the cows gave milk through the winter,) deducting that of two which was needed for family use. The cows had only the common keeping, grass only. The process of making the new milk cheese:—Strain the milk into a brass kettle, set it in a tub of cold water. In the morning it is warmed and mixed with the morning's milk; the rennet is put in and stirred well; let it stand one hour, or till the whey appears; cut the curd with a knife that goes to the bottom of tub and the curd will gradually settle; lade off the whey, and cut the curd; press the bowl or pan with one hand gently on the curd, the other with a tin dish made in the form of a clam shell; when the whey is mostly extracted from the curd, one gallon or more of boiling whey is turned upon it; then cut the curd as before, cover the tub, let it stand fifteen or twenty minutes, dip the curd with a flat dish into a pan, and lay it in the basket to drain; cut it frequently with a knife, till there is no appearance of slip curd; it is then put into a bowl or tray and chopped fine; three gills of fine salt, one sixth of a teaspoon-full of saltpetre. It takes four or five hours with diligent attention to mature the curd fit for the press. The cheese is turned twice a day for three days; when carried into the chamber, it is swathed six or eight days, to prevent it from spreading; turned once a day till cold weather; then carried into the cellar, laid on a table, and rubbed and turned twice a week.

Respectfully yours,

LUCY OSGOOD.

Andover, Sept. 27th, 1842.

ISAAC CARRUTH'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN—I present for your inspection, six cheeses made in July. We have milked four cows through

the season, and one was milked through the last winter. We use one cow's milk in our family, therefore we calculate but three cows to make butter and cheese from. From the 15th of May to the last of August, we have made 174 pounds of new milk and 231 pounds of four-meal cheese, and up to this time 204 pounds of butter. The feeding of the cows has been grass only. The process of making you will find fully stated in the Society's Transactions of 1841.

Yours respectfully,

ISAAC CARRUTH.

Andover, Sept, 27, 1842.

IMPROVING MEADOW AND SWAMP LANDS.

The Committee on Improving Meadow and Swamp Lands REPORT:

That the attention of your committee has been called to one claim only for improving these lands—that of Daniel P. King, of Danvers. Mr. King has made experiments on several pieces of meadow lands, with good success, the crops of hay, the first season after sowing, with the pairings of the meadow for manure, having more than paid the expense of reclaiming. His statement, herewith submitted, will explain his mode of reclaiming and cultivating said land.

Your committee regret that more claims for premiums have not been made the present year, so that by the statements of claimants the process of draining and cultivating, and of the different kinds of crops produced with the greatest success, might have been made more generally known; but notwithstanding there has been but one claim presented, they have the pleasure to know that there are many pieces of these lands now in the process of reclamation within the County, that many pieces that have been worked but a few years are very productive in grain, grass and vegetables, and that the result of the experiments already made has raised

the value of these lands very much within two or three years past. Our meadow and swamp lands, where they can be drained at a reasonable expense, are now worth from fifty to one hundred dollars per acre, and all doubts as to the utility of redeeming these lands from the mortgages of water, bushes, &c., under which they have so long been lying, have passed away, as the whole expense of rendering them productive, exclusive of draining, according to statements made by several gentlemen who have kept accurate accounts of the cost for labour, manure, &c., has been reimbursed by the crops of one or two years at most, and in some instances including the cost of the land and draining. See Mr. Osborn's statements in the Reports of the Society in 1838 and 1839. The time seems to have passed by when prejudice and want of confidence in the success of the undertaking shall, as heretofore, prevent reclaiming and cultivating these lands; and hearing farmers speak upon this subject at the present time, it will hardly be credited that some thirty or forty years ago, a man who should have undertaken to drain a piece of meadow land, and to have carried on sand, loam, or gravel, for the purpose of rendering it productive in grain or the best of grasses, would have been laughed and sneered at, as was Noah of old when he built the ark.

The committee, having viewed Mr. King's meadow and examined his statements, recommend the Society's first premium of twenty dollars be awarded to him.

ASA T. NEWHALL.
ALLEN PUTNAM.
RICHARD PHILLIPS, Jr.

DANIEL P. KING'S STATEMENT.

To the Committee on Reclaiming Meadow Lands:

Gentlemen—I have made several experiments in improving wet meadow and peat lands which I will, as briefly as possible, state to you.

On land which admits of ploughing, I have planted potatoes on coarse stable manure; after removing the crop, I have sowed winter rye and herds and red top seed, as late as November, and they have always grown well and given good crops. After a few years the grass will degenerate, and I have found unleached wood ashes the best application to invigorate the soil.

I have spread gravel and the accumulations under an old barn floor on a wet meadow, and sown grass seed, and the crop has been very heavy.

In 1839, I ploughed forty poles of peat meadow, and planted potatoes on coarse stable manure. I harvested in the fall sixty bushels of excellent potatoes. The next spring I again ploughed, and applied a compost of fifteen bushels of bone manure and three cart loads of loam; on this I raised a large crop of sugar beets and ruta baga; one of the former, weighing with the tops, seventeen pounds, and one of the latter, twenty five pounds. The ground appeared like a rich bed of compost, and I carted from it ten cords which I spread upon upland grass. In the fall, one cord of horse manure was ploughed in and winter rye and grass seed sown. In July, 1841, 8 bushels of rye were reaped, and soon after, a good crop of grass. In August, of the same year, a second crop of grass was cut on this piece. This year, the first crop of hay was fifty hundred to the acre, and the second, twenty.

I have drained four other pieces which were so miry that oxen could not travel over them. The peat for fuel fully pays the expense of ditching. The annual crop before my improvement was not worth a shilling per acre: it was buck horn and low bushes. This meadow has been pared with a topping knife to the depth of three and four inches, according to the depth of the wild grass and roots, then cut into squares of fifteen inches and inverted. Coarse stable manure has been wheeled on, potatoes dropped and covered with the loosest sods. Little labor is required in hoeing. The crops of potatoes have been good in quantity, and excellent in quality. Till this year, when a part of the

meadow was flooded by the heavy rains in June, the crop has been two hundred bushels to the acre. Cabbages and beets have also done well. After securing the crop of potatoes, I have taken off the loose toppings and used them for compost. The quantity removed is not far from sixty cords to the acre. The toughest and most rooty sods I have burned on the meadow, and spread the ashes, but the ashes so applied, have not equalled my expectations. After removing the sods, the surface was levelled with rakes, and winter rye and grass seed sown, This was on the sixteenth of November. Early in the spring, I spread on the meadow woolen waste from a carpet factory, and on a part of it, a compost of hen manure and loam. The latter produced a most luxuriant growth. The rye was partly winter killed, but what survived was rank and heavy. After reaping the rye, more than thirty hundred to the acre of grass and stubble was mowed, and another crop might have been made, but I preferred to feed it off.

The present season I have treated two parcels in the same manner except that I have sown foul meadow with the herds grass and red top, and I have not sown rye, for I find that ordinarily the grass will be forward enough to mow the summer after sowing in the fall. I had doubts of the expediency of sowing so late as November, but my success has encouraged me to repeat the experiment. I have a compost of loam and stable manure, which I intend to spread on my reclaimed meadows. I consider them the most profitable land for grass, and the toppings removed afford a rich contribution to the barn yard, pig pen, and compost heap.

The quantity of land on which I have made experiments, exceeds three acres.

Respectfully submitted, DANIEL P. KING.

Danvers, Nov. 1, 1842.

ON AGRICULTURAL IMPLEMENTS.

The Committee on Improved Agricultural Imple-

ments have attended to that service, and ask leave to REPORT:

There were only three articles exhibited to your committee for premium, neither of which, in the opinion of the committee, were within the rule for premium.

Mr. Charles B. Lander, of Danvers, exhibited a Market Wagon, the body placed upon eliptical springs, so as to bring it very near the ground. This is a very neat and convenient carriage, and of good workmanship. A gratuity of three dollars is recommended to be paid to Mr. Lander.

Mr. Sargeant A. Morse, of Topsfield, exhibited a model of twelve Ploughs to run abreast of each other. Your committee are of opinion that if it were practicable to use a machine built after this model, it would be better done in the western country and propelled by steam.

Mr. Sylvester Stevens, of Stoneham, exhibited a revolving Straw Cutter, which was considered an improvement upon similar machines of this description, and a very fine article. A gratuity of six dollars is recommended to be paid to him.

Respectfully submitted, per order,

HOBART CLARK.

Andover, Sept. 28th, 1842.

ON FATTENING CATTLE AND SWINE.

The Committee on Fattening Cattle and Swine beg leave to make the following REPORT:

But one claim for the premium was entered, viz: by Mr. Joseph How, of Methuen, accompanied by an exact and minute detail of the manner of feeding five swine, for the space of ninety-six days, ending Nov. 28th, 1842. This statement is herewith transmitted, which, we think, will not fail of arresting the attention of the fatteners of swine.

The committee were unanimous in awarding him the first premium of fifteen dollars.

No claims have been entered with the committee, for fattening cattle, and as we have very little experience ourselves upon the subject, we will dismiss this part of our duty.

With respect to the fattening of swine, we have a little more experience; we usually fat one a year.

Considerable has been said, of late years, in this county, respecting apples, as food for swine.

For the last three or four years, we have been in the practice of giving all our refuse apples to our swine. The last year, viz. 1841, we gave him nothing else, except the common wash of two cows and a small family, for the space of three months, and he had had but three bushels of meal when he was slaughtered. He was of the China breed, small boned, and weighed in December, twenty months old, 289 pounds.

The swine that we are fattening this year, has had the same food till the apples were exhausted, when raw potatoes were substituted, and has up to this time only eaten four bushels of meal; he will probably weigh between 350 and 400 pounds, dressed, being of the common native breed.

We have not been able to discover any essential difference, in the progress of his fattening, on the various kinds of food, either on the apples, raw potatoes, or meal. A common sized hog will consume about half a bushel of apples, or a peck of potatoes, or half a peck of meal per day. The feeding with uncooked potatoes was suggested by a good farmer of Topsfield, who has been in the practice of feeding his swine with them for many years, and is of opinion that they are quite as good as when cooked. We have taken particular notice of his swine for several years, both before and after killing, and it always has been good. All his stock is of the first order of thrift, and his whole farm gives evidence of being managed by a good farmer.

There does not appear any difficulty in making swine eat raw potatoes, if they are accustomed to them when young. As to apples they are very fond of them, especially sweet; and we think sweet better than sour,

inasmuch as swine will eat more of them. If uncooked potatoes are as good as cooked, of which I have no doubt, at least one half of the expense of feeding on potatoes is saved; for the expense of cooking must, at least, be as much as the cost of the potatoes before cooking, in small families. And we think from the few trials we have made with cooked apples, that they are quite as good without cooking.

It is perhaps unnecessary to say, that after the appetites of swine have been pampered up with cooked food, they will refuse that which is not cooked.

With respect to the quality of the pork, which I have made, by apples or potatoes, it has been distinctly pronounced good, by experienced raisers of pork, and I have never discovered any deterioration myself.

We have been told by a distinguished pomatist, in the county, that he kept half a dozen shotes, all winter, on the pomace of his cider-mill, without anything else, and that they did well. He enclosed ten or twelve square rods, where he deposited his pomace, with a temporary shelter for them. He makes five hundred or more barrels of cider in a year. Another gentleman told me, that for several years, since cider was not in so great demand, he had turned his swine into his orchard, and let them pick the apples for themselves, without any other attention, except watering, and that he was satisfied with their growth; that the trees were as much benefitted as the swine. For the apple trees, standing somewhat thickly, the swine kept the grass from growing, and the surface of the ground in a loose and mellow state, which increased the quantity of fruit.

Per order of the Committee,

R. A. MERRIAM.

Topsfield, Nov. 30, 1842.

JOSEPH HOW'S STATEMENT.

To the Committee on Fattenimg Cattle and Swine.

GENTLEMEN—I resolved the present season to try

several experiments to ascertain the comparative value of different kinds of food for swine; also, scalded and unscalded food. In consequence, however, of change of food, some of the swine did not eat well. I found the experiment would not be satisfactory to myself, and I in part discontinued it.

The following is the result of the experiment on scalded and unscalded meal.

On the 24th of August, I weighed five pigs, and put them into four pens, and fed them with the same quantity of meal; each pig was fed with 229 pounds of meal, in fifty-six days, to which was added about three pints of skimmed milk per day.

August 25th their weight was as follows:

Pig in pen No. 1, 106 pounds; fed on scalded meal.
" " " " 2, 110 " " raw meal.
" " " " 3, 99 " " " "
" " " " 4, 81 " " scalded meal.
" " " " " 73 " " " "

October 19th, I again weighed them; the result was as follows:

Pig in pen No. 1, 170 pounds; gain in 56 days, 64 lbs.
" " " " 2, 180 " " " " 70 do.
" " " " 3, 167 " " " " 68 do.
" " " " 4, 134 " " " " 61 do.
" " " " " 148 " " " " 67 do.

I then changed their food; those that had been fed with scalded meal, I gave raw meal; and those that had been fed with raw meal, I fed with scalded meal. And instead of feeding them three times per day, as I had previously done, I fed them but twice per day; but gave them the same quantity of food—166 pounds, in 40 days.

November 28th, I weighed them again, and the result was as follows:

Pig in pen No. 1, 209 pounds; gain in 40 days, 39 lbs.
" " " " 2, 213 " " " " " 33 do.
" " " " 3, 207 " " " " " 40 do.
" " " " 4, 183 " " " " " 35 do.
" " " " " 182 " " " " " 49 do.

Thus it appears that two pigs, fed on raw meal, gain-

ed in fifty-six days, 69 pounds each; and three pigs fed on scalded meal during the same time, gained on average 64 pounds each; also, two fed on scalded meal, gained in forty days, 36½ pounds each; and three fed on raw meal, during the same time, gained 41 pounds each.

After weighing the pig that weighed 183 pounds, I dressed it, and it then weighed 154 pounds.

That there should be no mistake in regard to the above experiments, I have fed them nearly all the time myself, and weighed them myself.

JOSEPH HOW.

Methuen, Sept. 27th, 1842.

ON THE CULTIVATION OF CROPS.

The Committee on the Cultivation of Crops, REPORT:

That claims were entered by Allen Putnam, of Hamilton, for corn.

Enoch Bradley, of Haverhill, for corn.

James Stevens, of Andover, for corn.

Overseers of the Poor, of Danvers, for summer rye.

John P. Webber, of Beverly, for wheat.

Their statements have been considered by the committee. Claims were entered by other gentlemen, who have not presented statements.

Mr. Stevens harvested seventy-two bushels of corn, from one acre, selected from four acres in the same field. About twenty-seven bushels of rye to the acre, were grown upon two acres, thirty-two poles of land—a part of the town farm, in Danvers. Mr. Webber states his crop of wheat to have been thirty-three bushels, on one acre sixty-five poles of land, about twenty-four bushels to the acre. All these are very good crops, and the statements give proof of judicious and successful cultivation; but they are not remarkably large, and do not seem to have been the result of any

peculiar mode of husbandry, which may be adopted by other farmers with the certainty of equally successful results.

Mr. Stevens says, that in preparing the land, he had no view to planting for a premium, and his statement does not give the quantity or kind of manure applied on this or previous years, or the kind of corn planted. A part of the land described by Mr. Webber, had been sown to onions, and dressed annually with manure and marsh-mud; the residue had been planted with potatoes two years, and manured in 1840, with fifteen horse loads of mud, and in 1841, with two cords of stable manure; four and a half cords of manure from the hog-yard, were ploughed in, the present year.

The committee are pleased to see *Town Farms* entered as competitors for the Society's premiums. The mode of supporting and employing the poor on farms, now so generally adopted in Essex, is both economical for the towns, and conducive to the health and comfort of the unfortunate inmates. Many of these establishments are honorably distinguished not only for order, neatness and comfort, but also for good husbandry.

Mr. Bradley seems to have made the best and most judicious use of the means and implements within the control of every farmer; and the liberal crop of nearly ninety-seven bushels to the acre, was the result of his good and careful cultivation.

The committee agree in awarding to him the premium of ten dollars

To Mr. Putnam, the Society is indebted for repeated experiments on manures, and for the very full detail he has given the committee of the mode of preparing his compost, and applying it to his corn-crop.

His mode of ploughing between the rows of corn and severing its roots, is contrary to the generally received opinion of farmers, and the result of his experiments in that most important particular, *profit*, is unfavorable for the present year *at least*, although we hope the future produce of the land may shift the balance in his favor. But so important is it to farmers to increase their means

of manuring, and that the value of new ingredients of compost should be tested by careful experiments, all efforts of this kind should be regarded with favor. Having only one premium to bestow, the committee recommend a gratuity of five dollars be presented to Mr. Putnam. And they also recommend that his statement, and that of Mr. Bradley, be published in connexion with this report.

For the committee,

J. H. DUNCAN.

Haverhill, Dec. 12th, 1842.

ENOCH BRADLEY'S STATEMENT.

To the Committee on Grain Crops:

GENTLEMEN—In appearing as an applicant for the premium offered by the Essex Agricultural Society, on crops, I beg leave to submit the following statement of the mode of cultivation pursued and the result of my experiment. The piece of ground selected for the purpose was intervale, producing a very small crop of grass, not more than half a ton to the acre, and contained by measurement *one acre and eight rods*, as appears by the certificate of the surveyor. The ground was not of uniform quality; a ridge comprised in the piece, containing about 20 rods, did not produce more than one half the average product of the rest. In the spring of 1841, I had it broke up and sowed with oats, and in the fall ploughed in the stubble. In the spring of 1842, as early as practicable, I had hauled upon this piece of ground thirty cart-loads of barn manure, in its green state; there were about three and a half feet to a load; this was spread and ploughed in immediately, that nothing might be lost by exposure. Towards the middle of May it was again ploughed and prepared for planting; I had it furrowed about three feet apart, and in the furrows of one half the ground, I scattered three bushels of a compost, of lime, ashes and plaster, in equal quantities. The effects of this were quite apparent, in the increased productive-

ness of that part of the ground to which it was applied. The seed was put in, on the 16th of May, in drills, at the distance above stated. I used the common eight-rowed corn, selected the previous year, for the smallness of the cob; it was covered slightly with a hoe and then rolled over with a common roller. At weeding time and mowing time, so called, I used the cultivator, passing through the rows with it once each time; subsequently, I had it hoed once, and went through it once, and pulled out the weeds by hand.

On the 1st of September I cut the stalks, and on the 20th gathered and husked the corn, which from the certificate of the person who measured it, filed herewith, proves to be *one hundred and three bushels of sound corn.*

The ground I have since ploughed, and laid down in grass, which appears well.

Your obedient serv't,

ENOCH BRADLEY.

Haverhill, Sept. 27th, 1842.

I hereby certify, that I assisted in measuring the corn raised by Mr Enoch Bradley, on one acre and eight rods of land in Haverhill, and found the produce to be one hundred and three bushels of sound corn. The mode adopted was, to shell one basket of ears and ascertain the quantity of shelled corn, and then to measure the remainder in the ear in the same basket, and complete the whole quantity.

CHRISTOPHER HOW.

Haverhill, Nov. 26, 1842.

I hereby certify, that I surveyed a piece of land for Mr Enoch Bradley, of Haverhill, on which he raised a crop of corn the present season, and it contained one acre and eight rods, and no more.

JOSEPH HOW.

Methuen, Sept. 20. 1842.

ALLEN PUTNAM'S STATEMENT.

To the Committee on Grain Crops:

GENTLEMEN—One acre and 95-100 of a square rod of ground was measured by Mr A. Brown, as the accompanying certificate shows, and has been in my possession only about two years. What had been done to it in years preceding, and what had been the crops from it, I have no means of learning, except that of inquiring of my neighbors. The information they furnish, renders it probable, that about one half of it, having been planted to corn two or three years, and not highly manured, was in 1834 sowed to grain and grass seed, and that it had given a crop of hay annually from that time up to the present year. The other half was planted to corn in 1834, '5 and '6, having applied to it each year about 10 cart loads per acre, of common farm manure. In 1837 it was sowed with grain and grass seed, and has been in mowing since. Neither part is remembered to have been top dressed since it was laid down. The crop of hay, I am told, was light in 1840. I know it was so the first year I mowed it—1841. Then the yield by estimation was not more than ten or twelve hundred pounds of hay per acre.

The soil is not uniform. Some limited spots are quite gravelly, and on them, my crop this year suffered much from drought for a few days. Other spots, the low ones, have a deep black and strong soil—these may make one fifth or one sixth of the acre. One portion or one quarter perhaps of the whole, may still be showing the beneficial effects of having been once, some sixty or an hundred years ago, the foundation and yards of a dwelling house. The remainder is a loamy soil, of ordinary quality, neither poor nor rich.

About the 20th of September, 1841, I broke up the whole field, about two acres. The depth of ploughing then was not uniform; the average was probably between six and seven inches. The land was left as the plough laid it, until the spring.

On the 2d and 3d of May, the present year, I put evenly upon the two acres, 64 ox cart loads, about 30

bushels each, of compost. Sixty-two of these loads were from heaps made by putting to them a clayey wash from the road side, common loamy soil from the sides of stone walls, and meadow mud, in about equal portions. With these I mixed, mostly in December, but partly in April, 21 loads of manure from my barn cellar. But this manure was probably, more than two thirds of it, meadow mud and the hay used for littering the stock. For I obtained 60 loads from the cellar between the first of November and the first of July, though my stock consisted of only one horse, six horned cattle and five swine. Into this compound, I put 12 bushels of crushed bone; also, a sugar box full of bone-black, scum, and sediment, obtained from the sugar refinery at East Boston. These were put in in December. Shortly after, I run in three loads of soapers' waste or salt ley, in all, from seventeen to eighteen hundred gallons. These heaps were twice thrown over in the spring.

Also, I prepared, April 12, a compost which I then designed to put in the hills. It was made as follows. A layer of common soil and meadow mud mixed about six inches deep. Then one load of ox dung; then a layer of soil; then 110 pounds of soap boilers' scraps-meat; then soil; then 7 bushels of crushed bone; then soil; then a cask of unslacked lime and two bushels of salt; then soil; then 110 pounds of fish, tainted salt halibut; then half bushel of plaster; then covered the whole heap with meadow mud and soil two or three inches thick. In about ten days this was well forked over. Then I changed my purpose about the mode of its application. Instead of putting it in the hill, I spread it evenly upon the other compost heaps, and thus let it mix with the other as the whole was thrown into the cart and spread out upon the land, What I have now described made 62 loads. For two more, that were needed to finish out the field, I went to the barn yard, and took the meadow mud, which the cattle had run over for the winter.

After this dressing had been spread out upon the furrows, I harrowed, both ways, loading the harrow heavily.

May 6th, furrowed or marked out the ground, making the rows three and a half feet apart by two and a quarter, or about five thousand five hundred hills per acre. Planted the same day, putting five and six kernels in each hill.

Part of the field,—more than half an acre,—was planted to Brown corn. In this variety I have been exceedingly disappointed. The stalk was small, and the corn small; the crop very light. Nearly an acre was planted with a yellow eight-rowed corn, obtained from Lovett Peters, Esq. of Westboro', which he procured a few years since from Vermont. It is the same as a corn I received from Lyme, N. H., under the name of *Highgate*, because it was brought to Lyme a year or two since from the town of Highgate, Vt. The two parcels from these different sources were planted side by side, and proved to be, as I thought them, of the same variety. I had several other kinds—one from Enoch Silsbee, Esq. of Bradford—small, but sound and early; one from Plymouth county, filling well, very well, and productive; also the Hartwell. But the Highgate is the best. On the piece measured by Mr. Brown I had the Highgate, excepting about 20 square rods, where I had the Brown. I was obliged to take this in to make up an acre.

Process of cultivation :—In furrowing or marking out the ground I used a plough, but made with it a furrow small as possible. The corn was covered about an inch deep. June 1st, I ploughed among the corn, running the land side of the plough as nearas possible to the corn, within two or three inches, and sometimes within one. I used a side hill plough, and turned the earth, *that day*, from one side only of the row. But on the 4th I turned it from the other side also. At this time ploughed as deep as I could without disturbing the sod, and kept close to the corn, being willing to sever the roots. Three or four days after this, I put the cultivator between the rows, and levelled down the ridges that the ploughings had thrown up. June 11th, ploughed deep one furrow *in the centre* between the rows. 13th and 14th, run the cultivator again. June 17th. Took out from

the cultivator, all its teeth excepting the centre one, and with that went through the rows the narrowest way, running that tooth deep, down through the sod. 21st and 22d, again used the cultivator, and hoed. On the 30th, also, the ground being wet and cold, and the corn small, put in the cultivator, and run it both wide and deep as possible, making many of the hills shake as I passed the teeth under them. July 6th, thinned to three and four stalks in a hill, and used the cultivator. Hoed 7th. 29th and 30th, sowed four bushels of rye, and one of orchard grass-seed; harrowed between the rows, and hoed, making the whole surface smooth and flat. The field is intended for pasturage next season.

Sept. 20th, cut up the corn, bound it in bundles, (putting about four hills to the bundle, and using rye straw for bands) and stooked on the same day, putting ten or twelve bundles to a stook. The stooking consists solely in standing up together, as uprightly as possible, the proper number of bundles, and then putting around their top two bands of rye straw. Thus placed, the corn stands firmly, and cures well. Oct. 7th, housed the corn; it was so dry that I packed away in solid mass the whole that grew on the acre, and left it thus until a more convenient husking time. On the 17th, 18th, 19th and 20th, the husking was performed, and the measuring was done. The measured piece yielded one hundred and seven baskets of larger ears, and 10 of smaller ones. Six baskets of the larger were weighed, and the average net weight was forty-three and seven eighths lbs.; two of the smaller gave the net of each forty-one and three quarter lbs. When corn is cured in stook, I find the small and late ears much better dried than when the crop is left standing until harvest time. If my casting is correct, the yield was five thousand one hundred twelve and one eighth lbs. This, divided by seventy-five, gives sixty-eight and one sixth bushels, on $160\frac{25}{100}$ square rods, or very nearly sixty-seven and three quarter bushels per acre.

This is no extraordinary crop, the amount alone be-

ing considered. But, I believe you, gentlemen of the Committee, are to give your premium for "*the best experiment.*" The chief value of my trial, *as an experiment*, if it has any value of that kind, may consist in the light it gives in answer to a question like the following: Can other substances, which have been little used or valued as manures, be, without loss, made to supply the place, in a great measure, of stable manure, in the cultivation of Indian corn? I say, *without loss*, for I think it a public benefit to discover other manures than those commonly in use, that shall answer *equally well* as the old ones. If one can do this, he shows how the quantity of manures in a given district may be increased—how the soil of that district may be made to increase its productions.

The expense of manuring, allowing $1 per day for a man's labor, and the same for a yoke of oxen and cart, I estimate as follows:

21 loads of compost from barn cellar, at $1,50,	$31 50
40 loads of soil, clay, and meadow mud, (these were all taken from within, and immediately around the field, and cost but little more than the carting),	10 00
12 bushels of bone,	4 80
1 box sugar sediment, perhaps	1 00
3 loads of salt ley, at $5,00, (2 for the ley, and 3 for carting five miles),	15 00
2 loads more of soil and mud, at 25,	50
1 load dung, good,	2 00
110 lbs. soapboilers' scraps, at $1\frac{1}{2}$ ct.	1 65
7 bushels bone,	2 80
1 cask lime,	1 50
2 bushels salt, (fisherman's refuse)	50
110 lbs. fish,	1 10
$\frac{1}{2}$ bushel plaster,	50
2 loads compost from barn-yard,	2 00
Mixing and forking over twice,	3 00
Putting out and spreading 64 loads,	7 00
Whole for two acres,	$84 85
Or for one acre,	42 $42\frac{1}{2}$

No more of this was put on the measured acre than on the other. At the time of putting out, the whole field was marked off carefully into squares, containing a square rod each, and one fifth of a load was put out at the centre of each square. Were I to purchase stable manure, five miles from home, at $4 50 per cord, (a common price in the vicinity of Salem), and allow, as in the case of the ley $3,00 for carting, and then allow as above about 16 cents per cart load, or 50 cents per cord for twice forking over, and for putting out and spreading, then stable manure would cost me, when applied to the ground, about $8 per cord; and my $42,42½ would have put on only four cords and one third, or about thirteen loads. The question then is, whether with four and one third cords of common stable manure I should have obtained as much corn as my land has yielded me. Of this I leave others to judge.

Other expenses of the crop on an acre I estimate as follows:

Ploughing,	$2 50
Harrowing twice,	1 00
Marking out or furrowing,	75
Planting,	1 50
Seed,	1 00
Nine times the horse passed over the field, followed by plough, cultivator or harrow, and the usual time consumed was two hours for the two acres. Expense on one acre,	3 00
Three hoeings and the thinning,	4 00
There was little to do with the hoe except to destroy weeds, as the corn was cultivated without any hill.	
Cutting up, binding and stooking,	2 00
Carting to the barn and stowing away,	1 50
Husking,	6 00
	$23 25
Add for manure,	42 42
Whole expense,	$65 67

I am accustomed to allow the stalks or stover of a field that gives fifty bushels of corn, to be worth as much as one ton of English hay. The ton of hay I value at $12; my stover then is worth $16. My corn, allowing liberally for shrinkage, (for most corn after it is put away in bins will shrink near ten per cent), I put at sixty bushels, and call it worth to me 75 cts. The credit side will stand thus:

60 bushels of corn, at 75 cts.,	$45 00.	Dr. 65 76.
Stover, - - -	16 00.	
	$61 00.	
Balance against the crop,		$4 76

In this estimate I have made no charge of interest for the land. Neither have I given credit for the benefit the manure may be to future crops, nor for any extra labor in tillage for making the surface smooth, and laying the land down.

Though my figures bring the crop in debt to me, this is not the worst of my farming. Have others fared much better this year?

My manure has been peculiar; my mode of cultivation different from what I have been accustomed to, (rending the roots of the corn, and stirring as much of the ground as possible, up to about the first of July, and after that only scratching *the surface*), and my mode of curing different from what is usual. The corn is sound and good; the stover is *very good*, and the crop, considering the condition of the land in the spring, larger than I could reasonably expect. Some of the neighbors had the kindness to encourage me by saying that it was of no use to plant corn *there*, for it would not come to anything. For this, however, there was no sufficient reason. The land naturally is of middling quality, but was badly bound out.

ALLEN PUTNAM.

Hamilton, Sept. 27, 1842.

I hereby certify that on the 9th of September I meas-

ured a piece of land for Allen Putnam, on which he had growing a crop of corn, and found the same to contain $160\frac{95}{100}$ rods. ARZA BROWN, Surveyor.

Hamilton, Nov. 3, 1842.

We hereby certify that we assisted Mr. Allen Putnam in harvesting, in measuring and in weighing his corn that grew on the land measured by Mr. Brown, and that we obtained 107 baskets of large ears, and 10 baskets of small ears. The corn when husked was nearly all of it quite dry, the small as well as the large. Six baskets of the large were weighed, and the average net weight per basket was $43\frac{7}{8}$ lbs. Two baskets of the small averaged $41\frac{3}{4}$ lbs.

GEORGE H. FOSS.
LEMUEL S. FOSS.

Hamilton, Nov. 3, 1842.

ON ROOT CROPS.

The Committee on Root Culture have met and attended to the duty assigned them, and respectfully REPORT:

The statement offered by Mr. Josiah Crosby, of Andover, on his carrot crop, was not so particular as the regulations of the Society require, to entitle him to a premium. As it regards the former condition and cultivation of the land, we think the crop a fair one, but not entitled to a premium. The crop offered was six hundred and eighty bushels to the acre.

The statement of Mr. Moses A. Shackley, of Danvers, gives thirty-six tons, five cwt., from two acres thirty-four rods. The crop we think a very fine one; but, as in the statement of Mr. Crosby, he has neglected to state the previous condition of the land, how it has been manured, or what the crops taken from it previous to the carrot crop; also, the value of manure and labor.

The statement of Mr. Andrews Breed, of Lynn, of his carrot crop, is full and explicit, showing a large yield for the expense of cultivation; the amount raised from one acre eighty-seven rods, was eight hundred two bushels.

Mr. Allen Putnam's statement on his method of raising a ruta baga crop, is highly commendable. In his statement he has been full and explicit—no mistake; only one thing, he forgot to count the number of seed planted; his statement goes far to show the value of salt and bone-dust as manure. You will find his compost gives a better yield than his best barn manure. We do not think Mr. Putnam's a remarkable yield, but we take into consideration, the poverty of the land, and his excellent management of the compost, and we think him entitled to a premium.

By the statement of Mr. John Peaslee, of Danvers, in reference to a crop of carrots raised by him, it appears that the land from which the carrots were raised, was planted to corn and potatoes in 1841, three cords of barn manure only, taken from cellar, being used. In 1842, he put on twelve loads of muscle-bed manure, that cost six dollars at the wharf in Salem. Two hands ploughed, harrowed, and sowed it with long orange carrot seed, in one day, using a machine. Land worth one hundred twenty-five dollars per acre; dark loam, Eastern descent. One and a half days' hoeing, with machine, cost one dollar and fifty cents; weeding cost six dollars; the expense of harvesting twelve dollars.

The committee think Mr. Peaslee's an extraordinary crop, and at very little expense, and we therefore recommend to him the premium. The amount raised, as appears by the weigher's certificate, on eighty-five rods, was 313 cwt. and 82 pounds, nearly thirty tons per acre.

Expense of Cultivation, Manure, &c.

12 loads of muscle-bed, - - -	$6 00
Ploughing, harrowing and sowing, - -	3 00
¾ lbs. seed, 75 cts.; Hoeing half day, $1 50, -	2 25
Weeding, $6; Harvesting, $12, - -	18 00
	$29 25

The Committee respectfully submit the Report; and from their experience and the statements of others, think roots the most profitable crops, and at the same time the most healthful that can be raised for our stock.

ERASTUS WARE,
WM. OSBORN,
JOSIAH CROSBY, } *Committee.*

ANDREWS BREED'S STATEMENT.

To the Committee on Root Culture:

GENTLEMEN—I offer for premium a crop of carrots, raised from one acre eighty-seven rods of land, measuring eight hundred and two bushels. The land was a thin, dark loam, with a light gravel sub-soil. A crop of corn and potatoes was taken from the land last season; the crop was light, say about forty bushels corn and sixty bushels potatoes. It had in the spring of 1841, a dressing of manure, which was ploughed in, after the crop was harvested. On the 10th day of November it had five cords compost manure put on, spread and ploughed in deep, say to the depth of the beam of the plough. On the 1st and 4th day of May, of the present year, it had five and a quarter cords of barn manure and meadow mud spread and ploughed in as before. At the time it was ploughed a man followed the team with a rake and raked it. On the 6th day of May it was sowed in rows running north and south, sixteen inches apart, with one pound orange and one pound white carrot seed; the white carrot seed was poor, and did not but very little of it vegetate. I was obliged to sow that part where the white seed was sown, again on the 1st day of June, with one pound of orange carrot seed.

In July, the carrots were weeded and thinned out, leaving them from four to six inches apart. The half of the land sowed the second time did not yield so large a crop as the part sowed in May.

They were harvested the last week in October; a

part of them were weighed, and all were carefully measured in a bushel basket. Those that were weighed averaged about thirty-nine bushels to the ton. Below you have a statement of the expenses of the crop and dates when the work was done.

Expenses of Crop.

1841.		
Nov. 10th.	5 cords compost manure, at $1 50,	$ 7 50
	1½ days' ploughing, a $5,	7 50
1842.		
May 1st.	5¼ cords manure and meadow mud,	21 00
" 4th and 5th.	1½ days' ploughing, at $5,	7 50
" " "	1½ days' work, raking, at $1,	1 50
" 6th.	6 hours' time, sowing,	75
" "	3 lbs. seed,	3 00
June 9th.	4 days' work by boys, weeding,	1 67
July 2d.	2 days' do. by men, at $1,	2 00
" 16th to 28th.	21½ days' work, weeding, thinning, at $1,	21 50
Oct. 28th.	12½ days' work, harvesting,	12 50
	Interest on cost of land, $100 per acre,	9 00
		$95 42

Value of the crop.

One half cost of manure for next year,	$ 14 25
802 bushels carrots, say 40 bushels to the ton, making 20 tons, 1 cwt., at $7,	140 35
	154 60
Deduct expenses,	95 42
Profit,	$59 18

ANDREWS BREED.

Lynn, November, 1842.

[This statement was accompanied by well authenticated certificates of the measurement of the land and crop.]

ALLEN PUTNAM'S STATEMENT.

To the Committee on the Cultivation of Root Crops:

GENTLEMEN—The land measured by Mr. Brown, whose certificate accompanies this communication, was, I am told, planted to corn in 1839. How it was then manured I do not know; but the former occupants of my place were generally far from being lavish in their enriching applications. In 1840 it was sowed to grain and grass-seed, probably without manure. In the spring of 1841, when I began my operations upon the place, I found that the grass-seed had failed, and I was obliged to plough up; and, having no manure, to sow again to grain and grass-seed. The early growth of the grain was far from vigorous, and a hail-storm that passed over us, or rather came down upon us, June 30th, so completely demolished the crop, that at the time of cutting I obtained only a single cart load, say half a ton, from three acres. After cutting the grain, I ploughed a small piece, probably three rods by five, on which I put, in drills, strong ox manure and poudrette, and sowed to flat or English turnips. The crop was very small—scarcely worth the harvesting. Hoping to have my grass survive and give me some hay, I top-dressed the remainder of the three acres, in the course of the last winter and spring, with soil into which salt ley, the waste ley of soapboilers, had been run. This dressing probably cost me, *when spread out upon the land*, about one dollar per load, and I spread at the rate of about ten loads per acre. But this did not save or create grass enough to give promise of a crop worth mowing. I concluded to take up half an acre of it, (including the small piece where I had turnips the preceding autumn,) and put it to ruta bagas. This soil is a loam, hardly to be called either sandy or clayey, either light or heavy. It is of middling quality. I ploughed up this land, which had a little clover growing upon it, June 6th. On the following day I applied my manure, spreading it upon the furrows.

Having found in 1841, that crushed bone, salt ley

and soil as a manure gave me good ruta bagas, I prepared to use the same this year, excepting that I would so far vary the compost as to see whether part muck, or meadow-mud, and sand would not be as good as all soil, for receiving the bone and ley. Having a heap of soil, six or eight loads, already formed, I brought to it, March 9th, seven loads of sand, a sand *holding water*, taken from near the meadow. And on the 18th, I carried also five loads of meadow mud. These three ingredients were formed into a basin; then over the surface of the basin I spread fifteen bushels of crushed bone, and about the first of April run into it one load, six hundred gallons of salt ley. In a day or two after, this heap was thrown over. Again in May it was thrown over. On the 7th of June it was spread out upon the land. My directions were to spread at the rate of twenty loads to the half acre. I had hauled to the heap, as I thought, enough to make twenty loads; but the sand *seemed* to have been feeding so greedily upon the meadow mud, or to have been so busy in grinding it down to powder, that the meadow mud was hardly to be discovered; it had shrunk. The heap furnished only fifteen loads. To finish out the piece I went to a well fermented heap of barn-cellar compost, of as good quality as any that I have made during the year, and took four loads, applying it at the same rate as the other. Thus nineteen loads covered the piece. This dressing was immediately harrowed in. The ground was then left for a few days, when it was again well harrowed. June 20th, I directed my men to turn the land into ridges, thirty inches apart, and sow the seed on the ridges, and *to be particular as to the width.* After they had gone over the ground, they found that they had not ridges enough. "That won't do," said they. "We must harrow it down, and try again." They did so. I give this narration, because I think the mistake caused a *very good* preparation of the ground. The seed—*imported seed*—had been soaked in tanner's oil eighteen hours, and was sowed one row on a ridge, June 20.

July 6th, went between the rows with the cultivator.

July 9th, removed the weeds. July 20th, used the cultivator again. July 22d and 23d, hoed, thinned and transplanted where necessary. This was the whole of the cultivation. Another stirring of the soil by the cultivator was intended, but the rains prevented until the plants became so large that it was thought best not to do anything more to them.

Oct. 29. Pulled the crop, topped it, and stowed into heaps of fifteen or twenty bushels each. Nov. 1st and 2d, measured the crop, and stowed it away for winter use.

The items of cost, if labor is counted at $1 per day, are nearly as follows:

Interest on land,	$3 00
15 bushels of bone,	6 00
600 gallons salt ley,	4 50
7 loads of soil,	1 16⅔
7 " of sand,	1 16⅔
5 " of meadow mud twice handled,	1 66⅔
Throwing over twice,	50
4 loads of barn-cellar compost,	6 00
Ploughing,	1 00
Harrowing three times,	1 00
Putting on manure,	3 00
Ridging and sowing,	1 00
Seed,	50
Cultivating and weeding first time,	2 00
Do. 2d time, and thinning and transplanting,	2 00
Harvesting,	5 00
	$39 50

No allowance being made for the unexhausted manure, and for the improvement of the ground; also, the labor of a man and of a yoke of oxen, each being reckoned at one dollar per day, it will be seen that my crop on the piece, (381$\frac{37}{50}$ bushels), costs me a very small fraction over ten cents per bushel.

Forty baskets of these roots *well cleaned;* that is, were pulled when the ground was dry, were thumped together then—were afterwards topped and thrown into

heaps, were then thrown, after three days' drying, into the cart, hauled to the barn and tipped up, and were again thumped together as they were put into the baskets, and all this in dry weather—forty baskets, thus cleaned were weighed, and the average net weight was $66\frac{11}{40}$ lbs. Two of these baskets after having been weighed were taken, and the roots were all well brushed with a good shoe brush, and when put to the steelyards again, each weighed on the same notch as before. The whole number of baskets on the piece, and all I believe were as well filled as the forty that were weighed—the whole number was $322\frac{1}{5}$. This, multiplied by $66\frac{11}{40}$, gives $21{,}373\frac{11}{16}$ lbs. or 381 bushels and three pecks, allowing 56 lbs. to the bushel; this is a very small fraction over 370 bushels upon an half acre.

These roots were unusually sound and fair. I was personally present at the measuring and weighing of this crop, and am fully satisfied that there has been no error that tends to show a larger yield than was actually obtained. The barn-cellar compost gave 15 baskets of roots per load—the other compost $17\frac{1}{2}$ baskets.

ALLEN PUTNAM.

Hamilton, Nov. 9, 1842.

EXPERIMENTS ON MANURES.

The Committee on Experiments on Manures, REPORT:

The subject of Manures,—the question how can farmers most cheaply and most effectually fertilize their lands,—is of the highest importance, not only to Agriculturists themselves, but also to the whole community. The object for which premiums are offered by Agricultural Societies, is valuable and practical knowledge. The experimentor, to entitle himself to them, must, by the results obtained, and by faithful and true statements thereof, give some information that will prove profitable to others. An experiment which proves some article

that is extensively used as a manure much less valuable than has been generally supposed, may be worth as much to the public as another experiment which proves that some other article which may be as easily and cheaply obtained, has been as much undervalued. Hence a failure, as it is termed, of obtaining the expected crop from experimental manuring, fairly and honestly stated, may be as worthy a premium as success in another instance; for, to save farmers from loss of a given sum, which would have been expended in money or labor had they not been thus advised, is worth as much to them, as to inform them how, by the use of other means, they can make the same sum. The premiums we have to award were offered for "an exact and satisfactory experiment in the application of poudrette, urate, bone-manure, ashes, soaper's waste, saltpetre, barilla, marl, or gypsum, with a view to test their specific and comparative advantages with each other, or any other manure." The applicants for these premiums were Allen Putnam, of Hamilton, and Joseph How, of Methuen. Mr. Putnam has furnished the committee with a statement in detail of the management and results of his experiments. This would occupy too much of our anuual pamphlet, and to many for whose benefit it is published, it would probably appear too great a task to sift out the really useful information it contains, from much that is merely curious or specious. Mr. P. will therefore, we trust, excuse us for abridging this document, and referring those who may wish to see all the particulars to the manuscript on file in the Secretary's office, or to No. 20, of Vol. XXI. of the New England Farmer, in which most of it is published.

Mr. Putnam, April 13th, 1842, ploughed up a little more than $\frac{3}{16}$ of an acre of sward land, which the year previous did not give more than 1200 lbs. of hay per acre, and which probably had received no manure for ten years. It was ploughed seven or eight inches deep, and sub-soiled with a cultivator tooth fitted into an oak joist, harrowed and marked off into thirty beds, 17 feet by 17—a trench being opened around each bed to mark

its boundaries, thereby reducing each to one square rod. On the centre of each bed was placed the manure for the same, a heap of compost, costing at the rate of $30 per acre, as nearly as practicable. They were numbered as per Diagram.

May 26th, harrowed the whole ground, spread with care each heap upon its own bed, then back furrowed into ridges, making five equal ridges on each bed, taking care not to carry the manure of one bed to another with the plough.

On the same day one of the five rows, the western side of each lot, considering the diagram a map, the upper part north, was planted with Indian corn, in a line, kernels six inches apart; one row, the next, with five fair and middling sized long red potatoes, seed whole; one with long orange carrots; one with sugar beets; and, June 24th, one with ruta baga.

The seed all came up well, excepting the sugar beet. Every kernel of corn and every potato came, though some of them on the salt, and more on the salt ley, were very tardy about it. The beet seed was not good, and where no manure was applied, none of it germinated, but on the salt ley much of it came up, and several of the manures seemed to call into action its vitality.

These several crops were ploughed, hoed, etc., about as well as his other crops usually are, great care being taken to treat all the rows alike. The principal cause of difference in the crop is to be found in the manure. Some allowance ought to be made for the difference in the soil. After much consideration, Mr. Putnam came to the conclusion, that from one to seven twentieths ought to be deducted from the crop of each lot, excepting the most meagre, to come at the comparative benefit of the manure on each lot. Mr. Putnam's calculations to find the results of his experiment, are not perfectly satisfactory to the committee, and it is extremely difficult to make others that are so. We shall give all his data, and leave it to those who have the ability, leisure, and inclination to cipher out much of the valuable information which his statement contains.

DIAGRAM.

XXX. M 6 bushels. 6c. 9m.	XXIV. $\frac{1}{20}$ M. 3 bushels. 7c. 9m.	XVIII. $\frac{2}{20}$ M. W. Oil Soap. 4c. 1m.	XII. $\frac{1}{20}$ M. Ammo. 2c. 8m.	VI. M. Salt. 2c. 2m.
XXIX. $\frac{1}{20}$ M. W. Rags. 3c. 9m.	XXIII. $\frac{2}{20}$ M. Lime. 3c. 3m.	XVII. $\frac{3}{20}$ M. Scraps. 0c. 6m.	XI. $\frac{2}{20}$ M. Salt and Lime. 2c. 0m.	V. $\frac{1}{20}$ M. Bone. 7c. 1m.
XXVIII. $\frac{2}{20}$ M. Gravel. 2c. 1m.	XXII. $\frac{3}{20}$ M. Ashes & Ox D. 11c. 5.	XVI. $\frac{4}{20}$ No Manure. 2c. 7m.	X. $\frac{3}{20}$ M. Ashes. 14c. 3m.	IV. $\frac{2}{20}$ M. Fish. 2c. 7m.
XXVII. $\frac{3}{20}$ M. H. Urine. 4c. 3m.	XXI. $\frac{4}{20}$ M. L. and Ox D. 5c. 3m.	XV. $\frac{5}{20}$ H. Dung. 6c. 8m.	IX. $\frac{4}{20}$ M. Sugar sed. bone b. 5c 3m.	III. $\frac{3}{20}$ M. Leather, new. 3c. 8m.
XXVI. $\frac{4}{20}$ M. Ox Urine. 4c. 3m.	XX. $\frac{5}{20}$ M. Ox D. 5c. 5m.	XIV. $\frac{6}{20}$ Ox Dung. 6c. 8m.	VIII. $\frac{5}{20}$ M Gypsum. 3c. 7m.	II. $\frac{4}{20}$ M. Leather, old. 5c. 0m.
XXV $\frac{5}{20}$ M. Salt Ley. 7c. 8m.	XIX. $\frac{6}{20}$ M. H. Dung. 6c. 6m.	XIII. $\frac{7}{20}$ Cell. Comp. 12c. 0m.	VII. $\frac{6}{20}$ M. Nitre. 8c. 3m.	I $\frac{5}{20}$ M. Oil Meal. 10c. 0m.

The diagram shows the form, number and situation of each and all the beds above described. Each, with the exception of Nos. 13, 14, 15 and 16, received three bushels of meadow mud, or muck, dug in the fall, well frozen, but not much dried, valued at three cents a

bushel, and nine cents worth of some other article, as follows :

No.
1. 6 lbs. oil meal.
2. 1 bushel old leather chips.
3. 1 Do. new Do.
4. 6 lbs. fish—tainted halibut.
5. 6 qts. crushed bone.
6. 5 qts. salt—fisherman's waste.
7. 1½ lbs. nitrate of soda.
8. 5 qts ground gypsum.
9. 12 qts. sugar sediment, which is chiefly animal charcoal.
10. 18 qts. ashes, wood and peat.
11. 5 qts. salt and lime, long mixed.
12. 1 lb. carbon-ammonia, not fresh.
13. 3 bushels of barn-cellar compost, without muck.
14. 1½ bush. pure ox dung, "
15. ½ pure horse do. "
16. No manure. "

No.
17. 6 lbs soapboilers' scraps.
18. 2 lbs. of whale oil soap.
19. 3 pecks of pure horse dung.
20. 3 pecks pure ox dung.
21. 2 qts. air-slacked lime, and half bushel ox dung.
22. 7 qts. ashes, poor, and half bushel ox dung.
23. 6 qts. air-slacked lime.
24. Muck alone, three bushels.
25. 8 gallons salt ley, soapers' waste.
26. 8 Do. ox urine.
27. 8 Do. human urine.
28. 3 bushels gravel.
29. 2 lbs. woolen rags.
30. 6 bushels muck.

The following table shews the actual products, as obtained by weight at the time of Harvesting, which was in the latter part of October.

No.	Lbs. Corn.	Lbs. Potatoes.	Lbs. Carrots.	Lbs. Beets.	Lbs. RutaBaga.	No.	Lbs. Corn.	Lbs. Potatoes.	Lbs. Carrots.	Lbs. Beets.	Lbs. RutaBaga.
1	3¾	14	19¾	5	15	16	⅛	8¼	1	¼	0
2	2½	9	12	½	6½	17	¼	9¼	¼	0	3½
3	1	10	8½	1¼	7	18	2½	16	9½	½	3½
4	⅛	10	7	0	10	19	3¼	12½	13½	½	14¼
5	2½	9	11	1	12	20	2	12½	8¼	4	12
6	½	5½	4½	0	9	21	3	12½	11½	0	12
7	2½	12½	17	4	21	22	4½	15¼	17½	1	15
8	1	8	11	2	11½	23	½	9	13	2¼	6
9	1	13½	10	1	17	24	2½	11	13	½	17
10	3	22¾	7½	7½	32	25	½	15¼	½	10½	32
11	¼	9½	2	0	6	26	1/10	14½	1½	3	16
12	½	11	1¼	½	8	27	⅛	9½	4¼	1	19
13	5	21	21¾	25	5½	28	½	8	4	0	6
14	1¾	17½	18¼	0	12½	29	½	9½	3	0	14½
15	2½	15½	14	½	11	30	1	11	8½	½	16½

Mr. Putnam based his calculation on the whole number of pounds obtained, without making any allowance for difference of value. A pound of ruta baga, &c.,

counts as much as a pound of corn. We have calculated the results by first finding the value of the crop produced by each lot, considering corn worth 12 mills per lb.; potatoes 3 mills per lb.; carrots, ruta baga and beets, 2 mills per lb.

From the value of the crop thus found, we deduct in the first place, the number of twentieths necessary to reduce the quality of the soil to the standard of the poorest lot. In the second place, we deduct the value of the crop reduced, on account of the quality of the soil, as the others are, obtained from lot No. 16, without manure. This difference thus shown must be attributed to the manure, mistake in the estimated quality of the soil, difference of culture, or other accidental circumstances. Assuming it wholly owing to the manure, the comparative value of each kind used may be at once seen on the diagram.

On the diagram is marked the number of each bed; the number of twentieths to be deducted from the value of its crop; and an abbreviated indication of the manure used, and the amount in cents and mills to be attributed to the manure.

The expense of manure on each bed, as estimated above, was 18 cents. Our calculation shows a very meagre return for this outlay. But Mr. Putnam says, the object being to determine the comparative value of the manures, he was not solicitous about the amount of crop, and it proved small, as he knew it must be. On some of the beds too large a quantity of salts were used. Eight gallons salt ley from soda soap, the kind probably used by Mr. P., according to Dana, contains about 7 lbs. 6 oz. of common salt and glauber salt. This, it would seem, is too much for corn and carrots, but not so for potatoes, beets, and ruta baga. Ox urine contains a much larger, and human urine double the above named quality of these salts—too much, it would seem, for either kind of vegetable here cultivated. The benefit arising from the use of these articles, will probably be more obvious in future years.

The 11 lbs. of salt used on No. 6, operated still more

unfavorably. But why tainted halibut on No. 4, and soapboilers' scraps on No. 17, should have so nearly neutralized all the good effect of the muck, is a mystery which throws a doubt over the value of all the information derived from the experiment. Where positive information is wanting, probabilities are worth something; and the more we study the results of Mr. P.'s experiment, the better satisfied we shall be, that following some of the indications will hereafter lead to some positive truths in regard to the value, as manures, of several articles here tried. Some other experiments were made by Mr. Putnam, where his object was to get a crop, which are much more satisfactory. These we shall give in his own words.

A Trial of Crushed Bone as a Manure for Winter Rye.

In the month of August, last year, we broke up between two and three acres of plain pasture land; the soil rather light and the surface quite mossy. After it was ploughed, the roller was passed over the whole. Sept. 8, we marked out a portion of it into squares, three rods by three, and on to 16 of these squares, we put eight bushels of bone—a half bushel on each square. This bone was applied dry and unmixed, just as it came from the cask. The rate was a little less than nine bushels per acre. Another and contiguous portion of the land had applied to it at the same time four bushels of bone at the rate of 16 bushels per acre. This is all the application that was made to any part of the lot. The ground not covered by this bone was left without any manure.

On the 8th of Sept. the rye was sowed, 5 pecks of seed per acre, and this with the bone were harrowed in together. The harrow passed first lengthwise the furrow, and then crosswise, and after this the ground was again rolled.

The weather immediately after this was warm and the ground was moist. In one week the grain was well up, and in three weeks, that where the bone was applied, was very perceptibly in advance of the other. It kept

in advance through the autumn, became more firmly rooted, and much less of it was killed out by the winter. Late in March, the field was again rolled. In April, a considerable portion of the piece was harrowed; the teeth of the harrow used being so set that they run six inches apart.

Also in April, we spread bone at the rate of 9 bushels per acre upon a portion of the rye where none had been applied the preceding autumn. This bone was left upon the surface, and was neither rolled nor harrowed in.

During the spring and early part of the summer, the straw looked nearly as well where we applied 9 bushels per acre as where the rate was 16; and this that was boned had apparently four times as much bulk of straw upon it in June as the other.

At one time this rye wore a strange appearance: nearly every straw was as white as it is now, in places an inch, an inch and a half, or two inches long, and extended entirely around the straw. On some straws these white rings were near the head, on others as low down as the middle. We never saw or heard of any thing of the kind before; we supposed that the crop was ruined, and commenced cutting up and feeding out to our stock. In two or three days, however, we found that the sap continued to flow, and we left off cutting. The affection was seen as well on the parts not boned as on those that were.

On the 16th of July, the rye was fit for the cradle, and we then cut portions of it to be bound and threshed separately, for the purpose of ascertaining the effect of the different applications and different treatment.

To do this fairly as possible, we took in the centre of the field, the half of one of the lands made by ploughing; and in measuring, went from the centre of the hollow or dead furrow, to the centre of the ridge or back furrow. Our applications had been so made that each of them crossed this strip at right angles. We cut July 16; threshed and measured July 28 and 29. The lots were as follows—

No. 1. Containing 10½ square rods. Had bone nine

bushels per acre, applied in the spring, and was not harrowed. Gave 18 quarts of rye, or 9 bushels per acre, *by measure*. The weight was 33½ pounds.

No. 2. Containing 10⅓ square rods. Was harrowed in April, but had no manure at any time. Gave 15 quarts, or 7 bushels 8 quarts per acre, *by measure*. Weight 29½ pounds.

No. 3. Containing 13⅖ rods. Had bone in September; 16 bushels per acre; was harrowed in April; gave 52 quarts, or 19 bushels 12 quarts per acre, *by measure*. Weight 98 pounds.

No. 4. Containing 13⅖ rods. Had bone in September, 9 bushels per acre, and was harrowed in April. Gave 39 quarts, or 14 bushels 17 quarts per acre, *by measure*. Weight 73½ pounds.

No. 5. Containing 8¾ rods. Boned in September, 9 bushels per acre. Not harrowed in April. Gave 27½ quarts, or 15 bushels 23 quarts per acre, *by measure*. Weight 51½ pounds.

These several lots give an average weight of the grain per bushel, of 60⅖ pounds, nearly.

The results arrived at by this trial are—

1st. That harrowing in the spring reduced the crop from 15 bushels and 23 quarts, to 14 bushels and 17 quarts; i. e. caused a loss of 1 bushel and 6 quarts per acre.

2d. 9 bushels of bone gave an increase of 7 bushels and 9 quarts of rye per acre.

3d. 16 bushels of bone gave an increase of 12 bushels and 4 quarts per acre.

4th. The application of bone (9 bushels) in the spring seems to have given an increase of 1 bushel and 24 quarts per acre; but this ground was not harrowed in the spring, and it may be but fair to ascribe one half the gain to this cause.

The above trial was as fair as is often made. The soil of lots 1 and 2 was a little lower and a little stronger than that of the others. This caused it to suffer more in the winter from the frosts, but gave it an advantage in the summer.

Should results generally be such as we have here obtained, Mr. Ward's bone should find a ready sale; for the cost to us at the mill is 35 cents; truckage, 20 miles, 6 cents per bushel, and cost of sowing 1 cent—whole cost, 42 cents per bushel. Now each bushel of bone where we applied 9 bushels per acre, gave an increase of grain of $25\frac{3}{9}$ quarts, and where we used 16 bushels, each bushel gave as increase $24\frac{1}{4}$ quarts. The increase of straw amply pays for the increased expense of harvesting and threshing the larger crop, so that it is proper to reckon the grain at the market price in making up the account. If 3 pecks and more of rye can be obtained at 42 cents, and the bone be left in the ground to benefit the future crops, and we know it will work for four or five years, then the farmer does well by such an operation. We honestly think that those who intend to sow winter rye this fall upon light lands, will find it a good operation to apply to them from 12 to 20 bushels of bone per acre. Our figures lead to this opinion.

Nitrate of Soda.

This article, which is now coming much into use in England as a fertilizer of the soil there, we have tried on a limited scale. In 1841, we sowed a little of it upon various crops, and found that timothy, red top, couch grass and June grass, i. e. the upland spear grasses, were all benefited by its application. But upon clover, grain, and the wet meadow grasses, it seemed to be inert. The present season we applied it, and obtained, as far as the eye could determine, the same results. Wherever it was used upon the spear grasses, they very soon put on a deeper green, and shot up more vigorously. We sowed, about the first of June, 6 quarts upon about 30 square rods of land, or at the rate of one bushel per acre. About the middle of July, we cut one swath of timothy 43 feet long and $7\frac{1}{2}$ feet wide, where the nitrate had been applied. The hay from this, when well dried, weighed $37\frac{1}{2}$ lbs. or 5137 lbs. per acre. We cut an adjacent swath of the same length and width, and the hay

weighed 29 lbs., or 3973 lbs. per acre. The increase was 1164 lbs. per acre. On other spear grasses the effect was apparently quite as great as here; but upon clover and barley it did no good.

This nitrate of soda, bought in 1841, cost about $4 per cwt. A bushel probably would weigh near 100 lbs. At this rate it would be a cheap application, were results to be such as we obtained on the measured piece. But we apparently lost so much by putting it where it did no good, that the purchase was not on the whole a very profitable one. We have corn, carrots, beets, potatoes and ruta bagas upon it, and expect to be able to give the results in a few weeks. These we think now will be rather favorable than otherwise.

The present price of nitrate of soda is 6 or $7 per cwt., if it can be had at any price. Report says it has been bought up for the English market, where it is much sought after for manure. Others in this vicinity have used the nitrate of soda, and we hope by this account to induce them to give the results. More experiments are needed before the article can be either recommended or discarded.

JOSEPH HOW'S STATEMENT.

To the Committee on Manures:

GENTLEMEN—Feeling desirous to ascertain the comparative value of different kinds of manure, I resolved to try several experiments. For this purpose I selected a piece of warm pasture land; the soil a gravelly loam. After it was ploughed, I measured off six lots five rods long, and one rod wide. On lot No. 1, I carted one cart-load of compost, made of meadow mud, with which was mixed thirteen gallons of waste soap. No. 2, one cart-load of green manure. No. 3, compost made as follows: I hauled a quantity of loam and meadow mud into my barn cellar, about the middle of June, 1841. I kept on it from six to eight shotes. Added the manure of two horses about three fourths of the time; also, the manure of about twenty head of cattle about six weeks;

also, hauled in mud as seemed necessary. Hauled it out the first of December, and covered the heaps with mud. In the spring, put on about seventy-five bushels of wood ashes, and pitched it over three times. Also, with a portion of it, mixed a peck of salt to a load. On moving it, I found there were about two loads.

Lot No. 4, one cart load of the above compost, without salt. No. 5, two bushels of bone; No. 6, two bushels of poudrette. I then carefully spread all the manure, bone and poudrette, and harrowed it in. On the 20th of May I furrowed it three feet and four inches apart, making 125 hills on each lot. Planted it with Hartwell corn. It came up well, as there was but one hill missing on all the lots. That was on lot No. 1.

On the 27th of September I gathered it, and the result was as follows :

Reckoned 70 pounds to the bushel.

	Ears.	Pounds.		
Lot No. 1,	470	117	$53\frac{1}{3}\frac{6}{2}$	bushels per acre.
" " 2,	470	142	$64\frac{2}{3}\frac{9}{2}$	" " "
" " 3,	455	128	$58\frac{1}{3}\frac{7}{2}$	" " "
" " 4,	447	122	$55\frac{2}{3}\frac{4}{2}$	" " "
" " 5,	465	116	53	" " "
" " 6,	440	112	51	" " "

In the same field I tried another experiment on ruta bagas—manure in the hill.

Compost, soap and mud, 20 loads to the acre.
Bone, 50 bushels to the acre.
Poudrette, 50 " " " "
Green manure, 20 loads. "
Compost, as above, 20 "

The turnips on the green manure came up thinly, but they were very large. Bone, poudrette, and compost, made of mud and manure, nearly the same. Those manured with soap and mud, about twenty-five per cent. less. In another place in the same field I spread a cask of lime (slacked dry) on to the grass on twelve square rods, and ploughed it in; also, one bushel of salt on five square rods, and ploughed it in. I then manured it with compost, the same as the other parts of the field; planted it, part with corn and part with potatoes.

There was no perceptible difference in the corn. But the potato tops, where the salt was spread, were considerably larger. The result of potatoes, however, was as follows :

Per acre,	Salt,	235 bushels.
	Lime,	292 "
		272, without salt or lime.

In an adjoining field, where I ploughed in manure, I put into the hill as follows :

	Pounds.		Bushels.
Saltpetre,	150 to the acre.	Corn raised,	64 per acre.
	Bushels.		
Salt,	3 " " "	" "	$54\frac{1}{2}$ " "
Poudrette,	5 " " "	" "	$60\frac{1}{4}$ " "
Bone,	$7\frac{1}{2}$ " "	" "	$69\frac{1}{2}$ " "
Plaster,	3 " " "	" "	$70\frac{1}{4}$ " "
Ashes,	8 " " "	" "	$68\frac{1}{2}$ " "
Without any dressing in the hill,		"	60 " "

The above corn was weighed, and reckoned 70 pounds to the bushel.

In the fall of 1841, I prepared compost as follows :— with about eight loads of meadow mud I mixed fifteen bushels of wood ashes; also, another heap of the same size, I mixed two casks of lime. After a few weeks I spread it on to the grass in the same field. The grass the present season showed the good effect of the compost. But that dressed with compost of mud and ashes was the best.

In the fall of 1839, I prepared a heap of compost as follows :—one part stable manure, and two parts meadow mud. In the spring of 1840, I used it in the hill for potatoes. Also, part of the same field I manured with the same quantity of barn manure. There was no perceptible difference in the potatoes. In 1841 it was manured, and planted with corn. In 1842 it was sowed with oats. There was no perceptible difference in either of the crops.

In regard to salt, I have used it in different ways, and never have received any benefit from it, excepting as above stated in potato tops and compost for corn.

I have also used saltpetre in various ways; and have received very little, and in most cases no benefit from it. I have used ashes, and generally with very great success, although sometimes they do but very little or no good. I believe, however, that if our lands ever are enriched, it must be done principally by animal and vegetable manure, although other manures may be used to some extent to good advantage.

JOSEPH HOW.

Methuen, Nov. 30, 1842.

It will be seen that in several particulars Mr. Putnam's and Mr. How's experiments corroborate each other. Both seem to come to nearly the same opinion of bone manure, ashes and poudrette. In regard to saltpetre, for we believe nitrate of potash and nitrate of soda may be agriculturally considered one and the same thing, they differ. Mr. P.'s statement shows the reason, perhaps, of the difference. Nitrates benefit some crops, certain grasses for instance, and not others. They differ also in regard to the value of gypsum, or plaster. This is also accounted for by the now well established fact, that it operates in some places as a first rate manure, and in others it is nearly worthless. In the northwestern part of this county its effects are often obviously valuable. In the southeastern, as often inappreciable. Whether the waste soap used by Mr. How be soapers' waste, or salt ley, we had no means of ascertaining.

Mr. Putnam's experiments on salt ley are very instructive, and show it to be well worthy the attention of farmers whose lands are near soapboileries. [See Note A.] If, however, Dr. Dana be correct in his analysis and estimated value of this article, it would be much cheaper to manufacture it according to the following recipe, than to cart it six or eight miles from the manufactories.

"Fine snuffy peat,	- - -	50 lbs.
Salt,	- - - -	½ bushel.
Ashes,	- - - -	1 "
Water,	- - - -	100 gallons.

Mix the ashes and peat well together, sprinkling with water to moisten it a little. Let the heap lie for a week.

Dissolve the salt in a hogshead of water, and add to the brine the mixture of peat and ashes, stirring it well for another week, and it will be fit for use." To make the counterfeit more complete, we should think about twenty-five or thirty pounds of sulphate of soda should be added. This can be obtained at the Salem Laboratory for half a cent per pound, or less. We should recommend to future experimenters on manures, to study Dana's Muck Manual. Let the worth of his scientific teaching be tested by experiments.

As to poudrette, Mr. How's experiment corresponds with Mr. Putnam's opinion, and with what we have heard of its failure to produce a good crop of corn when used more extensively in other parts of the county. This article has been so puffed by the manufacturers *a la mode* the venders of patent medicines, that farmers were exceedingly liable to be induced to purchase it, at a price far beyond its value.

Dana says, poudrette is night soil partly dried in pans, and mixed up with variable quantities of ground peat and plaster. Its value will depend on the circumstance whether its Ammonia be saved or lost in the manufacture. Well manufactured, every 100 pounds of it is worth 200 pounds of the best human excrement, or 600 pounds of cow dung. The quantity necessary to manure well, land containing plenty of vegetable mould, or geine, or necessary to convert a cord of muck into compost worth as much as barn manure, may be readily calculated. While on this subject, we cannot forbear to mention and lament, that so much of this most valuable manure should be worse than wasted,—permitted to vitiate the air and well water, and consequently the comfort and health of our cities, towns, and villages. A remedy for all these evils, cheap, and yet of incalculable value, is obvious. It needs only a systematic and concerted management between the producers and the should-be-consumers of this manure. Let all vaults be

dispensed with, and tubs, casks, &c., of a size which, when nearly full, may be easily lifted into a farmer's cart, or wagon, be substituted therefor. To these, which should be the receptacles of all liquid and solid excremental productions of the family, let tight covers be fitted, and they may be removed to the field, the compost heap, without offending the sense of smelling more than so many casks of cider or spent ley would do —especially if a little gypsum, or coal ashes should have occasionally during the filling been thrown in as a sweetener. A family of four adults, or their equivalent in children, would produce at least 25 gallons per month of this semi-liquid poudrette, which, if well mixed with six or eight times its bulk of meadow mud, forms a most valuable compost; and could all be thus saved and used which is produced in this county, it would be sufficient, in addition to the other manures used by farmers, to raise to a high state of fertility every acre of tillage lands within the same territory.

Mr. Putnam and Mr. How will, we trust, observe the effect of their experimental manuring on future crops, and communicate all they may hereafter learn from their experiments on the length of time the several substances used may operate beneficially on the soil to which they were applied. To encourage them to do so, although their experiments were not so satisfactory as could have been wished, yet the public may derive some valuable information therefrom, and to induce others to become competitors for the premiums offered, by the consideration that they will be awarded to somebody, the committee recommend that the first premium, of twenty dollars, be awarded to Allen Putnam, of Hamilton, and the second, of ten dollars, to Joseph How, of Methuen.

Per order of the Committee,
ANDREW NICHOLS.

Georgetown, Dec. 20, 1842.

ON COMPOST MANURE.

The Committee on Compost Manure REPORT:

There is no one subject more interesting to the practical farmer than that of compost or artificial manure. How can I make or obtain the greatest quantity of the best quality at the cheapest rate, is a question which every one should ask himself, as he surveys his farm, and considers its situation, its soil, its wants, and its capabilities. On this subject he should seek information wherever it can be found and receive every new truth which science or experience may proclaim or demonstrate as a boon of great value. Considering the great importance of the subject, the Trustees of the Essex Agricultural Society offered three liberal premiums, of thirty, twenty, and ten dollars, "for the largest quantity of valuable compost manure, collected and brought into condition for use, on any farm within the County, the materials and ability of the claimant being taken into consideration, and a statement in detail to be given."

The claimants for these premiums, were Joseph How, of Methuen, Allen Putnam, of Hamilton, Justin Carter and John Chase, of Andover, and Charles B. Lander, of Danvers. The committee, after visiting the farms of these gentlemen, examining their statements, and obtaining all the information they could to enable them to decide justly and according to the spirit of their commission, agreed that no one was entitled to the first premium, of thirty dollars; that the second premium of twenty dollars, be given to Joseph How, of Methuen; the third do. of ten dollars to John Chase, of Andover; and a gratuity, of ten dollars, to Justin Carter, of Andover.

In examining the statements of these gentlemen, it may be observed that the chief merit of Mr. How's method and management consists in saving all the urine and the volatile parts of the droppings of his cattle and swine, by mixing them with muck, an article which

combines with what would be otherwise lost, and is thereby rendered soluble and rich food for plants. His statement is valuable, as it shows that every farmer may, by mixing his barn manure, with a sufficient quantity of muck, double or treble the quantity of his manure, without much expenditure of cash, by a little labor alone. It shews, taken in connexion with his statement on experiments with manure, that the old wasteful method of rotting down barn manure to a fit condition to plant Indian corn with, should be abandoned, for three times as much, equally good for the same purpose, can be made by mixing it fresh with muck in compost heaps. A practical farmer speaks, will ye not hear and be instructed?

Mr. Chase, according to his means, seems to have done equally well. He, too, has saved what is too often allowed to fly away on wings of the wind, or to percolate down to spring waters and flow into the sea.

Mr. Carter seemed to the committee to be entitled to notice, on account of a like economical management, in collecting materials and converting all his manure into compost, the value of which he seems to underrate, unless his loam and wash from the road side is much less valuable in compost than the same quantity of muck, and so it doubtless is. We should recommend to Mr. Carter and all others, similarly situated, to use muck in future; double the quantity of the loam used by him would, we think, mixed with the same animal manures, &c., be converted into a compost, worth as much, not half as much per cord, for immediate use, as green cow manure used alone. A cord of green cow manure is, of course, worth more when used as an ingredient of compost which is the only economical way of using it, at least on dry, gravelly lands. On lands full of peat or geine, it may be profitably spread and ploughed or harrowed in alone, as this operates to convert into a weak compost the soil itself. Mr. Putnam seemed in the opinion of the committee to be precluded from a premium this year, by the fact that he received a premium last year, for the same compost in part and the

same in kind with few exceptions as that on which his claim is this year founded. As a valuable appendix to his last year's report, and his other papers in this pamphlet, we recommend that his statement on compost be published.

Mr. Lander may have done well in purchasing, saving and making compost for his own particular farm, but his example cannot be economically followed by the greater part of the farmers of the county. No statement of the cost of the compost is given, but it seems evident that more money was paid out for materials to compose it, than most think they can afford. The compost used by him on about fourteen acres of tillage land in 1842, he states at 443 ox cart loads, with side boards, and that he has on hand, prepared for use another year, 118 loads more. Total 561 loads. He says:—

"In the foregoing quantity of compost, there was 60 loads night soil, ten cords horse manure, three cords muscle bed, 12 casks of air slacked lime, 300 bushels leached ashes, (drawn from Salem,) 300 loads meadow mud taken from a small piece of brook meadow upon the farm, the quality of which is poor, sand and clay entering largely into its composition.

"The stock kept during the winter was as follows; one yoke oxen, 8 cows, 4 yearlings, 3 horses and 6 breeding sows. In March, 1 pair of steers were purchased. During the summer, the cows were increased to ten in number, and were kept in the barn every night. Pigs increased to 30.

"In July and August, one yoke cattle were stall fed, and made a large quantity of valuable manure. For a month previous to clearing out the barn cellar, it received the manure of 6 additional cows."

In reviewing the whole subject referred to this committee on experiments on manures and compost, we would direct the attention of agriculturists to a few particulars worthy of their notice. Such as,

That peat or pond muck seems to be in most places the cheapest and most eligible article for the base of all

compost designed for use on light, dry, gravelly, or sandy soils.

That to prepare it for use it should be well mixed either by swine or by manual labor, with the excrementitious matter of animals, animal matter, ashes, or other alkalies.

That lime operates injuriously rather than beneficially on compost and on crops the first year, unless by long exposure to the atmosphere it has become saturated with carbonic acid, that is like chalk or marl.

That the experiments tend to confirm Dr. Dana's theory of manures, and thereby recommend the "Muck Manual" to the study of all enterprising farmers.

That although in compost as in other matters, "the more good things the better" provided the cost is not too much enhanced, many of the good things, especially salts, salt ley, &c., should be used with care, as too large doses of these convert the food of plants to poison; and although they may benefit the soil in the end, the crops for the first year or two, must be injured by such applications.

For the Committee,
ANDREW NICHOLS.

Georgetown, Dec. 20, 1842.

JOSEPH HOW'S STATEMENT.

To the Committee on Compost Manure.

GENTLEMEN—Had I in the early part of the season expected to have been called upon to make a public statement in regard to making manure, I might have been more particular than I now can be. My stock the past year has consisted of about 20 head of cattle, 2 horses and from 20 to 30 swine of different ages. I have made from my hogs about 100 loads, and mostly of mud, I made from my cow yard about 80 loads; this also was principally of mud. It was filled up in June, over hauled so as to make it fine, and spread on to the grass for top dressing, in August. I made in my

barn cellar from the first of December to the middle of May, from my cattle, horses, and a few shoats, about 100 loads. Also, from the middle of May to the last of October, from the droppings of nine cows, which were kept up in nights during the summer; and two horses most of the time; with six shoats to work over the mud, about 80 loads. This has been hauled out into heaps and covered with mud. I have now in the barn cellar, about 25 loads, making in all, including the mud that has been mixed with the manure in the field, I think, something over 400 loads for manure. By load, I mean a cart load of 36 bushels.

I use mostly mud for compost, and that I have to haul from one to one and a half miles; to purchase straw or meadow hay, is too expensive, excepting what is necessary to litter hogs, horses, &c., with.

If common meadow mud is of little or no value, without some preparation (and I think it is of but little value on my land) then the question naturally arises (with certain means) how much manure can be profitably made, taking into consideration the expense of labor. And this can be done in no other way, than by carefully trying experiments to ascertain its comparative value.

JOSEPH HOW.

Methuen, Nov. 1842.

JUSTIN CARTER'S STATEMENT.

To the Committee on Compost Manure.

GENTLEMEN—I submit to you the following statement, with regard to the quantity of compost manure which I have collected the past season, and the quality of the same. The first heap is composed as follows: Last fall I put four loads of loam at the end of my barn where I throw out the green manure, and let it remain there during the winter, and receive the liquid from the manure heap. When I got out my manure in the spring, I left two loads of the same which I spread over the loam, and then added two loads of manure from the hog-

pen, and one from the sink drain. I then added four loads of loam and one of wash from the road side, which I spread over the manure, and then added two loads of manure from a calf pen, three from the barn yard, and two loads that I took out from under the hovel floor where my cattle stand, and then spread four loads of loam smoothly over the whole, and let it remain until the last of August; and then overhauled it, and found it well rooted, and in good order for future use. I consider it worth half as much per cord as green cow manure. Expense of collecting and overhauling, $4,00. Amount, 25 loads; cart of common size, say 35 bushels.

The next heap is composed of nine loads of manure from the barn yard, and six loads of meadow mud, and three loads of loam. I drew the manure from the yard last spring and laid it in a heap, and then spread the mud over the manure, letting it remain in that state until the last of August; I then overhauled it, spreading the loam smoothly over the whole. This heap I consider worth about one third as much as green manure. Expense of collecting and overhauling, $3,00. Amount, 18 loads.

The next heap is composed of six loads of barn yard manure, mixed with the same quantity of fine chip dirt drawn out last spring, mixed together, and overhauled again the last of August; the cost of collecting and overhauling, $2,50. I consider it worth one third as much as green manure. Amount, 12 loads.

In addition to this, I have got what manure has been made in a slaughter yard since about the middle of May last There is the manure of two horses all the time, and three a part of the time. This manure is thrown down into the cellar, where the hogs root it over at pleasure. I have also put in thirty loads of loam, mud and wash, from the road, since I hired it. I have taken out three loads of the horse manure, which I mixed with the same quantity of wash from the road, making six loads, which I consider worth half as much as green manure cost, $1,50. There are probably five or six loads of horse

manure left—call it four, as I cannot tell the exact number. Total amount, 95 loads.

I hardly know how to value this manure. The horse manure is good, and that which lies under the blood hole is better; the rest is very good; and, taken together, I consider it worth at least two thirds as much as the best quality of manure. I have to pay at the rate of $30,00 per annum rent for the yard. It is about three fourths of a mile from my farm, and I teamed the stuff which I put in from it. Expense of teaming, $10. Whole cost, $22,50.

The stock kept on the place the past year, has been one yoke of oxen, three cows, one yearling heifer, and two hogs.

Very respectfully yours,
JUSTIN CARTER.

Andover, Sept. 17th, 1842.

ALLEN PUTNAM'S STATEMENT.

To the Committee on Compost Manure:

GENTLEMEN,—In making to you a statement as to the quantity of valuable compost used on my place the past year, I think I may be excused from going extensively into detail, because all the important particulars in regard to the materials used, the manner of compounding, the crops to which applied, and the results, are given in my statements concerning crops and experiments with manures.

My farm is small, consisting in all of only about thirty-seven acres. My stock is one horse, five horned cattle, and four swine. I employ two men. My barn-cellar, which is deep, with well pointed walls, and a tight plank floor, is the common receptacle for all the dung and urine of my stock, and for the waters from the kitchen. Here I put in much meadow mud and soil, and here my swine live and work.

Should you turn to my statement of last year,—"Transactions of 1841, page 46, you will find that I

was a year ago, preparing to make compost more extensively than is usual. There it is estimated that my quantity on hand prepared for use was 117 loads, and it is stated that I had actually applied, that season, 112 loads, of 35 bushels each. My farmer's journal, (for he puts down each night the day's work), his journal shows that since the 1st of December last, I have applied

Salt ley (or soapers' waste) and soil, as a top dressing on grass lands, - - -	113 loads.
The same kind of compost with 15 bushels of bone, and one box of scum, or sediment from sugar refining, (mostly bone black), used on grain, - - - -	40 "
Meadow mud, 9 bushels bone, and 4 of salt on rye for feed, - - - -	20 "
Compost for corn, (particulars in statement on corn crop), - - - -	64 "
Compost, my barn cellar compost, for carrots, - - - - -	19 "
Compost, do. for sugar beets, - -	3 "
Compost, that from the cellar, much diluted with meadow mud, and spiced with 200 lbs. of meat, and 100 bushels of barilla ashes, - - - - -	23 "
Compost, barn cellar, for garden, -	3 "
" " " for corn.	
Sowed corn and potatoes, - -	17 "
Compost, barn cellar, with lime, plaster, salt, and bone, (for squashes), - -	4 "
Compost, for ruta bagas—soil, meadow mud and sand. Also, salt ley and bone, (particulars in ruta baga crop), -	15 "
Compost, barn cellar, for do. - -	4 "
Composts, for experimental lot, (see that statement), - - - - -	3 "
	328 "
These were used in winter and spring.	
In August, salt ley on land that I was seeding down to grass. - - -	33 "
Actually applied since Dec. 1,	361 loads.

I have also now ready for spreading, by estimation, of cellar compost, - - - 50 loads.
and of salt ley, - - - - 8 "
The quantity for the year, 419 loads.

Each load about 30 bushels this year.

I believe you are furnished in the other statement with all the particulars that you will desire.

ALLEN PUTNAM.

Hamilton, Nov. 14, 1842.

P. S. The cost to me of the bone, barilla, salt ley and salt for the two years, when delivered on the farm, is probably $150 to $160. A. P.

JOHN CHASE'S STATEMENT.

To the Committee on Compost Manure:

GENTLEMEN—Encouraged by the conditions on which the Society's premium is offered in this very important department of agricultural improvement, viz., the ability of the claimant, I have thought proper to make a statement of the manner and amount of compost I have made the past year, and have now in a state of preparation. My means in a pecuniary point of view are very limited, but I have easy access to meadow mud, which forms the basis of my compost, and which after testing its efficacy for several years, can, without hesitation pronounce it preferable to barn manure. I made the last year 55 loads of 30 bushels in the following manner. I kept one cow, two yearlings, one horse, one to three pigs. From eight to twelve inches deep of muck were placed under my cattle and swine, and two feet under my horse, all which were kept constantly bedded with coarse meadow hay, good for nothing else. Have a reservoir that will hold two or three loads, that receive all the soap suds. Make from 100 to 120 bushels of peat ashes; manufacture annually 1½ cords domestic poudrette; put 12 to 15 loads of said muck into my barn yard, which is occasionally stirred with the plough, or otherwise; I throw no manure out of the barn during

winter. If my cow cannot be kept comfortable by forking it about and dry bedding, a portion of it goes into an apartment in the rear, where my pigs are kept in winter. Early in spring all is thoroughly mixed and turned once or twice before using it. I have witnessed and tried various methods to make the most or best manure from one or two cows. One is, to have the loam or muck at hand, and throw the droppings into a heap in the middle of the yard. By this method you save the dung, but lose the urine of the animals, which I consider of equal value as the other excrements. In short, I endeavor to save all the urine I can, both animal and human. I keep no team; and to buy manure and hire it teamed is more than I can do. If this desultory statement should stimulate others to increase their manure heaps, as some may three or four fold, it will not be in vain.

All which is respectfully submitted.

JOHN CHASE.

Andover, Sept. 28, 1842.

ON FARMS.

The Committee on Farms regret, that it is not in their power to report so fully on the subject committed to their care, as they wished to have done. But two farms were entered for the premium offered;—and a combination of circumstances, beyond the control of the committee, prevented their united examination of these farms, while the crops were growing. Statements of the produce of these farms have been received, and carefully examined;—abstracts of which are hereunto annexed, marked A. and B. Your committee understand the main purpose of offering these premiums on farms to be, to induce our good farmers to bring forward their methods of cultivation, in a form that other farmers may avail themselves of their experience. It is not enough, therefore, to state the *amount* of their produce, but they

must show *how* it was produced. And if it shall appear that valuable improvements have been made in the *manner of cultivation*, such improvements are the objects for which premiums are to be given. Another consideration operated on the minds of the Committee, which was, that they did not feel at liberty, under the rules of the Society, to award a premium for the same farm for which a premium had heretofore been awarded, unless it were of a higher order.

In view of these facts, your Committee forbear to express any opinion of the comparative merits of the claimants for premiums, at the present time; and also think it best for them and for the Society, not to award any premiums the present year.

We understand that the Trustees have determined to increase the number and amount of premiums on Farms the ensuing year. And we shall be pleased to consider these claimants as entered for these premiums. We hope that there will be many other competitors, so that when the premiums shall be awarded, it shall be in a manner to give *credit*, as well as *cash*, to those who may be successful.

We would not be understood as entertaining unfavorable views, as to the farms offered for our consideration; —all we mean to say is, that we think it best that further opportunity should be given to develope their merits.

Respectfully submitted.
In behalf of Committee,
N. W. HAZEN.

December, 1842.

A.

Produce of HORACE WARE'S *farm of forty acres in Marblehead, in* 1842.

Hay, 45 tons of 1st crop, 5 tons second crop.
Asparagus, $\frac{3}{8}$ths of an acre; 1100 bunches.
Potatoes, 3 acres; 600 bushels.
Squashes, 3 acres; 7 tons of marrow, 2 tons crook-neck.
Onions, 1 acre; 274 bushels.
Beets, 1 acre; 13 tons.
Carrots, $2\frac{1}{2}$ acres; 31 tons.

English turnips,	1½ tons.
Blood and turnip beets,	1 ton.
Parsnips,	20 bushels.
Barley, 1¼ acres:	30 bushels.
Corn,	40 bushels.
Cabbages,	2000 heads.
Apples,	80 barrels.
Pork,	1200 lbs.
Manure,	100 cords.

B.

Produce of the Town Farm *of forty acres in Danvers, in* 1842

Hay, 26 tons of 1st crop; 3 tons of second crop.

Pork,	10,843 lbs.
Corn,	300 bushels.
Winter Rye,	217 bushels.
Spring Rye,	58 bushels.
White Beans,	22 bushels.
Potatoes,	750 bushels.

Vegetables, 2 acres, for the use of the inmates of the house.
Oxen fatted, one pair.
Manure, 200 cords.
Meadow reclaimed, five acres.

ON FRUITS AND FLOWERS.

The Committee upon Fruits and Flowers would Report:

That the accommodations here were better than heretofore, and that the committee of arrangements executed their duty with good taste. The fruits exhibited were excellent, and in good variety. The fruit from Andrew Dodge, of Wenham, and Moses Pettingel, of Topsfield as usual, consisted of a number of kinds. The beautiful seedling peach of Mr. Emerson, of this place, as well as the fine seedling apples of Joseph How, of Methuen, attracted, and deservedly too, much attention, as also the fine grapes of Nathaniel Swift. The bouquets of flowers and purple egg plants of John Marland, of Andover were fine, as were also 30 varieties of dahlias

from Mr. Parker, of Billerica, and the pyramid of the same flower of Doct. Sanborn, of Andover. Flowers were from Mr. N. A. Prentiss, of Andover, and Rebecca Tyler Wood, of Boxford. Fruits were also shown from E. S. Parker, of Bradford, Doct. Clark, of Andover, Moses Abbot, of Andover, Capt. Stone, of Saxonville, Wm. Allen, E. N. Easton, of Andover, Peabody Russell, of Boxford, Clark & Millet, of Andover, and J. M. Ives, Salem. Mr. C. W. Hartwell, of Andover, sent in the largest variety in the rooms, consisting of 32 varieties pears, 30 of apples. Also, peaches, plums, and grapes.

In the exhibition your Committee observed the same fruit in some instances marked with different names. Now, although there are those who consider correctness as to names of but little consequence, this should not be; as for example, we received from a friend scions of a celebrated fall apple from Worcester, called "Mathis Stripe," and from another source, one called Nonpareil, also, from Salem, grafts of the "Osgood Favorite." These three when fruited, proved to be the "Lyscom apple," of Southborough, in this State, a fruit which we had already in our collection. In another instance we received grafts of the celebrated early Washington apple of New Hampshire, which proved upon fruiting to be the Early Bough. We also received trees from New Jersey of their famous winter Imperial apple, which are now well fruited with the Baldwin.

From these few examples it is obvious that great confusion arises from this habit of giving names, as is often done, not only in our country but in Europe. That deservedly favorite pear, called Bartlett, was originally raised from seed by a schoolmaster in England, named Wheeler. A Mr. Williams receiving grafts of this man, affixed his own name to the fruit; some thirty years after it was found growing in the garden of Mr. Bartlett, near Boston; his name was then given to this fine pear. The pear is known in Europe as "Williams's bon Chretien."

The glass globes of honey exhibited by George W. Sawyer, of Boxford, and Rev. Sam'l C. Jackson, Ando-

ver, as also the bearing fig tree of Doct. Sanborn, were very handsome.

Your Committee have awarded the following gratuities. Upon Fruits:

To Joseph How, Nath'l Swift, and C. W. Hartwell, $2,00 each.

To Professor Emerson, George W. Sawyer, Rev. Mr. Jackson, Moses Pettingel, Andrew Dodge, J. M. Ives, E. N. Easton, Wm. Allen, Moses Abbot, Doct. Clark, Peabody Russell, $1,00 each.

To J. S. Holt, and Clark and Millet, 50 cts. each.

Upon Flowers:

To John Marland and Doct. Sanborn, $2,00 each; N. A. Prentiss, Miss Phelps, and D. Parker, $1,00 each.

Respectfully submitted,
for the Committee,
J. M. IVES.

ON FRUIT TREES.

The Committee on Fruit Trees respectfully REPORT.

That there have been but two entries made for the award of the Society, which, upon examination, were found to come within the conditions upon which premiums are offered.

These were made, the one by Allen W. Dodge, Esq., of Hamilton, the other by Mr. Moody Ordway, of West Newbury. Mr. Dodge's nursery consists of more than 500 inoculated and grafted apple trees, of one or two years from the bud. Mr. Ordway's, of a much larger number, including his pear, plum, and peach trees, of the same description. Both of these nurseries are in a good, flourishing, and healthy condition; have been well trimmed, and otherwise well cultivated. Comparing the nursery of Mr. Dodge with that of Mr. Ordway, we are not able to discover any such marked difference, excepting as to numbers, as would have made it easy to determine which should have the preference. And we

are influenced therefore entirely by the fact, that the nursery of Mr. Ordway is much the most numerous, when we recommend that the first premium of $15 be awarded to Mr. Ordway, and the second of $10 to Mr. Dodge.

The Committee will here subjoin that, though these gentlemen have no competitors, yet the Committee would not have recommended these awards, did they not think the condition of their nurseries justly entitles them to the Society's patronage.

GARDNER B. BERRY,
ANDREW DODGE,
ALLEN PUTNAM,
JOHN W. HARTWELL,
JOHN M. IVES. } *Committee.*

Andover, Sept. 28, 1842.

ON LIVE FENCES.

The Committee on Live Fences have the pleasure of REPORTING the three very interesting statements of experiments upon this subject which are appended. They do not conceive that any remarks are necessary to excite attention to these accounts, or to add to their interest. After much deliberation they have awarded to Mr. Derby the first premium, of $20, and the second, of $10, to Mr. Dodge.

The statement of Dr. Cogswell tends to prove what has been much doubted, that the Hawthorn may be successfully cultivated in our climate and soil.

For the Committee,

N. W. HAZEN.

E. HERSY DERBY'S STATEMENT.

To the Committee on Live Fences:

GENTLEMEN—In compliance with your request that I should furnish you with a detailed account of my various

experiments in the formation of "live fences," with their results, I have the pleasure to send you the following statement; only premising, that I gave to each plant a fair and impartial trial, and that the information I offer, has at least, the value of actual experience.

It is now more than forty years, since I became convinced of the superiority, both as regards durability and beauty, of live fences over any other mode of enclosure in use among us, and made it my endeavor to ascertain what plant was best suited to the purpose. I first tried the English Hawthorn, but I found it would not bear our climate; the long droughts frequent in our warm summers materially injure its beauty; it is often blighted, and loses its foliage early in August, and even in the more favorable seasons it assumes a wintry appearance in September; it is disfigured by numerous dead branches, which give it a ragged and unthrifty appearance, even in its most verdant season; and is very subject to the attacks of the borer, by which I have known a whole hedge to be destroyed. This first hedge, which measures about twenty rods, is still standing in my orchard, but I have long given it up as incorrigible, and it is not included in the present measurement of my hedges; and a second one with which I had enclosed part of my garden, was only kept from decay by subsequently interposing young Buckthorn plants alternately with the Hawthorns; by this means it became a good hedge; but had it been *all* of Buckthorns it would have been still better. I am so convinced of the unsuitableness of the English thorn for our climate, that I would not admit another hedge of it into my grounds if it could be done free of expense. My next experiment was with the Triple thorned Acacia; this is a very beautiful plant when grown as an individual tree, but it did not answer my expectations for a hedge; the plants ran up without interlacing, and the thorns being mostly upon the upper branches, the hedge was too open at the bottom to be any protection to the land it enclosed; and it was besides, too feeble a plant to bear our more severe winters. I made my next trial with the Crab Apple, and

here I failed entirely; a hedge which I formed of this, had nothing to recommend it in any way. In the year 1808, I happened to have some young plants which had come up from the chance scattered seeds of the American buckthorn, or Rhamnus catharticus, and finding they made a good growth in the nursery to which they had been removed, I determined to try to form a hedge of them, and I have been well pleased with the result. They were set out in 1809, and very soon became a fine hedge of about twenty rods in length, which has remained so until the present time; not a single plant having failed from it, nor have I ever known it to be attacked by any insect. This hedge being my first experiment with the Buckthorn, I did not keep it headed down so closely as I have since found it expedient to do, and consequently it is not quite so impervious at the bottom, as some of my younger hedges which have been more severely pruned. Being fully satisfied that I had at last found the plant I wanted, I have since that time set out various hedges of it, at different periods, until I can now measure 160 rods of them, all, in my opinion, good hedges,—and I do not hesitate to pronounce the Buckthorn the most suitable plant for the purpose that I have ever met with. It vegetates early in the spring, and retains its verdure late in the autumn; I have often seen it green after the snows had fallen; being a native plant, it is never injured by our most intense cold, and its vitality is so great that the young plants may be kept out of the ground for a long time, or transported any distance without injury. It never sends up any suckers, nor is disfigured by any dead wood; it can be clipped into any shape which the caprice or ingenuity of the gardener may devise; and being pliable, it may be trained into an arch, or over a passage way as easily as a vine; it needs no plashing or interlacing, the natural growth of the plants being sufficiently interwoven. It is never cankered by unskillful clipping, but will bear the knife to any degree; during the last winter I found one of my hedges had grown too high, casting too much shadow over a portion of my garden, and wishing to try how

much it would endure, I directed my gardener to cut it down within four feet of the ground; this was done at mid winter, and not without some misgivings on my own part, and much discouraging advice from others; but it leaved out as early in the spring as the other hedges, and is now a mass of verdure. I have been applied to for young plants by persons who have seen and admired my hedges, and have sent them to various states in the Union, and I have never in any instance heard of their failure.

I have also tried the experiment with the American Hawthorn, or "Yankee thorn," as it is called in this neighborhood; but this though a strong and durable hedge, is very far inferior in beauty to the Buckthorn; the leaves becoming spotted in August with yellow spots, which give the whole plant a rusty appearance.

My method of forming a hedge, is to set the young plants in a single row, about nine inches apart, either in the spring or autumn; if the latter, I should clip it the following spring within six inches of the ground; this will cause the hedge to be thick at the bottom, which I regard as a great point of excellence; after this, all that remains to be done, is to keep it from weeds, and clip it once a year. I consider June as the best time to trim it, as it soonest recovers its beauty at that season. The clipping may be done either with the garden shears, a hedge knife, or even with a common scythe.

I believe, gentlemen, I have now given you all the information in my power upon hedges; and I must trust to your interest in the subject to excuse me, if I have complied too literally with your request, and made a "twice told tale" too long.

I am, gentlemen, with great respect,

Yours, &c.,

E. HERSY DERBY.

Salem, Sept. 19, 1842.

PICKERING DODGE'S STATEMENT.

To the Committee on Live Fences :

GENTLEMEN—I hand you herewith as concise an account as possible, of the manner in which I have grown and cultivated the buckthorn hedge, which I offer for your examination.

On the 10th of October, 1834, I gathered a quantity of buckthorn berries, at Waltham, and planted them on my Woodside farm at Lynn, on the 16th of the same month. The rows were properly guarded during the winter with cedar brush, which my pastures furnished me in any quantity, and remained covered until the middle of April. The seeds vegetated the latter part of May, in the following spring, 1835; the plants grew to the height of three or four inches in the course of the summer, and were protected with a slight covering of coarse barn-yard litter late in November. I consider this protection indispensably necessary, to guard against their being thrown out by the frost, or washed out by the winter rains.

Early in May of the following year, 1836, we prepared a suitable portion of ground, richer and more fertile than the seed-bed, and with a dibble pricked out the plants into rows fourteen inches asunder, and at about three inches distant from each other in the row.

The season was very propitious, and the plants being kept perfectly free from weeds, and frequently hoed, they generally attained a height of twelve and eighteen inches, and were proportionately strong and stocky. I did not consider it necessary to protect them in the nursery with litter, but early in November we drew the soil from the centre of the rows towards the plants, then earthing them up three or four inches.

In the autumn of this year I purchased my present estate at North Salem, the soil of which is of a light, sandy nature. We passed the greater part of the winter in hauling clay and muscle-bed on to the land, leaving it in heaps until the month of April, when, having become decomposed by the action of the frost, it was equally spread and ploughed in.

Having fixed upon the locality of my hedges, we next opened a trench three feet wide, and threw out all the soil, distributing it equally on each side. We then dug out the sand and carted it away, until we had opened a trench three feet wide and eighteen inches deep. Into the bottom of this trench we put six inches of clay, treading it firmly down; upon this clay we then put six inches of barn yard manure, and lastly, returned the soil from the side, and incorporated it with manure, mixing them thoroughly together, with as much care, and very much in the same manner as we would do for melons.

The soil having been thus prepared, we then opened a trench eight inches wide, and of a suitable depth, through the centre of which we stretched a garden cord, and having provided ourselves with a hand trowel and a stick eight inches in length, commenced on the 12th of April, 1837, setting the plants at that distance from each other, taking care to keep the roots well spread out on the bottom of the trench.

The hedges were frequently hoed during the summer, in order to keep the ground light and open around them, but received no particular culture until the following spring, 1838, when they were gently dug around, and on the 8th and 9th of May, I cut in each plant separately to four inches in height.

This operation, and the care with which they had been planted, caused them to shoot forth most vigorously, and the summer growth was truly surprising, forming before autumn very respectable boundary lines.

The hedges were not trimmed again until the following summer, when on the 21st of June, 1839, they were cut in to 14 inches high, and 10 inches wide, stretching a cord along the top as a guide. This trimming was performed with the large garden shears, and proved rather a slow, tedious process. The following season I procured a suitable implement, the model of which was furnished me by an Englishman, as the proper hedge knife of England. The knife is formed of the best cast steel, measures 21 inches in length, and 2 inches in width, considerably curved towards the point, and

is secured to a heavy hard wood handle, by a socket and strap. With this powerful instrument, the operator will cut over a great extent of hedge in the course of a day.

On the 23d of June, 1840, the hedges were trimmed with this knife 18 inches high and 14 inches wide, and received no other culture during the season.

On the 29th and 30th June, 1841, they were trimmed to two feet in height, and 18 inches in width, inclining them slightly inwards towards the top.

The hedges were trimmed this season on the 28th of June, $3\frac{1}{2}$ feet in height, and $2\frac{1}{2}$ feet wide, bringing the centre to a point in the conical form, in which you now see them.

I have been thus particular in detailing the method of cultivation I have pursued, not so much from the expectation of communicating anything new upon the subject, as from the desire to induce every one who proposes planting a hedge, 1st, to gather or purchase the seed, and raise his own plants, thereby enabling him to select from several hundred those of equal size and thrift, as near as possible. 2dly, to induce him to spare no pains in having the ground properly prepared and manured; and 3dly, to impress upon him the importance of close and continued pruning, without which it is impossible to form a compact, handsome hedge.

I have never used any other plant than the buckthorn, and therefore am not perhaps competent to judge of its comparative merits; but from personal observation I should not hesitate to pronounce it, decidedly, the most suitable hedge plant for our section of the country. I have now growing upon my farm at North Salem, one hundred and twelve rods of hedge, containing 2800 plants, and in no instance have I ever known one to fail, or perish, from any cause whatever.

I am, gentlemen, very respectfully,
Your ob't serv't,
PICKERING DODGE.

September 14, 1842.

GEORGE COGSWELL'S STATEMENT.

To the Committee on Live Fences:

GENTLEMEN—A part of the hedge which I offer for premium is hawthorn, the other part is buckthorn. There is about seven rods of the hawthorn, which was set by me in the spring of '34. The plants were then two years old, taken from a nursery at Indian Hill Farm, West Newbury, Mass. They were placed six inches apart, without any previous preparation of the soil. They were cut within *six inches* of the ground when set out; the September following trimmed nearly back to the *first cutting;* spring following, in June, trimmed to within eight inches of the last cutting; again in September trimmed nearly back to the spring cutting; and so on from year to year, to its present growth; which is five feet three inches high, and three feet thick. It is now eight years since the hedge was set; for the last three it has been used as a fence to my front yard, and has proved an impenetrable barrier to any annoyance which might occur from numerous droves of cattle and swine. It has been kept free from weeds, and manured twice. No plant of the original number has died. During the summer, this presents a beautiful and delicate foliage, surpassing that of any other hedge-plant with which I am acquainted. For some seasons, in September, its beauty has been marred by the slug-worm; beside this it is perfect; cattle do not browse or hook it.

The buckthorn hedge was set out in the spring of '39; the plants were then two years old; the mode of trimming has been nearly the same as the other. A part of the soil is moist—the rest somewhat dry. No plants have died. It appears hardy, and holds green till late in the season. As a hedge plant it requires a longer time than the hawthorn, having few thorns. The cattle browse it in some measure, and also hook it. This hedge is about 17 rods in length.

Yours, &c.,
GEORGE COGSWELL.

Bradford, Sept. 17, 1842.

ON MULBERRY TREES AND SILK.

The Committee on Mulberry Trees and Silk, having, since the annual meeting of the Society, viewed the trees entered by Mr. Joshua Toppan, of Newbury, the same being the only lot this year entered for premium, REPORT:

That the number of trees raised by Mr. Toppan, is only large enough to bring them within the terms prescribed by the Society, but as they appear in a thrifty and healthy condition, without any special pains having been taken to stimulate an unnatural growth, they think he is entitled to the first premium of $10,00, and would recommend that the same be awarded him.

Judging from the few entries for premiums on silk and on mulberry trees the present year, it would seem that there is less interest manifested in these subjects, than has existed in past years. The inquiry naturally suggests itself whether the business of raising trees and silk worms is declining among us; and if so, to what cause is it to be attributed? We may safely infer that it is not increasing, or there would be more competition for the premiums offered by the Society. Indeed, unless silk is raised in larger quantities than it has been in this county, the rearing of mulberry trees must soon cease, as the demand for them will cease to exist. It is an easy matter to raise mulberry trees of three or four years growth; but if raised solely for the purpose of obtaining premiums, and if afterwards the culture of them is abandoned and they are not used for the legitimate purpose for which they should be raised, it is obvious that they will soon cease to be raised at all. The day has gone by for speculation in mulberry trees; the demand for them is limited; silk is hardly as yet a staple manufacture, and there seems no sufficient inducement to enter largely into their cultivation. Hence it is that, as we believe, so little is now doing in this department among us.

It is suggested whether it might not subserve the pub-

lic interest to offer premiums for mulberry trees of *ten or fifteen* years growth that have never been used for feeding worms. Young trees transplanted and fed, do not thrive well, and soon become of little value. We are aware that it is desirable for the purpose of convenience in gathering the leaves to have trees of little height; but this object may be preserved by heading down the trees as they advance in age, and training the branches laterally. The theory that worms may be fed by cutting up small trees for that purpose, appears plausible, and is very generally advocated; but if we consider the liberal encouragement which for a series of years has been held out by the State, and the amount of premiums offered by agricultural societies, and then inquire how much silk is actually produced, we must come to the conclusion, either that the business is unprofitable, or the theory a poor one. At all events, we think it deserving of trial to offer inducements for the raising of mulberry trees to the age we have named; and if they answered no other object, they would make the most durable of timber, said to last for posts as long as the locust.

For the Committee,

ALLEN W. DODGE.

Hamilton, Dec. 17, 1842.

JOSHUA TOPPAN'S STATEMENT.

To the Committee on Mulberry Trees:

The subscriber presents to you for premium five hundred and twenty one mulberry trees, two years old; average height, from 5 to 5½ feet, and at the present time in a very thriving state, and belonging to the species called Alpine. Last year the leaves were culled to feed silk worms. This year the leaves have remained on the trees. The labor spent upon them has been small, care only being taken to free them from weeds.

JOSHUA TOPPAN.

Newbury, Sept. 27, 1842.

ON MANUFACTURED SILK.

The Committee on Manufactured Silk REPORT:

That but one specimen of manufactured silk was submitted to their inspection. This consisted of one pound and two ounces of sewing silk, dyed with different colors. They have no hesitation in pronouncing this specimen as unusually fine; and in this opinion they are happy to have the support of numerous ladies, who of course, are much more competent than the committee to decide upon the merits of such articles.

It was matter of surprise to the committee to find no competition in the subject entrusted to their care. They had supposed that, what with the State bounties and the premiums offered by this Society, sufficient inducement was held out to engage in the silk business. The principal claimants for the State bounties (amounting last year to nearly $5000), have come from the central counties of the Commonwealth, and it may be that so few in our own county have entered on this new branch of industry because they prefer to wait awhile, and see the results of the labors of others, before embarking largely themselves in it. If the statements of those most deeply interested in the culture of silk are to be relied on, there can be little doubt of its being a profitable pursuit. Some of the committee have made experiments on this subject, and are fully satisfied of the correctness of those statements. At the present time, when almost all kinds of agricultural produce are so low, is it not for the interest of the Essex farmers to begin to make experiments in order to test the question for themselves, whether here is not a new branch of industry open to their pursuit.

In conclusion, the committee unanimously recommend that the first premium of $10,00 be awarded to Priscilla P. Atwood, of Bradford, for the specimen of silk exhibited by her.

For the Committee,
ALLEN W. DODGE.

PRISCILLA P. ATWOOD'S STATEMENT.

To the Committee on Manufactured Silk:

GENTLEMEN—The specimen of silk herewith presented for your examination weighs one pound two ounces, and is offered for premium, if thought worthy. The worms were hatched about the 20th of May, were unusually vigorous and thriving, and began to spin in twenty days, which is at least ten days sooner than any previous crop has ever commenced. This was the result, I think, of full and regular feeding, as they were rather crowded on the shelves. I have fed with the common white, and multicaulis variety of mulberry; prefer the latter, for the ease of picking and feeding.

I have made use of the clock reel, and twisted on the common high wheel. I am not able to state precisely the time spent in manufacturing, but have employed myself since the 11th of August, when not otherwise engaged. To cleanse, I have put my silk in soap and water, loose in the kettle, boiling about one hour. It has since been stretched and glossed by rubbing with flannel. I have nothing farther to communicate, unless at your request.

Yours, with respect,
PRISCILLA P. ATWOOD.

Bradford, Sept. 28, 1842.

ON DOMESTIC MANUFACTURES.

The Committee on Domestic Manufactures, having attended to their duty, beg leave to offer the following REPORT:

The number of articles in this was greater than that of some previous years, being 137, and exceeded them in variety, and skill, and taste. In execution, some of the articles were so exquisitely wrought that the committee could hardly believe them to be executed other

than by machinery; with everything exhibited they were peculiarly gratified. The habits of industry and economy displayed in the execution of some of the articles exceed all praise; and while your committee express themselves highly pleased with the interest manifested, and exertions made by the ladies to add pleasure and variety to this anniversary, they must express their regret at their own inability to do justice to the merits of the works they exhibited. The number of articles, the limited time, and impatience of the public, necessarily caused them to perform their work in a hurried manner; and if anything is omitted, or overlooked, the candidate for premium will believe us, when we say it was, if deemed worthy, unintentional on our part. They have awarded the following premiums and gratuities :

Mrs. John Jacobs, of Danvers, for best piece of carpeting, 1st premium, - - - $5 00
Mr. H. Shed, South Andover, 2d premium, 3 00
Miss N. Foster, Danvers, for Rag Carpet, gratuity, 2 00

Hearth Rugs.

Mrs. B. Oliver, Lynn, 1st premium, - 3 00
" Elizabeth P. Mudge, Danvers, 2d premium, 2 00
Mrs. Metcalf, of Salem,
" Lydia A. Foster, Andover,
" A Lady of Salem, aged 70,
Miss Hannah Hale, Newbury, aged 14,
" S. E. Ingersoll, Salem,
Mrs. H. Hale, Newbury,
Mrs. C. B. Lunt, Danvers,
Mrs. E. S. Hunt, "
Mrs. O. W. Putnam, "
Mrs. Stephen Adams, Byfield,
" M. W. Whitmarsh, Beverly,
" Mary C. Noyes, Newbury,
" Judith Noyes, "
" Anna D. Patch, Wenham,
" D. S. Caldwell, Newbury,
" Mary Kimball, Haverhill, for hearth rugs, a gratuity each, of - - - - 1 00

Daniel Saunders, Andover, for woolen cloth, 1st premium, - - - - - $2 00
Handsome specimens of cloth and flannels, from George Hodges, Esq., and Ballard Vale Company, were presented for exhibition.
Abigail Cole, Boxford, for woolen cloth, gratuity, 1 00
Miss S. E. Griffith, Beverly, for best woolen hose, 1st premium, - - - - 2 00
Mrs. Nancy Cleaves, " for hose, gratuity, 1 00
For best wrought counterpane, to Sarah Gleason, Andover, 1st premium, - - - 2 00
Mrs. Mitchell, South Andover.
Miss Mary Ballard, "
" Maria Phelps, "
Mrs. A. Barker, N. Andover, for counterpanes, a gratuity each, of - - - - 1 00
Mrs. H. Harriman, Georgetown, aged 90 years, for two pair cotton hose, gratuity of - 1 00
Miss E. S. Sewell, Danvers, for silk hose and bag, 1 00
Mrs. Dorcas Hale, Newbury, for hose, gratuity, 1 00
Mrs. West, Haverhill, do. do. 1 00
Miss A. Lovejoy, Andover, do. do. 1 00
For best specimen of linen cloth, to Mercy W. Tyler, Boxford, 2d premium, - - 2 00
An elegant wrought cape, table cover, and several articles, by a lady of Salem, gratuity of - - - - - 2 00
Temperance Society, Danvers, New Mills, for wrought shoes, a gratuity of - - 1 00
John Glimes, West Newbury, for combs, - 1 00
Miss Lydia W. Proctor, Danvers, for wrought bucket cover, - - - - 1 00
Mrs. Worcester, Danvers, for wrought lace and hair work, - - - - - 1 00
Miss Mary E. Morrison, Danvers, for work bag, gratuity, - - - - 1 00
" N. C. Porter, do. lamp stand, 1 00
A fine specimen of shoe thread, from Smith, Dove & Co., of Andover, was presented for exhibition.

A. A. Sheldon, aged 9 yrs. for work bag, gratuity, 1 00
Helen N. Stone, Beverly, for do. do. - 1 00
Miss Mary A. Putnam, Danvers, for net work, 1 00
Mrs. Dorothy Howarth, Andover, for mat, 1 00
Ann H. Allen, Lynnfield, for various wrought articles, she having but one hand, a gratuity, 2 00
Mrs. Mitchell, Andover, for shell work, - 1 00
E. S. Hood, Salem, for landscape drawing, - 1 00
Miss L. D. Blanchard, Andover, for wax flowers, 50
Miss Sarah F. Clarke, Andover, for two elegant wrought ottomans, - - - 1 00
Lydia N. Dole, Newburyport, for painted table, 1 00
J. Griffith & Co., Andover, for imitation French boots, 1st premium, - - - - 4 00
Mrs. Mary Taylor, Danvers, for mittens, - 50
Charles A. Butterfield, Andover, for thick boots, 1st premium, - - - - 3 00
H. T. Jacobs, Danvers, for lace veil, 1st premium, 3 00
Mary B. Chandler, Andover, blind from birth, specimens of work, gratuity of - - 2 00
Caroline A. Chickering, aged 6 years, for wrought work, - - - - 1 00
Miss F. Abbot, Andover, for knit work, - 1 00
Elizabeth M. Valpy, Andover, for wax flowers, 50
Betsey Braddock, Andover, for lace edging, - 1 00
Catherine Gerrish, Newburyport, for wrought cape, 1 00
Mr. D. S. Caldwell, Newbury, for shawl, - 1 00
David Stiles, Middleton, for horse shoes, - 50
Harwell L. Dodge, Wenham, for counterpane, 1 00

LIST OF

PREMIUMS AND GRATUITIES

AWARDED IN 1842.

Butter.

William R. Putnam, Hamilton, for June Butter, 1st Premium,	$10 00
Daniel Putnam, Danvers, do. do. 2d do.,	8 00
Nathaniel Felton, do. do. September Butter, 1st Premium,	10 00
Isaac Carruth, Andover, do. do. 2d do.	8 00

Cheese.

Lucy Osgood, Andover, 1st Premium,	10 00
Isaac Carruth, do. 2d do.	8 00

Ploughing—Double Teams.

Samuel Jenkins, Andover, 1st Premium,	12 00
George P. Wilkins, Middleton, 2d Premium,	10 00
Samuel Jenkins, Bradford, 3d do.	8 00
John F. Carlton, Andover, 4th do.	6 00
James Stevens, 2d, do. gratuity,	6 00

Single Teams.

Allen Putnam, Hamilton, 1st Premium,	10 00
Timothy F. Wilkins, Middleton, 2d Premium,	8 00
Isaac Osgood, Andover, 3d do.	6 00
Andrew F. Curtis, Middleton, 4th do.	4 00
The Town's Farm, Danvers, gratuity,	3 00

Ploughing—Horse Teams.

Seth Kimball, Andover, 1st Premium,	8 00
John A. Stevens, Methuen, 2d Premium,	6 00
Plummer Weeks, Andover, gratuity,	4 00

Working Oxen.

Joseph Kittredge, Andover, 1st Premium,	10 00
Charles Foster, do. 2d do.	7 00
Joseph Holt, jr., do. 3d do.	5 00

Working Steers.

William Peters, Andover, 1st Premium,	7 00
John F. Carlton, do. 2d do.	5 00

STEERS—3 YEARS OLD.

Allen W. Dodge, Hamilton, 1st Premium,	$7 00
Joseph Kittredge, Andover, 2d do.	5 00

STEERS—2 YEARS OLD.

Charles Foster, Andover, 2d Premium,	4 00
Jacob Farnham, do. yearling, 1st Premium,	4 00

STEERS—3 YEARS OLD.

Ralph H. Chandler, Andover, gratuity,	2 00
Thomas E. Payson, Rowley, for a calf, gratuity,	2 00
Samuel F. Barker, Andover, 4 calves, do.	2 00

FAT CATTLE.

Joseph Kittredge, Andover, 1st Premium,	15 00
Alexander Davidson, do. 2d do.	10 00

BULLS.

Enoch Silsby, Bradford, 1st Premium,	10 00
Thomas E. Payson, Rowley, 2d Premium,	8 00
William P. Endicott, Salem, 3d do.	6 00
Benjamin Boynton, jr., Andover, 4th Premium,	4 00
Benjamin Poor, West Newbury, gratuity,	3 00
Daniel P. King, Danvers, do.	2 00
Charles B. Lander, Danvers, do.	2 00

COLTS.

Thomas Wellwork, Andover, gratuity,	3 00
James Abbott, do. do.	2 00

SWINE.

William S. Marland, Andover, 1st Premium,	5 00
Bailey Loring, Andover, weaned Pigs, 1st Premium,	6 00
Josiah Crosby, do. do. do. 2d do.	3 00

MILCH COWS.

Joseph Kittredge, Andover, 1st Premium,	10 00
Jeremiah Stickney, Rowley, 2d do.	7 00
George Hood, Lynn, 3d do.	5 00

HEIFERS.

William S. Annis, Methuen, 1st Premium,	7 00
William S. Marland, Andover, 2d do.	5 00

SILK.

Priscilla P. Atwood, Bradford, 1st Premium,	10 00

FRUIT.

Joseph How, Methuen, gratuity,	2 00
Nathaniel Swift, Andover, do.	2 00
C. W. Hartwell, do. do.	2 00
Professor Emerson, do. do.	1 00
George W. Sawyer, Boxford, gratuity,	1 00
Rev. Mr. Jackson, Andover, do.	1 00
Moses Pettingill, Topsfield, do.	1 00

Andrew Dodge, Wenham,	gratuity,	$1 00
John M. Ives, Salem,	do.	1 00
E. N. Easton, Andover,	do	1 00
Wm. Allen,	do.	1 00
Moses Abbott, Andover,	do.	1 00
Dr. Clark, do.	do.	1 00
Peabody Russell, Boxford,	do	1 00
I. S. Holt, Andover,	do.	50
Mr. Clark, do.	do.	50
Mr. Millet, do.	do.	50

FLOWERS.

John Marland, Andover,	2 00
Dr. Eastman Sanborn, Andover,	2 00
D. Parker, Billerica,	1 00
N. A. Prentiss, Andover, gratuity,	1 00
Miss Phelps, do. do	1 00

CARPETING.

Mrs. John Jacobs, Danvers, 1st premium,	5 00
Mrs. H. Shed, S. Andover, 2d do.	3 00
Miss Mercy Foster, Danvers, gratuity,	2 00

HEARTH RUGS.

Mrs. B. Oliver, Lynn, 1st premium,	3 00
Elizabeth P. Mudge, Danvers, 2d premium,	2 00
Mrs. Metcalf, Salem, gratuity,	1 00
Lydia A. Foster, Andover, gratuity,	1 00
A Lady, A. E. W., Salem, do.	1 00
Hannah Hale, Newbury, do.	1 00
S. E. Ingersoll, Salem, do.	1 00
Mrs. H. Hale, Newbury, do.	1 00
Mrs. C. B. Lunt, Danvers, do.	1 00
Mrs. E. S. Hunt, do. do.	1 00
Mrs. O. W. Putnam, do. do.	1 00
Mrs. Stephen Adams, Byfield, do.	1 00
M. W. Whitmarsh, Beverly, do.	1 00
Mary C. Noyes, Newbury, do.	1 00
Judith Noyes, do. do	1 00
Anna D. Patch, Wenham, do.	1 00
D. S. Caldwell, Newbury, do.	1 00
Mary Kimball, Haverhill, do.	1 00

WOOLEN CLOTH

Daniel Saunders, Andover, 1st premium,	2 00
Abigail Cole, Boxford, gratuity,	1 00

WOOLEN HOSE.

S. E. Griffith, Beverly, 1st premium,	2 00

HOSE.

Mrs. Nancy Cleaves, Beverly, gratuity,	1 00

COUNTERPANE.

Sarah Gleason, Andover, 1st premium,	$2 00
Mrs. Mitchell, do. gratuity,	1 00
Mary Ballard, do. do.	1 00
Maria Phelps, do do.	1 00
Mrs. A. Barker, do. do.	1 00

COTTON HOSE.

Mrs. H. Harriman, Georgetown, gratuity,	1 00

SILK HOSE AND BAG.

Elizabeth S. Sewell, Danvers, gratuity,	1 00

HOSE.

Mrs. Dorcas Hale, Newbury, gratuity,	1 00
Mrs. West, Haverhill, do.	1 00
Miss A. Lovejoy, Andover, do.	1 00

LINEN CLOTH.

Mercy W. Tyler, Boxford, 2d premium,	2 00
Lady, Salem, table cover, cape, &c., gratuity,	2 00
Ladies' Temperance Society, Danvers, wrought shoes, gratuity,	1 00
John Glimes, West Newbury, combs,	1 00
Lydia W. Proctor, Danvers, cricket cover, gratuity,	1 00
Mary E. Morrison, do., work bag, gratuity,	1 00
N. C. Porter, Danvers, lamp stand, do.	1 00
Abigail A. Sheldon, Beverly, work bag, gratuity,	1 00
Helen N. Stone, Beverly, do. do.	1 00
Mary A. Putnam, Danvers, net work, do.	1 00
Mrs. Dorothy Howarth, Andover, mat, do.	1 00
Ann H. Allen, Lynnfield, hose and chain, do.	2 00
Mrs. Mitchell, Andover, shell work, do.	1 00
Elizabeth S. Hood, Salem, landscape drawing, gratuity,	1 00
L. D. Blanchard, Andover, wax flowers, gratuity,	50
Sarah F. Clarke, Andover, ottomans, gratuity,	1 00
Lydia N. Dole, Newburyport, painted table, gratuity,	1 00
J. Griffin & Co. Andover, men's calf boots, 1st premium,	4 00
Mrs. Mary Taylor, Danvers, mittens,	50
Charles A. Butterfield, Andover, boots and shoes, 1st premium,	3 00
H. G. Jacobs, Danvers, lace veil, 1st premium,	3 00
Mary B. Chandler, Andover, bags, &c., gratuity,	2 00
Caroline A. Chickering, do. lace work, and socks, gratuity,	1 00
F. Abbott, Andover, knit work, gratuity,	1 00
Elizabeth M. Valpey, do. wax flowers, gratuity,	50
Betsey Braddock, do. lace edging, do.	1 00
Catharine Gerrish, Newburyport, wrought cape, gratuity,	1 00
Mrs. D. S. Caldwell, Newbury, shawl, gratuity,	1 00
David Stiles, Middleton, horse shoes, do.	50
Harriet L. Dodge, Wenham, counterpane, gratuity,	1 00
E. Hersy Derby, Salem, live fence, 1st premium,	20 00
Pickering Dodge, do. do. 2d do.	10 00
	$470 50

In addition to the premiums awarded at the Annual Exhibition, amounting to four hundred sixty eight dollars and fifty cents, the following premiums have been awarded by vote of the Trustees.

Joseph How, Methuen, for experiments in fattening swine, the first premium of	$15 00
Daniel P. King, Danvers, for experiments in reclaiming meadow land, 1st premium of	20 00
Moody Ordway, West Newbury, Nursery, 1st premium,	15 00
Allen W. Dodge, Hamilton, do. 2d premium,	10 00
Ralph H. Chandler, Andover, best plough, 1st premium,	10 00
Charles B. Lander, Danvers, market wagon, gratuity,	3 00
Sylvester Stevens, Stoneham, straw cutter, do.	6 00
Joshua Toppan, Newbury, mulberry trees, 1st premium,	10 00
Enoch Bradley, Haverhill, Indian corn, 1st do.	10 00
Allen Putnam, Hamilton, do. do. a gratuity,	5 00
Joseph How, Methuen, quantity compost manure, 2d premium,	20 00
John Chase, Andover, do. do. do. 3d do.	10 00
Justin Carter, Andover, do. do. do. a gratuity,	10 00
Allen Putnam, Hamilton, experiment on manures, 1st premium,	20 00
Joseph How, Methuen, do. " " 2d do.	10 00
John Peaseley, Danvers, crop of carrots, 1st do.	10 00
Allen Putnam, Hamilton, " " ruta baga, do.	10 00
	$194 00
Amount brought over,	470 50
	$664 50

Attest, DANIEL P. KING, Sec'ry.

Danvers, Jan. 2d, 1843.

PREMIUMS OFFERED

BY THE

ESSEX AGRICULTURAL SOCIETY,

FOR

1843.

For the most extensive, valuable and economical improvements in the cultivation and management of an entire farm, with all its appendages, within the last *five years*.

First premium, - - -	$50 00
Second do. - - -	30 00
Third do. - - -	20 00

☞ The Trustees have enlarged and varied their statement of premiums offered for *entire farms*, in the hope of increasing the number of competitors. They have also determined to admit as competitors, all farms within the county, whether large or small, for which the *first premium* has not been awarded, within *seven years*. A detailed statement of the management and produce will be expected, by the 15th of November. Notice of intention to claim these premiums must be given to the Secretary, on or before the 20th of June. The committee will visit such farms as may be entered, in July and September.

The same premiums as last year for the products of the Dairy; on Turning in Crops as Manure; on Forest Trees, not less than three years old; on the Cultivation of Mulberry Trees; and on Silk, and on Irrigation and Improving Meadow Lands. Also, on Improved

Agricultural Implements, except ploughs; on Comparative Value of Crops as Food for Cattle; on Experiments on Manures, and for the largest quantity; on Fattening Cattle and Swine; on Grain Crops, with the addition of $10 premium, for the best conducted experiment in raising a mixed crop of corn and potatoes, or mixed grain, on not less than one acre; the same premium for Root Crops. All statements must be made to the Secretary previous to the 15th November. The same premiums are offered for animals which must have been owned by the person exhibiting them at least six months. The same on Domestic Manufactures, Fruits, Flowers and Vegetables, and Fruit Trees; on Ploughing, the same, except that one pair of oxen and a horse are to be admitted as a double team; single teams must plough at least six inches deep; no team or plough which has taken a premium of this Society will be entitled to another, except of a higher grade.

For the best plough, a premium of $12 00
For the second do. " " 8 00

To be awarded to the manufacturer, if he resides within the Commonwealth.

The whole amount offered in premiums by the Society the present year is $1,078. No animal or object for which a premium has heretofore been awarded by this Society will be entitled to another, except of a higher grade or for different qualities. For further particulars, see the printed hand bills.

By order of the Trustees,
DANIEL P. KING, Sec'ry.

Danvers, Jan. 1, 1843.

[NOTE A.]

Dr. Nichols has kindly sent me the proof sheets of his version of my statement, and permitted me to supply an omission, occasioned by a loss of a portion of my manuscript.

My experiments with poudrette, in past years, have led me to regard it as convenient and good for forcing early vegetables, but not worth its cost for common field culture.

The accounts of salt ley upon my corn and ruta baga crops, will be seen in the appropriate statements. Where used as a top-dressing on grass lands, the effect was good, there having been apparently an increase, above the last year's crop, of 70 or 80 per cent. Part of the increase was perhaps owing to the better season. The quantity applied was about 600 gallons of ley, in three cords of soil per acre.

The version of my statement as given by the committee, is less satisfactory to me than my own account, but I am not disposed to complain. I must, however say, that the rule, page 82, for finding the exact action of the several manures, leads to less favorable results than were obtained. The fault may arise from the obscurity of my own manuscript; but whether so or not, I do not subscribe to the committee's deductions as correct. There is so much difficulty in making qualifications, by estimation, for the difference in soil, that I much prefer the statement in the New England Farmer, No. 20, Vol. XXI, to the account here given. I feel persuaded that the unqualified results published in the Farmer, are more correct guides than the qualified ones in these pages.

Had the committee seen the quality of my corn, and of the potatoes on many of the lots, they would have made much less difference in the value per lb. than they do.

Were I attempting to find the value of the action of the manure on lot No. 1, I should look first to lot No.

16, which had no manure. This I find worth 2 cents and 7 mills, if I value the several kinds as the committee have done. Lot No. 1 is supposed to be better by $\frac{1}{20}$ than No. 16, *in soil*. Therefore, I would add $\frac{1}{20}$ of 2 cents and 7 mills to 2 cents and 7 mills, and get 2 cents and 8 or 9 mills. Subtract this from 16 cents and 2 mills, (the value of the crop on No. 1), and the remainder is 13 cents 3 mills, instead of 10 cents, as given by the committee. I wish it to be distinctly understood that I make no complaint of the doings of the committee; and that in this note I am only saying that *I* should get at results differing from those given in the table. Perhaps the reason of the difference is the indistinctness or errors of the statement which I handed in. That was prepared in much haste, when other labors pressed heavily upon me.

ALLEN PUTNAM.

January 27, 1843.

Dr. *Wm. Sutton, Treasurer, in account with Essex Agricultural Society.* *Cr.*

To amount received of Andrew Nichols, Treasurer,			$252 98	By amount of Premiums and Gratuities awarded in 1841,	$582 00
" Dividends Received—Exchange Bank,	$45 00			" Sundry bills paid,	64 47
Salem Bank,	16 50			" Paid Andrew Nichols, services,	15 00
Mercantile Bank,	38 50			" Do. J. W. Proctor, do. and bills,	60 00
Commercial Bank,	44 00			" Do. for printing,	141 24
Merchants Bank,	33 00			" Do. for new pens,	220 00
Warren Bank,	104 50				500 71
Village Bank,	30 00			" Do. for 12 shares in Lynn Mechanics Bank, at 95 pr. ct. per share,	1140 00
		311 50		" Balance in treasury,	107 16
" Interest on B. Goodridge's Note,	7 28				
" Do. Commercial Bank,	20 00				
" Do. Savings Bank,	22 67				
		49 95			
" Amount withdrawn from Savings Bank,		907 66			
" Received for admission of members,		27 00			
" Do. of B. Goodridge, amount of Note,		96 78			
" Bounty received of Commonwealth,		600 00			
" Premiums unclaimed and forfeited,		84 00			
		$2329 87			$2329 87

FUNDS OF THE SOCIETY.

Balance of cash on hand,	$107 16	5 Do. Village do.	500 00
19 shares Warren Bank,	1900 00	3 Do. Salem do.	300 00
12 Do. Exchange do.	800 00		6673 33
11 Do. Commercial do.	733 33	Jonathan Shove and B. Goodridge's note,	318 59
7 Do. Mercantile do.	700 00	John Nutting's note, (secured by mortgage),	500 00
12 Do. Lynn Mec's do.	1140 00		818 59
6 Do. Merchants do.	600 00		$7599 08

SALEM, Oct. 1st, 1842. (Errors and omissions excepted.) W. SUTTON, TREASURER.

The undersigned, having examined the foregoing account of the Treasurer, find the same correctly cast, and well vouched.

SALEM, Dec. 8, 1842. DANIEL P. KING, ASAHEL HUNTINGTON, } Committee on Finance.

OFFICERS OF THE SOCIETY,

Chosen Sept. 28th, 1842.

LEVERETT SALTONSTALL, of Salem, PRESIDENT.

DANIEL ADAMS, 3D, of Newbury,
JOHN W. PROCTOR, of Danvers,
SOLOMON LOW, of Boxford,
ASA T. NEWHALL, of Lynnfield.
} VICE PRESIDENTS.

WILLIAM SUTTON, of Salem, TREASURER.

DANIEL P. KING, of Danvers, SECRETARY

TRUSTEES.

JEDEDIAH H. BARKER,	Andover.
ANDREW NICHOLS,	Danvers.
JEREMIAH COLEMAN,	Newburyport.
GEORGE HOOD,	Lynn.
THOMAS E. PAYSON,	Rowley.
ANDREW DODGE,	Wenham.
JAMES H. DUNCAN,	Haverhill.
NATHANIEL FELTON,	Danvers.
NATHAN W. HAZEN,	Andover.
MOSES FRENCH,	Salisbury
JOSEPH HOW,	Methuen
FREDERIC HOWES,	Salem.
ASAHEL HUNTINGTON,	"
JOSIAH KIMBALL,	Boxford
JOSEPH KITTREDGE,	Andover
ROYAL A. MERRIAM,	Topsfield
MOSES NEWELL,	West Newbury
ALLEN PUTNAM,	Hamilton.
DEAN ROBINSON,	West Newbury
JOHN P. SAVARY,	Georgetown,
JESSE SHELDON,	Beverly
HOBART CLARK,	Andover
ERASTUS WARE,	Salem.
ENOCH SILSBY,	Bradford

MEMBERS ADMITTED IN 1842.

EASTMAN SANBORN,	Andover.
CHARLES A. BUTTERFIELD,	"
GILBERT BARNARD,	"
WILLIAM PEIRCE,	"
WILLIAM A. LANDER,	Danvers.
CHARLES B. LANDER,	"
BENJAMIN PORTER,	"
CHARLES A. ANDREW,	Salem.
SAMUEL MOODY,	West Newbury
GEORGE HOOD,	Lynn.
HAZEN HASELTINE,	Haverhill.
WILLIAM R. COLE,	Boxford.

Any citizen of the County may become a member by paying to the Treasurer three dollars. Members are not liable to any assessments.

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TRANSACTIONS

OF THE

ESSEX AGRICULTURAL SOCIETY,

FOR

1843.

VOLUME III.—NUMBER IV.

PUBLISHED BY ORDER OF THE SOCIETY.

JANUARY, 1844.

SALEM:
PRINTED AT THE GAZETTE OFFICE.
1844.

MR. SALTONSTALL'S ADDRESS.

Gentlemen:

An apology may seem to be necessary for my presuming to address you on an anniversary, in which you have been accustomed to listen to the instructive counsels of practical agriculturalists, bringing to you the results of their observation and experience. You know, gentlemen, that my lot in life has been so cast, that I can have no practical, and but little theoretical knowledge of agriculture, and no pretensions to the honor you have conferred upon me by your invitation to address you, except those which arise from my connexion with this Society from its commencement, and from a deep sense of the importance of the agricultural interest above all others, as a source of individual happiness, and of national prosperity. Agriculture is indeed a subject in which every man has, and should feel an interest, for it is the basis of all other interests, and is essential not only to the comfort, but to the very existence of society.

On this twenty-sixth anniversary of our Society, permit me to congratulate you on its success and prosperity. The display of animals, of vegetable productions, and of implements of husbandry, the trial of that great and earliest instrument of agriculture, and indeed of civilization, the plough, and the exhibition of articles of domestic manufacture, have never been excelled on any former occasion, and afford the most gratifying evidence of the progress of agricultural improvement.

Our Society was one of the earliest in the Commonwealth. At first it had to contend with great prejudices.

Many farmers in this ancient county were contentedly going on in the old paths, in which their Fathers had gone before them. From generation to generation they had cultivated the earth in a certain mode, and little improvement, or indeed change had been made. Their Fathers had prospered without the aid of agricultural associations, and why should they meet together, to exhibit the produce of their farms, and to communicate to each other the results of their experience? Their fathers had learned to cultivate the soil without reading agricultural journals, and why should they resort to books for instruction on this practical subject? Agriculture was deemed a mere imitative art, not to be improved by scientific researches. These prejudices have passed away. No one now opposes or attempts to cast ridicule on these associations, which are spreading over our broad land, and whose good effects are seen in improved cultivation, not only in our own blessed New England, but in the States of the far West — and their light has broken in upon those less favored regions, where labor is not held in that honorable estimation which it must enjoy, before a community can be truly prosperous.

We live emphatically in an age of *Association*. Men had before formed joint-stock companies for the accomplishment of objects beyond the reach of individual enterprize — they had gathered into societies for religious, benevolent, and literary purposes; but it was reserved for our day to discover that this great element of man's power, *combined effort*, is the lever, which is to move the world. We see it developed and applied in every form, which ingenuity can suggest, and for the promotion of every object beneath the sun. It may well be doubted whether the influence of this combined action on individual opinion and character is always salutary. I know that no one is bound to join, or to give a reason for not joining an association on compulsion — but still, popular opinion, not always enlightened or well regulated, may be brought to bear upon men with such force, as to deprive them of their freedom of choice, and they may fall into the ranks of a society

from a sort of moral duress. Whenever the inflamed one-idea partizans of any cause, however good, deal in denunciations of those who do not see eye to eye with them, as to its importance, or the mode of effecting it — it is a violation of their neighbors' rights.

"Who with another's eye can read?"

It would be no greater assumption in a man to demand of others, to read with his concave spectacles, when their eyes require convex glasses, or none at all, than pertinaciously to insist on their co-operation with him in the promotion of any cause, according to his particular views.

We have sometimes been reminded of the sufferings of the harassed poet under vexatious importunities:

"Shut, shut the door, good John, fatigued, I said,
Tie up the knocker, say I'm sick, I'm dead."

Much good and much evil have, no doubt, come of this tendency to association. We believe our society to be free from all objections. It is open to all — the terms of admission are such that no one who desires to become a member of this association of farmers, is excluded — but no one has been pressed into it. Its object is one of the most important which can engage the attention of man — improvement in the cultivation of the earth — the increase of productions which are essential to human existence. Its mode of operating is, by exciting a generous emulation among farmers, and by promoting habits of industry, temperance and economy of labor, which tend not only to improve the condition of the agricultural class, but to the happiness of the whole community.

The object of these associations is vastly comprehensive. It embraces whatever can tend to the improvement of agriculture and horticulture in all their branches, and to the increase of the quantity and improvement of the quality of the productions of the earth. These are objects worthy the attention of the enlightened statesman, and yet they are within the reach of every industrious husbandman.

Much good has been done by this society. Perhaps there has at no time been any striking change in farming in this county. The improvement has not come with observation — "Lo here, or lo there!" — but we see the results. Its progress has been like that of vegetation — you see it not, but it goes on — "first the blade, then the ear, then the full corn in the ear," until it is ripened for the joyful harvest. Many are indebted to the operations of this society for their own improvements, who are not themselves sensible of it. It is not necessary to be a practical farmer to notice the agricultural improvements around us. It is seen in the richer covering of our fields, in the greater variety and abundance of products, and in the improvement of stock. Many of our farmers have learned that an inferior animal requires as much care and expense as a good one, and "that both are thrown away upon cattle which will neither give milk nor meat." They have learned that corn strengtheneth the heart of the patient and laborious ox, as well as of man. They are learning the importance of procuring improved implements of husbandry. In neatness too — they are learning that clean cultivation is, like personal neatness, a great attraction. Although there is still much room for improvement, the chosen receptacle of carts, ploughs and clutter of all sorts, is not so commonly as it once was, in front of the house, and across the door path. These are removed to a more suitable place, while before the house, you see a neat enclosure. I rejoice to add, that that sex, whose taste and whose influence give a finish and a charm to the rougher works of man, are learning that the most beautiful house is never so beautiful as when something is left to imagination, and it is seen through trees and shrubs — our noble elms, our beautiful mountain ashes and firs, our familiar lilacs, which have always found favor in New England, roses, and dahlias, those lovely flowers which may dispute with the rose the lofty title of "Queen of Flowers."

Still we often look in vain, and on some of our best farms, for the neat grass plot ornamented with shrubs and flowers and climbing vines. We should learn that

these things, which are within the reach of every one, and which in themselves seem but trifles, make the most simple farm-house attractive, and that while they improve the taste, they contribute essentially to our enjoyment. As has been beautifully said, "they are the innocent occupation of the young members of the family, the elegant luxury of them all, and they impress even the passing stranger with a sense of the taste and the ease of the farmer."

Farmers of Essex — you have then every inducement and every encouragement to persevere. Little permanent good of any kind can be effected, except by diligence and perseverance, stimulated by the hope of success. The cause of agriculture has recently received a stimulus which it never before felt. Its improvement in this country and in Europe has been so rapid, and its advance and estimation as a science so great, that it would be an instructive labor to trace its progress. This would require a knowledge of its condition at different periods, and of its principles, practice and statistics, which would render the attempt in me vain, even if it could be brought within the compass of a discourse.

Nowhere has this improvement been greater than in our *Father-land*, as England may well be called by the farmers of Essex, many of whom are now cultivating the fields set off to their English ancestors in the "division of lots," two centuries ago. Agriculture was introduced into England by the Romans, and strange as it may seem, very little improvement was made in the art for many centuries afterwards. Greater progress has probably been made within the last half century than in the sixteen hundred years succeeding the Roman conquest. Is it not astonishing, that in a state of society so advanced as to produce the acknowledged master spirits of England in literature, the arts, and in science, the parent art — the art of arts — should have been passed by as unworthy of their attention, and as wholly disconnected with science?

The subject is so closely connected with political

economy, and the condition and resources of nations, that no well informed man can be wholly ignorant of the astonishing progress of agriculture in England, as seen in the improvement of stock, in the variety and rotation of crops, in the introduction of new grains and vegetables, in the knowledge and composition of manures and their more judicious application, and in their gathering up the fragments, so that nothing shall be lost of every animal and vegetable substance, which can give additional fertility to the soil, and increase its production.

The improvement in agricultural implements too, has probably been greater within thirty years, than for centuries before. Within a comparatively recent period, the husbandman held the plough made by his own hand. Indeed it was expected of the ploughman to be able to make his own plough. And now — what a change — nearly fifty varieties of ploughs have been exhibited at a fair of the Royal Agricultural Society — And this is not so wonderful as the fact just announced to this meeting, that twenty-five ploughs have been offered this day, for premiums, at a trial of ploughs to be had. Our distinguished minister to England, Mr. Everett, at the late great festival of that Society, remarked, that "'Till lately, all the great improvements in agriculture seem to have been the product of the infancy of mankind." "The very plough described by Virgil, is to be found in the south of Europe." But he adds — "In going the round of your implement and stock yard, I could not fail to be struck with the fact, that how much cause soever might have existed in former times, for complaining of the deficiency and want of improvement in the construction of agricultural implements, or in any other part of agriculture, there was no room now for making a similar complaint."

The result of the spirit of improvement in live stock, is wonderful. What would an English farmer (or an American one) now think of the ox, the sheep, the swine or the horse of the time of Queen Elizabeth! He would scarcely know the animals; he certainly would

not give them barn room, or permit them to mingle with his flocks and herds.

Great permanent improvement has also been made in the soils of England by draining, irrigation and other processes, which have in effect enlarged the productive lands of the kingdom. Millions of acres have been reclaimed from comparative sterility, and are now luxuriant fields.

This improvement and extension of agriculture has enabled England to meet the wants of a rapidly increasing population, by an equally increasing production of the necessaries of life. There is high authority for saying, that the crop of oats and beans is equal in value to the commerce between Great Britain and the United States, which exceeds that between any other two nations, and that the grass crop is of more value than all the foreign commerce of the kingdom.*

The spirit of agricultural improvement has been carried to a great extent in Holland and Belgium, and an impetus has been given to it in France, and in all the northern nations of Europe. Governments and people seem at length to perceive, and practically to acknowledge, that agriculture is the paramount national interest, as the producer of national wealth, and the means of support, comfort and enjoyment.

But successful cultivation depends so much upon circumstances peculiar to each nation, that it may be asked —What has an American farmer to learn from the experience of other countries? We answer, much every way. The great cause of agricultural improvement in England has been the application of scientific principles to the practice of husbandry; and science is universal. She overleaps all national boundaries. She confines not her favors to the old or the new world, nor contracts within the narrow limits of geographical lines, what was meant for mankind.

But we need not go abroad for evidence of the juster estimate of the importance of agriculture.—The spirit

* Mr. Everett's Speech.

of improvement is spreading over our broad land. It has even penetrated into old Virginia — and you know that the first article of a Virginian's creed has been, that nothing Virginian is capable of improvement. That eminent agriculturist, the late James M. Garnett, has told us what the state of farming has been, in the old dominion, and what are its present condition and prospects.* "Formerly (he says) cattle were so much neglected, that it was common for the multitudes starved to death every winter, to supply hides enough for shoeing the negroes on every farm — my grandfather was once near dismissing a good overseer, because cattle enough had not died on the farm, to furnish leather for that purpose! It is a favorite opinion with many, even now, that all kinds of farming stock, except horses, are endued with a sort of natural sagacity or instinct, which enables them to choose for themselves, in bad weather, much better shelter than their owners could provide for them. In the spring you may behold a spectacle sad enough to move the pity of any person who can feel for brute beasts—hogs, half dead with the mange — sheep, which have saved nearly all the trouble of shearing, by dropping a large portion of their fleeces in the fields, and have prevented an overstock of lambs by yeaning them in situations convenient to the politic troop of buzzards, which may be seen hovering over them, in greedy anticipation of their customary feasts — and cattle, heaven help them, for man will not, with their backs arched, as much as their spines will admit, and all four feet drawn under them, to balance themselves, as it were, lest a stronger wind than common should place them in a situation which we call *being on the lift*. I know not whether you northern farmers understand the meaning of this phrase — we apply it to cattle that have fallen down from utter inability to stand, and of course, are unable to rise without being lifted up again."

"And as to dairies in old Virginia, I doubt, whether one in a hundred of our ordinary farmers, owns such a

* Transactions of the New York Agricultural Society, 1841 — page 175.

thing as a dairy, or would know how to construct one properly. Among all such farmers, butter is an article quite as scarce in the spring, as if it were prohibited by law."

What a picture of agriculture, in the land of heroes and of sages — the mother of States! And this in the year eighteen hundred and forty-two! Thank heaven, these phrases do require explanation to a northern farmer, where cattle are *on the lift* only by the improvement of their breed; and who do understand, (and their wives too,) the meaning and the use of a *dairy*.

But let us rejoice with the distinguished agriculturist, that these disgraceful proofs of bad husbandry in Eastern Virginia are rapidly disappearing, and that an impulse has been given by agricultural journals and societies, which has effected improvements, which will, without doubt, be permanent.

The great improvements already made in agriculture have increased the facilities and advantages of farming in the United States, and encourage us to aim at still further improvements. We have now in this country implements of husbandry of the very best kind — said to be much better than similar instruments in Europe—for the free American mind takes the lead of all others, in mechanical inventions. With respect to cattle, we have every variety and the best of all varieties. We have, too, all the varieties of sheep and of swine introduced from abroad, or improved at home. And as to horses, we are said to possess quite as good a race for draft, and even for the turf, as there is in England.

The progress of agricultural improvement has been accelerated, as the importance of this branch of industry has been more and more appreciated. And it is indeed an interest of the highest national importance. It furnishes at least three fourths of all the exports of the United States. The last annual report of the Commissioner of patents — a very valuable document — contains a tabular estimate and statement of the crops of eighteen hundred and forty-two. Time will not allow of details — The aggregate crop was immense; the

amount of bread-stuffs, including potatoes, being 716,-147,950 bushels. And the crops of this bountiful year will probably be greatly increased. By a comparative statement of the arrivals of flour at tide water, by the Erie canal, from the opening of the canal in April to the close of August last, it appears that the enormous number of 926,813 barrels passed, being 143,032 more than in any previous year.*

The last census shows that the number of persons employed in agriculture is more than one third of the whole population, and nearly three times as many as are employed in manufactures, trade, commerce and navigation. Our Country is essentially a nation of farmers — and when we consider the rapid increase of population, the subject of agriculture swells into one of immense magnitude. Applying the ratio of increase of the last, to the next fifty years, a period which some who hear me will reach, the population in eighteen hundred and ninety will be seventy-four millions, and at the end of a century, three hundred millions. What but agriculture can sustain and furnish employment to this mighty population ?

The mind is overwhelmed, as it contemplates, in connexion with this subject, the future destinies of our Country. Think of its vast extent, stretching along the coast, through twenty degrees of latitude, and spreading from the Atlantic to the great Western ocean — imbosoming inland seas, and traversed by mighty rivers, the sources of some of which have scarcely yet been explored. Think of its rich and various soils, heaving

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* Note. This has been since greatly increased.

Flour and Wheat.—Account of flour and wheat arrived at tide water during

	3d week in October.		Total to 22d October.	
	Flour, barrels.	Wheat, bushels.	Flour, barrels.	Wheat, bushels.
1839,	48,683	39,466	568,797	362,588
1840,	91,080	100,445	1,240,404	1,059,617
1841,	62,691	47,529	1,206,591	525,507
1842,	112,549	64,325	1,193,670	700,369
1843,	106,076	42,849	1,531,283	634,719

Reducing the wheat to flour, allowing five bushels to a barrel, we have an aggregate of 1,656,227 barrels of flour arriving at tide-water since the opening of navigation.—[Albany Argus, October 24.

with agricultural wealth — yielding plentifully every variety of products. Above all, think of its free institutions, its increasing means of universal education, its accumulating population and their intelligence and enterprise, and then gratefully acknowledge that no country on the globe is, or ever was so richly favored of Heaven. Since we have been engaged in the labors and recreations of this day, thousands of mighty trees, the lords of the forest, have fallen beneath the axe of the hardy settler. Millions of acres are reduced to cultivation, every year. And still the tide of population flows on, and will flow on, wave after wave, westward, until it shall meet the shores of the Pacific.

We are indeed "a world by ourselves," and would American farmers, the real strength of the country, feel and fulfil their responsibilities, and their call, elevate their views above all low and sectional considerations and go heart and hand for our country — our whole country — we should in truth be independent of all other nations. The facilities of communication, now so great, are constantly increasing, and opening new markets, in every part of the nation. New cities are springing up, which must be fed from the soil. Our domestic commerce, now of vastly greater importance and amount than our foreign, will be increased tenfold, as it will find its materials in the exchange of our various products. The mighty valley of the Mississippi, a wilderness within the recollection of some of us, already contains a population of more than five millions. By the statistical tables accompanying the last census, it appears, that the value of certain leading articles of agricultural stock and of produce in eighteen hundred and forty, in the Mississippi valley, was $538,000,000.*— What is to work all these wonders? Agriculture — the *plough* is the magic instrument which is to work these miracles — to make the wilderness blossom like the rose.

No other country possesses so great advantages for

* National Intelligencer, September 9, 1843.

the pursuit of agriculture, as ours. Nowhere else is such unrestricted *locomotive* power enjoyed. Here, no laws exist, directly or indirectly, confining men to a particular occupation or place. Industry is in every respect free and unfettered. Agriculture is open to all, and within the reach of all.

We of Massachusetts should take an especial interest in the object of this society. The founders of New England were from necessity, cultivators of the soil.— "They left their pleasant and plentiful homes in England, to plant their poor cottages in the wilderness."— They drew their support from the earth, the common mother of us all — from the soil to which they fled for the enjoyment of civil and religious liberty. She required toil, but gratefully yielded back with interest all that was bestowed upon her. She has nourished and brought us up as children The men who achieved our independence — who were they? Principally farmers. The men, in commemoration of whose gallant exploits their grateful country has erected that sublime monument on Bunker Hill, were farmers — the yeomen of New England. They left the plough in the furrow, and took the old muskets which had before accompanied their fathers to their agricultural labors, and to the field of battle, and marched to the post of duty and of danger. The men who founded the institutions of Massachusetts, who made her what she is — from whom indeed we inherit almost all that is worth preserving, were our agricultural forefathers.

There is not beneath the sun another class of men like American farmers. Where else is the land cultivated by those who own it? Time was when such a class existed in England, but it is nearly extinct, and is known only in story or in song. The agricultural classes there, now, are the few great landholders, and the laboring peasantry, who have no interest in the soil they cultivate. Here — he who ploughs the land, turns out his own furrow. He reaps in joy his own harvest. The improvements he makes are his own. He owns the land he cultivates. He knows that another will not reap,

where he has sown. He is a *freeholder*, that good old English title.

We, in this blessed land, are indeed a *chosen, a peculiar people.* Who need suffer from want here? Do any find themselves "straightened for room," in the quaint language of our forefathers? Let them go and take possession of their farms in some part of our vast public domain — that provision which a bountiful Providence has made for us, and for those who will follow us, for ages to come. Let them go, and take the great New England instruments of civilization with them, the axe, the plough, and the BIBLE, and their New England habits, and their love of New England institutions — Let them go and make homes for themselves in the wilderness, and future generations will rise up and call *them* blessed, as we do our Fathers.

We think, however, that our good old County is not yet full or worn out, but that it offers still, scope to agricultural industry and enterprise. We do not urge or encourage our young men to wander abroad in pursuit of happiness — but if they go, our loss will be the gain of some other part of our common country. We rejoice in the extension of agricultural improvements every where, as it increases the comfort and well being of the human family. — We should rejoice in the amelioration of man, all the world over — but still

"To mend the world 's a vast design."

To improve the agriculture of Essex — to increase production here, is the object of this Association. And even here, much remains to be done. As we travel through our beautiful towns we are delighted with the evidence of improvement and prosperity. We see farms in a high state of cultivation, furnished with improved stock, and buildings and fences in good order. We observe fine grass fields, where lately were unproductive swamps, or other fields fertilized by their accumulated vegetable riches. Improvements like these, are within the reach of every industrious and economical farmer — But are they universal?

And will you permit one who is not a practical farmer

to hint at some deficiencies? One of the greatest is, the neglect of the cultivation of the fruits, to which our soil and climate are propitious. Every farm should have a succession of those delicious fruits, which are easily cultivated, and which have in goodness been provided for our enjoyment and our health, and for which the natural taste is so strong. They may also be as profitably cultivated as any other articles.

Another defect is — the neglect of gardens. A farmer is often satisfied with too small a *garden patch.* Culinary vegetables ought to be raised, and used too, in much greater variety and plenty than they are; and it would be no misfortune to the health or the purse, if they should lessen the excessive use of animal food.

Let us glance at some of the causes of the modern improvements in agriculture. One of the principal is the application of scientific principles to the practice. It was formerly supposed, that there could be no connection between science and the cultivation of the earth. — This had a tendency to depress, if not to degrade the occupation. Now, science has come forth into every day life — She extends her powerful aid to practical farmers. Chemistry is analyzing the nature of soils and their elements, and of the supplies which they require, and is thus elevating the employment of the farmer, and teaching him how to cultivate his land to the best advantage. I might also refer to the agricultural, geological, and other surveys, in our Commonwealth, equally honorable to the Government by whose authority they were made, and to the learned commissioners, and which have greatly advanced the science of husbandry.

Agricultural periodicals hold a high rank among the learned and interesting journals of the day.—They have done much to remove the prejudice against *book-farming*, and are producing very beneficial effects. I have already adverted to agricultural associations — the most efficient cause of improvement, in Europe and in this country. Permit me also to mention as one among the chief causes of advance in agriculture, the improvement in temperance, and of course in the effective industry

of laborers. Formerly, wholesome food was not deemed sufficient to support, nor sound sleep to restore man's strength, without the habitual use of stimulating drinks —as if the all-wise and beneficent creator had so imperfectly made man, and was so hard a task-master, that although he had destined him to labor, he could not perform the work assigned him, without the aid of artificial stimulants. The effect was too often seen in dilapidated buildings, broken down walls, feeble and ill-treated animals, neglected and barren fields, the mortgage which consumed the farmer's substance, and at last, the sheriff's levy or sale. Alas, the effect was often felt, too, by broken hearted wives and neglected children. Blessed are our eyes, for they see, and our ears, for they hear, what marvellous things have been wrought in our day by the Angel, *Temperance*. She comes with the blessings of a new dispensation of peace and mercy from heaven.

The consequence of this improvement in agriculture is the elevation of the character of the profession, which in its turn becomes the most efficient cause of still further progress. Until the French revolutionary wars, New-England, except a narrow strip along the coast, was almost exclusively, an agricultural community — but after the excitement, and the impetus given to our commerce by that event, which led to a rapid accumulation of wealth, our young men were not satisfied with the slow thrift of old fashioned industry. They were not content to "speed the plough," and they rushed to the cities and to the ocean, to make haste to be rich. But the reverses and embarrassments of the last few years have taught them, that time and chance, which happen to all, do so emphatically to the mercantile class — that there are many blanks to a prize in that lottery, and that a high prize, suddenly won, is not seldom as quickly lost. They find that practical agriculture diligently pursued, yields a fair return, and many now wisely take their lot in life in the cultivation of the soil, instead of rushing into the hot pursuit of wealth by desperate adventures, or plunging into speculations, or chasing in

mad pursuit of fame, so seldom acquired, and generally so unsubstantial and fleeting.

The happiest effects may be anticipated from this change in public sentiment. We no longer hear a farmer spoken of as necessarily a dull and plodding person, to whom much education is useless, whose pursuits furnish no scope for enterprize or improvement, and can have no connexion with literature or science. The sneering remark of Dr. Johnson, "he talks of beeves," will not be repeated by any one who regards his reputation.

Let this improvement in public opinion go on, until it shall no longer be asked, what good does a thorough and liberal education do a farmer? It is time for farmers to learn that time and money expended on the education of their sons, are not lost, if they return to the occupation of their fathers. The notion that they must of necessity enter one of the learned professions — so called — is a great mistake, and should be exploded. How many young men, who might have been happy and useful, as agriculturists, have been obliged to abandon a crowded profession, after struggling along through some of the best years of life, or have resorted to low pettifogging, or to the most miserable and contemptible of all pursuits, office-seeking, for the pay! Agriculture invites our educated young men to fields which yield to industry and to judicious cultivation, a sure reward, and which furnish ample materials for the exercise of the mind, and even for the cultivation of taste. By a judicious arrangement of buildings and trees and shrubs — by a proper regard to order and neatness in cultivation, a farm may be made an object of great beauty. And it has been as justly as beautifully observed, that "there is not an operation of practical husbandry, however humble, that is not immortalized in Thompson's or Gray's or Cowper's song. To such men, how melodious was the reaper's song, how graceful the mower's movements, how picturesque the loaded train, groaning beneath the burden of the gathered harvests." Is it not strange that a pursuit which in all ages has furnished subjects for

the most gifted minds, should ever have been thought low or degraded? "God made the country, man made the town;" and however the city may be ornamented with beautiful and sublime works of art, there is still between them and natural scenery, the difference there is between things human and divine.

> "Hail therefore, patroness of health and ease,
> And contemplation, heart-consoling joys,
> And harmless pleasures, in the thronged abode
> Of multitudes unknown; hail rural life."

Agricultural pursuits in the open air, in the pure breath of heaven, and amidst the works which God has made, have the most purifying and elevating influence on the heart and mind. Who that has a heart in his bosom, can look abroad on our hills, crowned with trees, our pastures covered with flocks, on our valleys and plains, laden with "food for man and beast," and not think and feel, how good God is? Who can behold the meadows ornamented with flowers, and reflect that the wide spread prairies, the solitary wilderness, nay, that the whole earth is strewn with an infinite variety of those most lovely objects, arrayed with more beauty than was Solomon in all his glory, and his heart not be softened into a sense of that boundless love, which has made such provision for our enjoyment, and for the gratification of a pure and refined taste? Who can see the sun rising in his glory, as all good farmers are wont to do, or can behold him sinking in his gorgeous pavilion — who can look upon the magnificent heavens, which can only be seen in the country, and not feel awed into reverence before him who made them all, and exclaim as did the shepherd of Israel, —"When I consider thy heavens, the work of thy hand, the moon and stars which thou hast ordained, what is man, that thou art mindful of him, or the son of man that thou visitest him!" Who can listen to the "charm of earliest birds" as they dart from their nest and mount to the topmost sprays at dawn, and not join their notes of grateful praise to him who notices the sparrow's fall, and whose

providential care extends to all his works? And where shall we learn our dependence on divine providence so effectually, as in an occupation where his visible presence seems manifest, in his imparting the influences of the sun and of showers in such succession as to crown with success the labors of our hands — who withholds the needful blessing only so long as is necessary to make us feel, that "it is God who giveth the increase."

Farmers of Essex — You cannot render a greater service to your country, than by disabusing the public mind of any prejudices which still remain as to the true character and influence of your pursuits.

> "Such themes as these the rural Maro sung
> To wide, imperial Rome, in the full height
> Of eloquence and taste, by Greece refined.
> In ancient times the sacred plough employed
> The Kings and awful fathers of mankind;
> And some, with whom compared, your insect tribes
> Are but the beings of a summer's day,
> Have held the scale of empire, ruled the storm
> Of mighty war; then with unwearied hand,
> Disdaining little delicacies, seized
> The plough, and greatly independent, lived."

Man was made to labor. His physical constitution shows it as plainly as if this law of his existence was imprinted on his forehead. This beneficent decree has united his duty and his happiness. And yet — how strange! — labor has, in almost all ages and nations, been considered as dishonorable, and has been left to serfs and slaves! It is quite time to correct the prejudices as to the true dignity of labor, which have come down us from remote and dark ages. We trust the time is not far distant, when it will no longer be thought in the old world, that the army, the navy and the church — strange union — furnish the only suitable employment for the sons of the rich and great. More correct opinions are spreading. All civilized nations are beginning to learn that war is the worst of evils. The peace, which, blessed be God, has prevailed for

a longer period than has been known for centuries, has given men leisure to think of the miseries and the wickedness of war, and to reflect on the countless blessings of peace. It has multiplied the honorable pursuits of men. They see that agriculture and all the arts which promote true civilization and ameliorate the condition of man, have advanced more within the last twenty-five years, than in the preceding century, and that the condition of every nation has been improved. We are no optimists — We know the infirmity of man, and have no faith in his perfectibility, but the signs of the times warrant us in hoping that the time will soon come — nay that it has come, when christian nations will see to it, that wars shall be undertaken *only in the last resort, and from dire necessity* — when the ambition of man shall not be confined to military glory, falsely so called, won at the expense of the lives of thousands of our fellow beings, and the misery of more — when great and wise men will aspire to have their names enrolled among the benefactors of mankind; those who have led the way in benevolent enterprises, or who by useful inventions or discoveries have contributed to the facility of labor and the comforts of life — when they shall be ambitious of the fame of Watt and Arkwright, or of our own Franklin, rather than the heartless and ruthless conquerors, ravagers of the earth, who have hitherto attracted the world's gaze and admiration. We are no optimists, but we do hope — nay we believe — that one scientific discovery, the application of steam to transportation on the land and on the water, is the master-power, which is destined to revolutionize the civilized world. All experience shows, that mutual intercourse between nations promotes, and indeed is indispensable to, the progress of civilization and true humanity. Let rail-roads run from nation to nation, and the people of different countries associate and hold intimate relations together, and it must remove national prejudices and liberalize them all. Let the passage between the capitals of England and France be reduced to a few hours, and the generations

to come will not think as their fathers did, that they are born hereditary enemies. Let us at least hope that the time will come, when competition between nations will be an honorable rivalry for distinction in the arts of peace, not for superior skill and power in the work of destruction. The late visit of the Queen of England to France, is significant of this blessed advance in true civilization, and lights up visions of hope for the future.

But what has all this to do with agriculture? Gentlemen, it is closely connected with it. War is the greatest enemy to agricultural improvement. I know that for a time it stimulates the demand for its productions; but it takes from agriculture the sinews of labor. It spreads desolation over the fields which are the seat of war. It excites a community into a state of restlessness, and inflames passions inconsistent with agricultural industry, and worst of all, it demoralizes a community. Well did Mr. Everett say, in his late eloquent speech, "O, my Lord, I firmly believe, that if one thousandth part of the skill, the energy and the treasures, that have been expended by rival nations, in the fierce and deadly struggles of what is called "the field," had been employed in a generous emulation to see which would excel the rest in the arts of peace — had this been done, I believe that you farmers would have driven us diplomatists from *the field;* at any rate, you would have left us but little to do, in carrying on angry international discussions." The prophetic word has been spoken that agriculture shall flourish in the reign of mild peace — that the time shall come — O, hasten on the day! — when the sword shall be beaten into ploughshares, and men shall learn war no more.

The importance of the agricultural interest and the necessity of improvement in cultivation, were early appreciated in this State. The Massachusetts Agricultural Society was formed more than half a century ago, by some of our most eminent and worthy citizens. A new impulse was given to this great branch of industry, by their exertions, and especially by their valuable publications. And if their transactions seem now to be less

important than formerly, it is because the county associations have rendered the labor of the parent Society less necessary.

Gentlemen — Our association owes much of its early success, if not its existence, to one, not less distinguished for the purity and elevation of his private character, his public spirit and patriotic services, than the brightest names on a list which contains names as distinguished as any which adorn the annals of Massachusetts* — Samuel Adams, Christopher Gore, Benjamin Lincoln, John (judge) Lowell, Thomas Russel, and not to be forgotten in this place Samuel Phillips. The memory of TIMOTHY PICKERING should be held in honored remembrance by this Society, by all farmers, and indeed by the whole country. He who had served his country bravely and faithfully during the revolutionary contest, and with distinguished ability in the cabinet and the councils of the nation, retired to his farm in the midst of life, before his eye was dim or his natural strength abated, and devoted his time and the vigor of his mind, to agriculture He was not ashamed to be called, and to be, a farmer. He was the first, and for ten years, President of this Society. As he never neglected any duty, he attended all the meetings of the Society and of its Trustees ; and it will excite no jealousy among the associates of his honorable labors, to say, that it owed its prosperity, mainly, to his example and his efforts. He repeatedly addressed them on their anniversaries, and he furnished many valuable communications, which enrich their publications — for all the improvements which adorned or benefitted his own farm, were recommended to him, not only by the consideration of his own interest, but by the higher motive of duty to his country.

The pursuits of agriculture furnished abundant employment to the mind of Timothy Pickering — Let no one then shun them as dull or degraded. He continued his interest in agriculture and in this association, while

* Named in the act incorporating the Massachusetts Agricultural Society.

life lasted, and it will be an interesting fact to you, gentlemen, that his pen, which was never employed except for worthy ends, was last used in behalf of this Society.* He whose course through a long life exhibits so bright an example of simplicity of manners, firmness of principle, unbending integrity, faithful and energetic discharge of duty, and of true public and patriotic spirit, adorns and dignifies his country.

How can I better close this address, gentlemen, than by this tribute of grateful and affectionate respect, so justly due, and which I know you will cordially unite with me in offering, to the memory of that distinguished agriculturist, that most eminent and excellent man, TIMOTHY PICKERING.

* In drafting a petition to the Legislature.

REPORTS, &c.

ON PLOWING.

WITH DOUBLE TEAMS.

The Committee on plowing with double teams, consisting of J. W. Proctor of Danvers, A. Putnam of Hamilton, W. Johnson, jr. of Andover, J. Howe of Methuen, and I. Carruth of Andover, REPORT:

That twenty four teams were entered, all of which were promptly ready at the time and place appointed for the work. As but twenty three lands had been prepared, one of the teams was necessarily excluded. The lands were assigned by drawing for their numbers. The ground was situated on the southerly part of the farm of H. Clark, Esq. It was a cultivated field, and had been mown for a half dozen years. The soil was hard and stony, and in the sub-soil fast rocks were met in almost every furrow. Heretofore it had not been plowed more than six inches deep. It was divided into lots, about 26 rods long, and 1 rod wide —

The work was done as follows, viz:

No. 1. William Peters, of Andover. Plow made by Prouty & Co.; size A. Wm. Peters, plowman, J. Wilson, driver. 24 furrows, in 46 minutes. Broke a point, and had to put on another, which hindered about five minutes. This lot was only 18 rods long.

No. 2. Ralph H. Chandler, of Andover. Plow made by Ruggles & Co.; Eagle No. 3. R. H. Chandler, plowman, E. Needham, driver. 14 furrows in 45 minutes. This work was very well done.

No. 3. Andrew F. Curtis, of Middleton. Plough made by Prouty & Co.; Eagle C. Darius Emerson, plowman, A. F. Curtis, driver. 14 furrows, in 37 minutes. About 6 inches deep, laid smooth, a rolling cutter on the plow, which operated favorably.

No. 4. Joshua Chandler, of Andover. Plough made by Prouty & Co.; Eagle C. Jos. Chandler, plowman, Jon. F. Chandler, driver. 15 furrows, in 46 minutes. This plough gave way during the work, but the land was finished, and very well turned.

No. 5. Moody B. Abbott, of Andover. Plough made by Ruggles & Co.; Sward C. G. M. White, plowman, T. F. Downing, driver. 15 furrows, in 50 minutes, fairly laid, and of good depth.

No 6. John F. Carlton, of Andover. Plough made by Prouty & Co.; A. Simon Foster, plowman, J. F. Carlton driver. 14 furrows, in 36 minutes, fairly laid.

No. 7. Jonas Simonds, of Andover. Plow made by Prouty & Co; Sod A. Henry Simonds, plowman, F. Simonds, driver. 14 furrows, in 38 minutes, well laid, but less than 7 inches deep.

No. 8. Amos P. Swinnerton, of Danvers. Plow made by Ruggles & Co.; Sward B. A. P. Swinnerton, plowman, J. L. Hutchinson, driver. 13 furrows, in 51 minutes, of good depth, rather unevenly laid.

No. 9. Hiram Kimball, of Andover. Plow made by Ruggles & Co.; Sward B. John Peabody, plowman, H. Kimball, driver. 13 furrows, in 46 minutes.

No. 10. Dean Robinson, of West Newbury. Plow made by Ruggles & Co.; Sward B. Samuel Moody, plowman, Wm. Preble, driver. 13 furrows in 42 minutes. Cattle were superior, well plowed, and of good depth.

No. 11. Henry Cummings, of Andover. Plow made by Ruggles & Co.; Sward C. Herman Phelps, plowman, H. Cummings, driver. 13 furrows, in 43 minutes, very well laid, full depth, soil rather more favorable than some other lands.

No. 12. Ebenezer Jenkins, of Andover. Plow made by Ruggles & Co.; Sward D. E. Jenkins, plowman,

R. Z. Caldwell, driver. 12 furrows, in 48 minutes.— This plow had a double cutter, which is thought to protect the point in stony land. Work fairly done.

No. 13. Samuel F. Barker, of Andover. Plow made by Prouty & Co.; A. Peter Freeman, plowman, A. J. Barker, aged 12, driver. 12 furrows, in 55 minutes, not so deep as required, tolerably laid.

No. 14. Enos Reynolds, of Boxford. Plow made by Prouty & Co.; Sod A. Eben Howe, plowman, H. A. Bodwell, driver. 14 furrows, in 49 minutes, of good depth, not so smoothly laid as some.

No. 15. Joseph Chandler, of Andover. Plow made by Ruggles & Co.; Sward C. Joseph Chandler, jr. plowman, Jos. Chandler, driver. 14 furrows, in 42 minutes, well laid, of good depth.

No. 16. Perley Tapley, of Danvers. Plow made by Ruggles & Co.; Improved Eagle. G. W. Winslow, plowman, S. S. Thomas, driver. 14 furrows, in 43 minutes. This plow had a steel plate on the share, designed to be used in meadows, it turned the furrows well, but not quite the depth required.

No. 17. Augustus A. Hayward, of Boxford. Plow made by Ruggles & Co.; Sward B. Wm. R. Cole, plowman, David West, driver. 14 furrows, in 46 minutes, well laid, turned even.

No. 18. James Stevens, 2d, of Andover. Plow made by Prouty & Co.; A. Benj. Kimball, plowman, George Perry, driver. 13 furrows, in 35 minutes. This work was quickly and roughly done. The same team that was used in No. 9, the last year, which then succeeded quite well.

No. 19. Samuel Jenkins, jr. of Andover. Plow made by Prouty & Co.; Sod A. John I. Foster, plowman, S. Jenkins, jr. driver. 12 furrows, in 35 minutes, unevenly laid, furrow slice much broken, the land was not quite as wide as the others.

No. 20. Joseph Simonds, of Middleton. Plow made by Prouty & Co.; C. Geo. R. Wilkins, plowman, Geo. W. White, driver. 15 furrows, in 33 minutes. This plow had a rolling cutter — said by the plowman to run

easier, and to be preferable among stones. The furrows were scant seven inches, and roughly laid.

No. 21. William Foster of Andover. Plow made by Prouty & Co.; Sward B. Charles F. Johnson, plowman, William Foster, driver. 21 furrows, in 49 minutes. This and the two following lands were shorter than the others, and about the same length as the first — say 16 to 18 rods.

No. 22. Moses Pettingill, of Topsfield. Plow made by Ruggles & Co.; Eagle, No. 3. Moses Pettingill, jr., (aged 18) plowman, M. Pettingill, driver. 22 furrows in 52 minutes. This plow had a rolling cutter. The furrows were full seven inches deep, and were very smoothly and neatly laid. The work was perfectly done.

No. 23. Josiah F. Abbott, of Andover. Plow made by Ruggles & Co.; Sod C. Ballard Holt, plowman, J. M. Abbott, driver. 21 furrows in 55 minutes These furrows were $7\frac{1}{2}$ inches deep, and lapped a little — the land was more favorable than most of the other lots.

Such were the minutes of the work, hastily taken by the committee on the field. After the work was completed, the committee took a general view of the whole; and a particular examination of each plow used. But as the peculiar characteristics of the plows are to be taken into view by another committee on a more strict and scientific comparison, the committee thought their duty would be best discharged by applying the premiums, according to the general appearance of the work when completed. They would have been pleased to have noticed the discipline and training of the cattle used more particularly, if they could have found time. So well was the work performed that the committee would have cheerfully recommended premiums to one half of the competitors, if so many had been at their power of disposal. But as but four premiums were offered, no more than this could with propriety be given — They determined to assign the premiums by balloting, for 1st.,

2d., 3d. and 4th., in their order; and it so happened, that each were assigned by a majority of votes, without a second ballot. In this manner the premiums were awarded, as follows:

To Moses Pettingill,	No. 22,	1st premium,	$12 00
" Henry Cummings,	No. 11,	2d "	10 00
" Joseph Chandler,	No. 15,	3d "	8 00
" Dean Robinson,	No. 10,	4th "	4 00

In settling questions of this character, with so much haste as is necessarily required, on the days of our Cattle Shows, it cannot be expected that all will be satisfied, or that exact justice will be done to all. Most of your committee have had many years experience in the use of the plow, and they were desirious of determining impartially, without being swerved by any collateral considerations.

We congratulate the Society on the increasing interest manifested in this part of their exhibitions. We cannot doubt that much practical benefit has accrued from them. Although the minuteness of particulars detailed in our report may seem tedious and trivial to some, still those who would thoroughly understand the subject will be convinced of their propriety. If time could have been found, we should have been pleased to have tested the power of each plow, by the application of the *dynamometer*, in the soil in which it was used:— as also the well-balanced character of the plow. When the plow is so well adjusted, as to cut the furrow slice of proper *depth* and *width*, and lay it in a proper *manner*, without any extra care or exertion of the plowman, then is the perfection of the art of plowing nearly attained.

What more animating sight to one fond of useful improvements, than forty teams, as to day witnessed, moving side by side without collision, in the struggle for victory?—Although this victory may be achieved by the use of *glittering plowshares*, instead of *swords and bayonets*, still it will be remembered to be *commended*, when most

of those obtained by their use, shall only be remembered for the sufferings incident thereto.

Respectfully submitted, for the Committee, by

J. W. PROCTOR.

Andover, Sept. 27, 1843.

WITH SINGLE TEAMS.

The Committee on plowing with single teams, present the following REPORT:

The number of teams which competed for the premiums, was 12. The quantity of land plowed by each team, $\frac{1}{3}$ of an acre.

Perley Tapley, of Danvers, plowed his land of 24 furrows, in 45 minutes, $6\frac{1}{2}$ inches in depth, and is entitled to the first premium, $10,00.

Alanson Flint's team, of Andover, plowed their land in 38 minutes, 24 furrows, $6\frac{1}{2}$ inches in depth, and is entitled to the second premium. $8,00.

Moody B. Abbott's team, of Andover, plowed their land in 45 minutes, 25 furrows, $6\frac{1}{4}$ inches in depth, and is entitled to the third premium, 6,00.

Charles Foster's team, of Andover, plowed their land in 51 minutes, 6 inches, and 26 furrows, and is entitled to the fourth premium, $4,00.

Respectfully submitted, by

A. GRAY,
LEWIS ALLEN,
ERASTUS WARE,
JOS. F. INGALLS.

Andover, Sept. 27, 1843

WITH HORSE TEAMS.

The Committee on plowing with Horse Teams, respectfully REPORT:

That they award to John Marland, of Andover, the first premium of eight dollars.

To Samuel M. Barker, of Andover, second premium of six dollars.

To John A. Stevens, of Methuen, a gratuity of five dollars.

For the Committee,
JEREMIAH COLMAN.

ON THE COMPARATIVE MERITS OF PLOWS.

The Committee on this subject, consisting of Moses Newell, of W. Newbury, J. W. Proctor, of Danvers, William Sutton, of Salem, A. T. Newhall, of Lynnfield, and Andrew Dodge, of Wenham, have attended to that duty, as far as other engagements would admit, and submit the following Report:

From the examinations of this kind that have heretofore been made, we are aware of the interest felt by the different manufacturers in the doings of this committee. We have therefore felt it to be our duty to proceed with caution, and not to adopt conclusive opinions upon imperfect evidence.—We shall endeavour to state such facts as have come within our observation, with such remarks explanatory of the same as may seem appropriate; leaving it to those curious on the subject, to compare and form their own conclusions. And in so doing we hope they will have the fairness to take all the facts into view, and not a garbled selection, as has sometimes been done, thereby entirely misrepresenting the impressions intended to be made by the Committee.

In testing the quality of a plow, the *power* by which it is moved, the *ease* with which it is handled, and the *manner* in which it completes the work, are prominent points for consideration.

The dynamometer is the best instrument at present at command to determine the power. This can be done with a good degree of accuracy where the soil is free of stones, and the team is well disciplined, and driven in a uniform manner. But even then it is not easy to be certain within a quarter of a hundred pounds, and of course, much must depend upon the judgment of the observer. Without doubt by the application of *pullies* a nearer approximation to accuracy could be attained; but

these were not at the command of the committee. These facts are mentioned that too much reliance may not be placed on *power* alone ;—this being *one* only of the considerations to be taken into view.

It should also be remembered, that the plows offered for examination, were entered without reference to the particular kind of soil in which they were to be tried. They were of different sizes and different forms — some adapted to the soil, and others not ; — so that a plow which did not work to advantage in this soil, might under other circumstances have shown a more favorable result.

Seventeen plows were presented to the attention of the Committee — seven made by Ruggles & Co., seven made by Prouty & Co., two made by Howard, and one made by Winslow. The ground on which they were tried was a grass sward, with a hard stony bottom, that had heretofore been plowed not more than six inches deep. Two pair of oxen were used, the same on all the plows, and moderately driven. The plows were regulated and held principally by their owners or agents, — without any special directions from the committee, except as to the depth of the furrow, which was required to be about seven inches.— Four furrows of twelve rods in length were turned by each plow, and the average result noted by the Committee as appears in the following tabular statement.

No.	Maker.	Description.	Power in pounds	Depth in inches.	Width in inches.	Quantity in square in	Proportion to 100 lbs. of power.
1	G. W. Winslow.	Medium size.	552	6.58	12.33	81.13	14.70
2	Ruggles & Co.	Eagle, No. 1.	475	6.25	11.33	70.81	14.90
3	do.	Eagle, No. 2.	490	6.62	12.00	79.44	16.21
4	Prouty & Co.	Sod C.	575	6.62	13.33	88.24	15.35
5	do.	Eagle C. 2.	571	6.30	12.00	75.60	13.24
6	Ruggles & Co.	Sward C.	580	6.83	12.66	86.46	14.90
7	Howard.	Large size.	594	7	13.33	93.31	15.70
8	do.	Medium size.	565	5.96	12.66	75.45	13.35
9	Prouty & Co.	No. 5½ self sharp'ng.	566	6.42	12 33	75.45	13.33
10	Ruggles & Co.	Sward B.	577	7.12	13.33	94.90	16 36
11	Prouty & Co.	Eagle C	575	6.33	12.33	78.04	13.57
12	Ruggles & Co.	Sward D.	644	7.16	14.50	103.82	16.10
13	Prouty & Co.	No. 5½.	520	6.62	12.33	81.63	15.69
14	Ruggles & Co.	Eagle, No. 3.	646	7.46	14.66	109.36	16.92
15	Prouty & Co.	Sod A.	615	7.54	15.00	113.10	17.90
16	Ruggles & Co.	Eagle, No. 3.	696	7.41	16.00	118 56	16.89
17	Prouty & Co.	Lock Coulter.	630	6.66	14.00	93.24	14.80

In the performance of this work the plows of Ruggles & Co. were held by Mr. P. Tapley, of Danvers. The plows of Prouty & Co. were held by Mr. Wheeler, of Concord — excepting Nos. 9 and 11, which were entered by their respective owners, and held by Mr. James Wilkins, of Middleton. As so much depends upon the skill of the person holding the plow, the committee were at a loss to know what proportion of the merits of the work was to be attributed to the plow and what to the plowman; — and as there appeared in some instances an effort to enlarge the work, beyond the natural powers of the plow, the committee requested the competitors, each of them, to produce two plows, one of large and one of medium size, to be tried on a subsequent day. The examination of these plows took place on the 24th of October, on land favorable for the experiment, a grass sward that had been mown two years only, free of stones, with a gravelly subsoil. By direction of the committee, the plows were adjusted by their owners — the smaller size to turn a furrow 12 inches wide and 7 inches deep — the larger size to turn a furrow 14 inches wide and 7 inches deep. The furrows were turned of the width required, varying in depth from $6\frac{1}{2}$ to $7\frac{1}{2}$ inches. The plows were held by members of the committee. The power applied by three yoke of oxen, as indicated by the dynamometer was nearly as follows, viz:

MEDIUM SIZE PLOWS.

1. Winslow of Danvers,	462	pounds.
2. Prouty & Co. of Boston,	425	"
3. Ruggles & Co. of Worcester,	412	"
4. Howard of Hingham,	412	"

LARGE SIZE PLOWS.

1. Winslow,	512	"
2. Prouty & Co., Sod A.	487	"
3. Ruggles & Co., Eagle No. 3	425	"
4. Howard,	450	"

In the last experiment Prouty & Co's. sod A. was the same plow marked No. 15 on the first day, and which then indicated a result more favorable than any other

plow used; — and Ruggles & Co. Eagle No. 3, was the same description of plow marked No. 14, on the first day, which then indicated a highly favorable result; — and which also had obtained the first premium at Andover, as No. 22 among the plows used by double teams. Both of these plows, as we were informed, came forward in their every day garb, without any special brushing for the occasion. The large size plows offered by Messrs. Howard and Winslow were new, perfectly well constructed and finished. Upon the whole view of their operations, the committee considered the results produced by the larger sized plows, indicated them as best adapted to the breaking up land of this description; and that the question as to superiority lay between Nos. 14 and 15 of the first day. On adverting to the manner in which these plows were held, the ease with which they worked, and the manner in which they left the furrow slice, the committee were inclined to give the preference to Eagle No. 3 of Ruggles & Co. As near as we can ascertain, this plow combines all the good qualities manifested in either of the others, with some peculiar to itself. It is called the improved Eagle, and has manifestly been constructed with much care, by shrewd observers, ambitious to excel. We would not say that it is the perfection of the instrument, because we are inclined to think that yankee ingenuity will still bring forward many other improvements; but we do think that this plow has a combination of points, that deservedly place it in the very first class of those that have come within our observation. On comparing the plows exhibited by these manufacturers the present year with those constructed by them half a dozen years since, they would hardly be recognized or known, by their family resemblance. It is apparent that each have availed themselves of the improvements of the others, and have endeavored to combine the best points in their plows of last construction. So far as the public is concerned this is for the benefit of the public; and we hope they will still go on *inventing* and *combining* until there shall be no further room for advance. The fact that every sueceeding year introdu-

ces some new modification, that finds more or less admirers, affords abundant stimulus for further application of skill. And the further fact that different qualities of soil, and different kinds of teams used, will always demand variations in their structure adapted to their peculiarities, gives abundant scope for additional invention.

The committee, desirous of informing themselves as well as to instruct others on the subject to which their attention has been directed, requested of each of the manufacturers a brief statement of the alterations and improvements introduced by them in the structure of the plow. Believing that the facts thus learned from practical mechanics, who have an interest in adopting those which are most valuable, will be of more utility than any theoretical speculations of our own — we have condensed from these communications the following:

As early as 1833 Ruggles & Co. came to the conclusion that the cast-iron plows then in use were *quite too short;* — they lengthened their patterns, which enabled them to place the mould board or plate at a more acute angle with the landside. This form was ascertained to possess many advantages; and they have been gradually lengthening their patterns to the present time. By so doing they have diminished the power of draft required, and obtained a facility of laying the furrows with much greater eveness and precision. In their description they have annexed a representation of the Eagle Plow, (the plate of which they have kindly placed in the hands of the committee for the use of the Society) in reference to which they observe, " in adding length to Eagle No. 2, we gave a greater length in proportion forward of the standard bolt A. which allowed us to form the share or point on a more acute angle on the cut B. and by the additional length forward, we were enabled to form the mouldboard with so gradual a rise and regular curve that it takes up the furrow slice with great ease, bearing it lightly and equally over the whole surface, turning it over with the least possible bending or twisting, placing it smooth and unbroken entirely subverted by the side of the preceding slice, covering most effectually all

vegetable growth." "To balance the plow and insure a steadiness of movement in the ground, and to resist the pressure of the furrow slice upon the mouldboard, we have added length to the heel of the landside C." "In the construction of Eagle No. 3, designed particularly for sward plowing, we have given it still greater length forward of the standard, which enables us to form the share with an angle still more acute, which form has an advantage in going deep among the small stones, that are usually found in the subsoil, below that which has heretofore been moved by more shallow plowing, and that it may go deep without liability to clog, we have raised the beam two inches higher on the standard. We have also increased the length of the mouldboard, to insure the more effectual turning of the furrow; — always taking care that the forward end of the beam shall be, as nearly as possible, in a direct line with the heel of the plow and the point to which the chain is fastened to the yoke of the oxen. Several of these alterations have been made in this plow in the course of the present season, and the use of it encourages the belief that they will be found decided improvements."

Our attention was particularly called to the quality of the castings on the plows of Ruggles & Co. — their *finish* and *durability*. Their appearance certainly is more perfect than any thing of the kind we have elsewhere seen. Their process of *chilling* the *points*, the entire edge of the share, and the *flange* or *base of the landside*, gives a permanence and durability to the work, that renders it of a decidedly superior character. This chilling process has also been applied, to some extent by Prouty & Co. to their *points* and *shares*. An examination of several plows that have been used, where this process had been partially applied, has completely demonstrated its great utility. And we think there can be no hazard in saying, that the value of the parts thus made is more than doubled by this process. If due attention is given to the quality of the metal used, and a proper application made of the chilling process, we doubt not that irons may be made that will last as long as other parts of the

plow. If this could be done, the necessity of frequent changing of points would be avoided, which has been a great objection to the use of cast iron plows. Our attention was also called by Ruggles & Co. to another improvement introduced by them in putting the share to the mould board, by leaving a *cavity* on the underside of the share, to insure a perfect fit of the edges, and equality of bearing on all parts. As also to an improvement in attaching the landside, so that the landside and point constitute the entire base on the landside of the plow. We also learn from Ruggles & Co. that they have by means of machinery introduced such uniformity in the structure of their plows, that all those of the same class, being exactly of the same form and dimensions, may be repaired, when any particular part gives way, with a facility that could not otherwise be attained.

The plows of Prouty & Co. have been extensively and favorably known for a long time. If our recollection is right, they received the premium of one hundred dollars awarded by the State Society, a few years since, at Worcester, after a careful and thorough examination by an intelligent committee. With such a recommendation they could not but be favorably received. Our attention has been particularly called by these gentlemen to the "centre draft" principle in the structure of their plows, which they claim as their own invention. This improvement was introduced by them in 1835. It is produced "by inclining the landside and standard to the right or towards the body of the plow, thereby making an acute angle with the plane of the bottom. This inclination is extended so far as to be directly, or nearly so, at or over the centre of the resistance opposed to the instrument, thereby producing a complete counterbalance, and allowing the *centre of the beam*, and *the line of the draft* to be in the *line* of *motion*, and parallel with the landside." Or in other words it is the inclination of the standard and landside so as to form an acute angle with the plane of the share; and the placing the beam on a line parallel to the landside, within the body of the plow, and its centre nearly in the perpendicular of the centre of resist-

ance, instead of being perpendicular with the edge of the landside, as formerly, and so adjusting the end of the beam to which the power of draft is applied, that the plow will move truly and steadily in the work, without any extra pressure by the plowman upon the handles.

This modification, at first, was not favorably received; but on trial, it proved so satisfactory and of such marked utility, that it seems since to have been had in view by other manufacturers, and to have been, in a good measure incorporated in their work. It is no part of the present duty of this committee to decide upon conflicting claims of this character. But from all that has come to our knowledge, we see no sufficient reason to doubt the propriety of their claim. We trust that the merits of their work on trial, will command from a discriminating public its adequate reward; even though their particular inventions may have failed to be secured for their exclusive benefit, by a defective Patent.

The plow sod A. (No. 15 of the first day's experiment) is stated by the makers "to be designed for the more perfect turning of greensward or sod ground and covering all vegetable and other matter lying on the surface, leaving the furrow slice in a fine lively *friable* state, by *crushing its hard lumps* and disarranging its mass of particles, inducing fresh fermentation and further decomposition, thereby *elaborating its food for plants.*" "The point or share presents a long, gradual, easy rise of the furrow to the mould board, which is of a gentle spiral curve in its transverse and diagonal sections, of such length as to insure a free and easy delivery of the furrow at its after end without fracture, and not requiring the foot of the ploughman to prevent its falling back from whence it came, and is of that peculiar structure, which is so completely adapted to the form which the underside of the furrow *naturally* assumes, that not a square inch of its surface will be found, that is not polished by the passing furrow." As the results produced by this plow stand in bold relief in comparison with the others, we have felt that justice required that it should have the description given it by those who made it. At

the same time some of the committee were not entirely satisfied with its operations. Perhaps this may have arisen from the short chain used, or from the peculiarity in holding, or from a want of a full knowledge of the peculiarities of the plow at the time, and a consequent misapplication of the power of the plowman.

This view of the comparative qualities of the plows of these rival manufacturers has led to a re-examination of the observations made by ourselves the last and the present year; and we find the average result of the several plows offered by them to have been as follows — determining their quality by the number of square inches of earth turned by the application of 100 pounds of power, viz:

	1842.	1843.
Ruggles & Co.	16,91	16,04
Prouty & Co.	16,35	15,40

This shows their ends of the yoke to have been so nearly balanced, that it is very possible, the existing difference may have been occasioned by superior skill in holding, or some other collateral cause. In comparing the work done in 1842 with that done in 1843, it should be remembered that the land in 1842 was much the most favorable for being turned; — so that notwithstanding a less quantity is turned this than last year, by the application of the same power, still the work of the plows, the present year, all things considered, was decidely preferable to the last.

Mr. Howard, who represents himself to have been personally employed in the construction of plows for 30 years, states that "the amount of work which the plow performs is usually ascertained by measurement of width and depth of furrow, which the plow has cut and turned over. A field cannot be said to be well plowed unless the whole ground is cut at an equal depth; and this can be done only with the plow which runs level on the bottom of the furrow. The best test I think which can be applied in the comparison of plows in this particular, is to take a given length of furrow and weigh the same in addition to measurement, thus clearly showing the abso-

lute quantity of soil raised and turned. This peculiarity of a level run, I think belongs to my plows in a greater degree than to others."

"In 1816, I received a premium at Brighton for an improvement in the structure of my plows, which consisted in placing the point of the share on a level with the bottom of the plow; thus obtaining a smooth cut at the bottom of the furrow, and consequently with less friction than those made with the points depressed." "In 1820 I made my first pattern of a cast iron mould board and landside, retaining the wrought share and cutter." "Soon after, however, I made a sett of patterns for castings embracing the share also. These I believe were the first plow patterns made in Massachusetts. Since that period I have made such improvements as experience suggested, and have I think arrived somewhat near the objects desired in the use of the plow, viz: thorough work, easy draught, easy guidance, and durability of structure." "In order to obtain these requisites I place the share so that it shall run level, which gives an equal depth of cut, both on the land side and at the right angle point of the share. I thus give such a turn or curve to the mould board as shall raise and turn the furrow without pressing it forward."

"The "centre draft" of a plow is proved by the power applied for its guidance; and the plow that has a perfect "centre draft" would require no guidance at the handles, in a soil of equal resistance, provided the draft was applied in a strait line with the furrow."

Our personal acquaintance with Howard's plows has been less than with those of either of the others — but judging from the specimens exhibited, we think their workmanship and their character for durability quite equal to either of the others. We know that they are preferred by some practical farmers, particularly in old ground. Of this we are certain, both from Mr. Howard's manner of *working* and *writing* that he is a master of his business.

Mr. Winslow's plows were made in the form of those introduced a few years since by Mr. Pike of Danvers.

These plows at that time combined many good points, and were decidedly in advance of the age. Mr. Winslow has proved himself to be an ingenious mechanic, with a clear conception of what is wanted in a plow. Let him persevere in his labour and construct one quarter part as many plows as have been made by his brother competitors, and we doubt not he will hold his own in the race of improvement.

Public attention, in this country, was first awakened to the improvements in the construction of plows, by the suggestions of Mr. Jefferson, who in 1798 published his new theory of the construction of the mould board formed upon scientific principles. Following up these suggestions Mr. Smith, of Pennsylvania, in 1803 substituted the cast iron for the wooden mould board. Since which cast iron has been substituted for all parts of the plow, except the beam and the handles. In 1823 cast iron shares came into general use in this part of the country. Since which Messrs. Wood, Tyce, Hitchcock, Hart, Howard, Prouty, Nourse, Ruggles, and others, have so varied and multiplied their structures, that they are found in every part of our land. We have good reason to believe that more than two thousand of a single pattern of one of these plows have been sold the present season by one of the competitors on this occasion.

In addition to the common plows for turning the surface, each of these manufacturers has brought forward the present year specimens of the sub-soil plough, by which our lands are stirred and pulverized six or eight inches deeper than the common furrow. Such an operation must necessarily produce an essential change in our modes of culture. Those who have tried it speak in high terms of its good effects. In England, it has been for a considerable time in use and with marked approbation. In the opinion of your committee the time has arrived, when the attention of our Agricultural Societies should be directed to *subsoil plowing*, as well as to *surface plowing;* and their exertions should be continued in these fundamental branches of husbandry, while there remains any room for improvement.

We have endeavored to give as candid and impartial a statement of the operations and character of the different plows presented to our notice, as our limited observations of their movements would admit. We are aware that several of these plows were brought into the trial under unfavourable circumstances, the land being hard of operation, and requiring plows of larger size.

In awarding the premiums, we intend them as an expression of our opinion of the comparative merits of the particular plows that have been examined by us, and not of the general character of the plows of the different manufacturers. We do not feel that our experience of their use has been sufficient to justify an expression of such general opinion.

We award the *first premium*, twelve dollars, to Ruggles & Co. for their improved Eagle plow, No. 3.

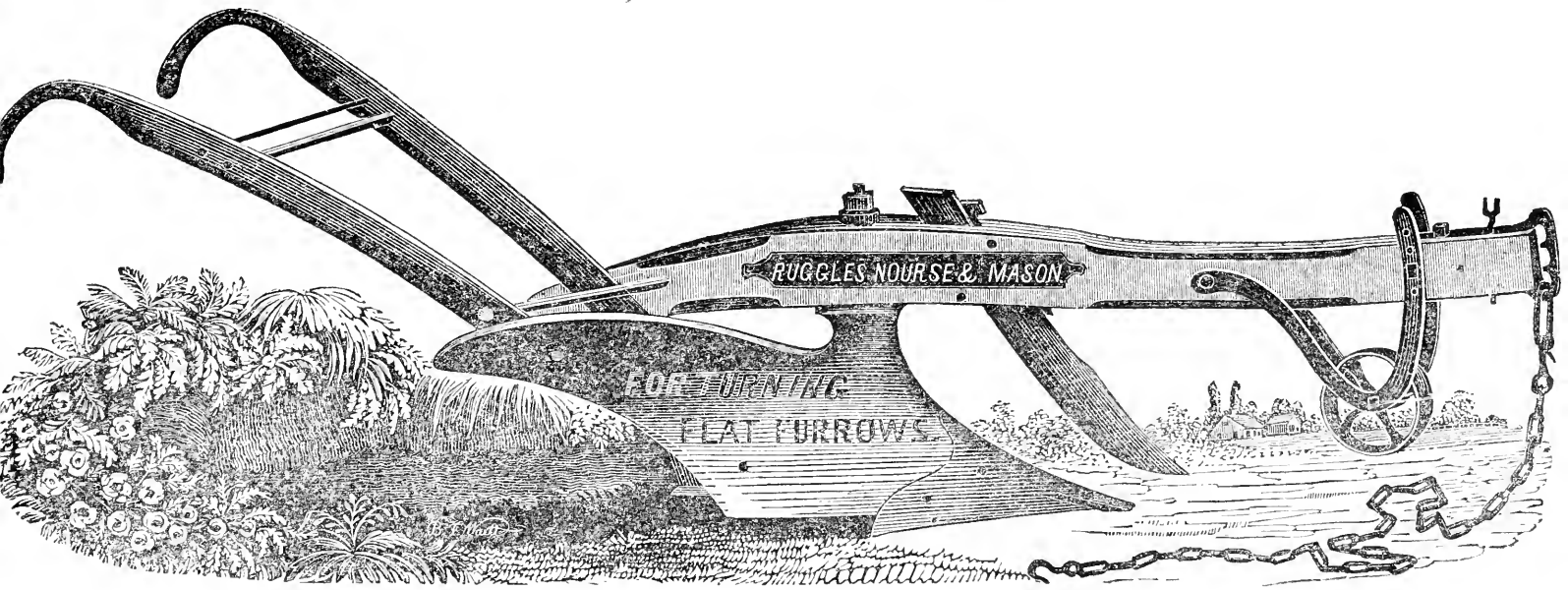
We do not award the *second premium*, because the committee were divided in opinion.

Respectfully submitted by

J. W. PROCTOR,
MOSES NEWELL,
ANDREW DODGE,
W. SUTTON,
ASA T. NEWHALL. } *Committee.*

December 1st, 1843.

RUGGLES, NOURSE & MASON'S



EAGLE PLOW.

REPORT ON WORKING OXEN AND STEERS.

Committee,—Daniel Adams, Jr., Newbury, Nath'l. Felton, Danvers, Stephen Barker, Andover, Ira Worcester, Ipswich, Perley Tapley, Danvers.

The Committee appointed to award premiums for working Oxen and Steers, have attended to that duty and REPORT:

That the exhibition of working oxen was unusually large. Thirty pair of oxen, four years old and upwards, were entered for premium, twenty-six of which appeared on the ground and were examined by your committee, and their strength and training tested by drawing and backing a loaded wagon weighing 6800 pounds. Most of the cattle performed their task in drawing much to the satisfaction of the committee, but several yoke were very deficient in backing, a very important part, as the committee believe, in the training of cattle. The committee, however, are fully of the opinion that, taking into consideration the large number of cattle on the ground, they performed as well, if not better, than at any former exhibition. A number of pair, perhaps a majority, were well trained in every respect, and performed their work with apparent ease; and your committee regret that they were limited to only three premiums, as they would have been much gratified had it been in their power to have awarded several others on this occasion, but limited as they are to only three, after much consideration they unanimously award the premiums as follows, viz:

The first premium of $10 to Ebenezer Jenkins, of Andover, for his six years old red oxen.

The second premium of $7 to Andrew F. Curtis, of Middleton, for his four years old oxen.

The third premium of $5 to Perley Tapley, of Danvers, for his five years old oxen.

Your committee unanimously recommend that a gratuity of $2 each be awarded to Ralph H. Chandler, of Andover, A. P. Swinerton, of Danvers, and Charles Fos-

ter, of Andover, for their very fine and well trained four years old oxen.

There were but one yoke of three years old steers offered for premium, and those owned by Jedediah H. Barker, of Andover; they were very handsome, well trained, and performed their work to the entire satisfaction of the committee, and they accordingly award to Mr. Barker the first premium of $7.

All which is respectfully submitted.

DANIEL ADAMS, Jr., *Chairman.*

ON STEERS.

The Committee appointed on Steers, having attended to their duty, would respectfully REPORT:

That there were nine pair of three years old steers entered for premium.

1 pair by Jedediah H. Barker, of Andover.
1 " Isaac Osgood, "
1 " John Carleton, "
1 " Wm. Foster, "
1 " Charles Foster, "
3 " Jacob Farnham, "

1 pair of 2 years old steers, by Jacob Farnham, Andover.
1 " 2 Charles Foster, "

Four pair of one year old steers offered for premium:
1 pair by Joseph Kittredge, Andover.
2 " Samuel F. Barker, "
1 " Jacob Farnham. "

There was a larger number of three years old steers than usual, though in quality perhaps not quite equal to some of those exhibited the last year.

There was one pair of three years old steers from Danvers, by Mr. Brown, which were not entered.

The Committee were unanimous in awarding the premiums as follows:

First premium for three years old steers to Jedediah H. Barker, Andover, $7 00

Second premium to Isaac Osgood, Andover, 5 00

For two years old steers:

First premium to	Jacob Farnham, Andover,	$6 00
Second "	Charles Foster, "	4 00

Yearling steers:

First premium to	Joseph Kittredge, Andover,	4 00
Second "	Samuel F. Barker, "	2 00

There were three calves exhibited by Dr. Joseph Kittredge, of Andover, that the Committee considered uncommonly fine. Also, one pair by Henry Osgood, of Andover. Also, one pair in the yoke, belonging to Ralph H. Chandler, of Andover, that were perfectly handy.

All which is respectfully submitted, by

JEDEDIAH H. BARKER, *Chairman.*

ON FAT CATTLE.

The Committee on Fat Cattle make the following REPORT:

That there were entered at the Exhibition, for premium, thirteen large, well fatted oxen.

One pair by Isaac Stevens, of Andover.
" " " Eben Burrill, of Lynn.
" " " Perley Tapley, of Danvers.
" " " Alexander Davidson, of Andover.
" " " John Marsh, of Danvers.
" " " Moody Andrews, of Topsfield.
One ox by Jacob W. & John Barker, of Andover.

The Committee, after examination, awarded the premiums as follows:

The first premium of fifteen dollars to Alexander Davidson, for his near ox.

The second premium of ten dollars to Jacob W. and John Barker, for their large ox.

The third premium of five dollars to Eben Burrill, of Lynn, for his off ox.

A gratuity of three dollars to John Marsh, for his large brown ox.

Also, a gratuity of three dollars to Moody Andrews, for his near ox.

All which is respectfully submitted,

JOSEPH KITTREDGE,
OLIVER EMERSON,
JOSIAH NEWHALL,
} *Committee.*

ON BULLS.

The Committee on Bulls have awarded the first premium of $10 to Wm. S. Marland, of Andover, for his Durham Bull of 15 months old.

The second of $8 to Josiah Crosby, of Andover, for his native Bull of 3 years old.

The third premium of $6 to Benj. Poor, of West Newbury, for his Durham Bull of 4 years old.

The fourth premium of $4 to Sam'l F. Barker, of Andover, for his native Bull of 16 months old.

A gratuity of $3 to Charles B. Lander, of Danvers, for his 4 years old Bull.

A gratuity of $2 to James Stevens, of Andover, for his two years old Bull, and

A gratuity of $1 to Hobart Clark, of Andover, for his yearling Bull; and the thanks of the Society to Messrs. Wm. Wood, H. C. Merriam, and J. R. Clark, of Tewksbury, whose very superior animals added very much to our exhibition, but did not come within the rules of the society for premiums. And also to Messrs. Johnson and Herrick for very promising calves.

Your committee found no little difficulty in deciding on the comparative merits of the animals, and where age only made a difference, have given a preference to the younger animals.

Your committee were also of the opinion that the animals exhibited this season would not suffer in comparison with those exhibited on any former occasion, either for number or valuable properties.

In behalf of the Committee.

JOHN M. GROSVENOR.

ON COWS AND HEIFERS.

The Committee on Cows and Heifers have attended to their duty, and report as follows :

The number of cows entered for premium was five. The Committee, after careful examination, recommend the first premium of $10 to be paid to Farnham Spofford of Andover. The second premium of $7 to Abiel Russell, of Andover. The third premium of $5 to N. A. Prentiss, of Andover.

The cow of Amos Blanchard, of Andover, appeared to be a very superior cow, but was supposed to be more than ten years old, and therefore not entitled to the Society's premium.

The cow of George Maynard, (being one half Durham) was thought to be a good cow, but, considering all the circumstances, hardly equal to those aforementioned.

There were four heifers offered for premium, and the Committee unanimously recommend the first premium of $7 to be paid to Charles B. Lander, of Danvers. The second premium of $5 to Rev. Samuel C. Jackson, of Andover.

William S. Marland, of Andover, offered two heifers, partly of the Ayrshire stock, and they appeared to be very fine animals. The committee regret that they were not accompanied with such statements as to bring them within the rules of the Society.

Benjamin Poor entered, for exhibition only, five beautiful Durham Cows, from the Indian Hill farm in West Newbury.

There were also exhibited some very fine heifers (not in milk) by Josiah Crosby, John Flint, George Hodges, and others ; — they were of the Durham and Ayrshire breed, generally.

Jacob Farnham exhibited his young stock of native cattle from his farm in Andover ; they were rather small in size, but very pretty, deep red cattle.

Respectfully submitted for the Committee,

HOBART CLARK.

Andover, Sept. 27, 1843.

FARNHAM SPOFFORD'S STATEMENT.

Account of Milk from one cow, commencing June 1st, to Sept. 24th, inclusive.

Butter from said cow, made during the month of June, 59 lbs. 11 oz.

	lbs.	oz.
Weight of milk in June,	1273	1
" " " " July,	1028	2
" " " " Aug.	708	11
" " " " Sept.	665	11
Total,	3675	9

The average number of lbs. of milk to a lb. of butter, 21 and 13-60.

Said cow has had no other feed than a common pasture from the first of June to September, and no fall feed until Sept. 17th. My pastures were very short from the first week in July to the third week in August.

Very respectfully yours,

FARNHAM SPOFFORD.

N. Andover, Sept. 25, 1843.

ABIEL RUSSELL'S STATEMENT

To the Committee on Cows and Heifers:

GENTLEMEN:—I offer for premium my cow; she is of the native breed, eight years old. She calved on the 9th of May last, and her calf was taken from her when 3 days old. She has been kept during the past season on nothing but common pasture feed. I have kept a daily account of her milk ever since her calf was taken from her, which is here annexed.

Average quantity of milk per day that my cow has given this season. She calved May 9th, and I began to weigh the milk May 12th.

In the month of May,		$35\frac{3}{10}$ lbs	per day.
" "	June,	$34\frac{1}{2}$ "	"
" "	July,	$30\frac{1}{3\,1}$ "	"
" "	August,	$27\frac{19}{31}$ "	"
" "	September,	$28\frac{1}{1\,3}$ "	"

Average per day, through the season, $30\frac{55}{69}$.

ABIEL RUSSELL.

N. A. PRENTISS'S STATEMENT.

To the Committee on Cows and Heifers:

GENTLEMEN:—I offer for exhibition my cow and calf. The cow is 3 years and five months old; she calved the 13th of April, from which time until the last of July, she gave $9\frac{1}{2}$ quarts of milk per day. June and July we made five pounds of butter per week, after using daily 2 quarts of milk and likewise cream for various purposes. In August she gave 8 quarts, and we made 4 pounds of butter; she now gives 7 quarts per day. She gave, three weeks previous to calving, 3 quarts per day, when it was judged expedient to dry her up. Her milk contains an unusual quantity of cream, and her keeping has been a fair pasture. The calf is 5 months and 7 days old, and feeds upon hay and grass.

N. A. PRENTISS.

Andover, Sept. 27, 1843.

P. S. The cow is a mixture of the native and Durham breed, and has had no feed except what the pasture afforded.

CHARLES B. LANDER'S STATEMENT.

To the Committee on Cows and Heifers:

GENTLEMEN:—I offer for exhibition and premium my two years old heifer, native breed; she was raised by myself, and has always been fed well, but never forced. She calved upon the 23d June, and the calf was taken from her at a week old. Her milk was measured and she gave 10 quarts (large) of strained milk per day, for a week or more; at the end of a fortnight was measured again, gave a pint more than at the first measuring; and at different times since then she has given 5 and 6 quarts at a milking; once we got 12 qts from her, but as I do not wish to make her appear more than what she is really entitled to, should say 10 qts. per day is a correct average; the quality remarkably good; as her milk is sold, I had no opportunity of testing her value as a butter cow. Her feed has been pasture, and as much green

cut fodder as was necessary to make her feed equal to a good pasture. For 1 month she was allowed 1 pint of oil cake per day, and for that time only.

All of which is respectfully submitted.

CHAS. B. LANDER.

Danvers, Sept. 26, 1843.

SAMUEL C. JACKSON'S STATEMENT.

To the Committee on Cows and Heifers:

GENTLEMEN:—I have this day entered for a premium a heifer two years old, of native breed. She calved on the 16th of May, and her calf was taken from her on the 6th of June. From that period to the 25th of September she has given over 2000 lbs. of milk, making an average of about 18 lbs. per day.

She excels rather by the *richness* of her milk than by its quantity. On the last week in June an experiment was carefully tried to ascertain the amount of butter she would make in a single week. It proved an unfavorable time, as it was a week of intense *hot* weather, and during the period she was injured by cattle in company, yet her milk for the week yielded 6 lbs. and 10 oz. of good butter, less than 1 oz. short of a *pound per day.* Her milk during the week varied from 19 to 22 lbs. Had circumstances been ordinarily favorable, I am confident she would have gone over a pound per day, and would have yielded *a pound of butter to 20 lbs. of milk.* Her mother was remarkable for the excellence of her milk, and actually made an average of a pound of butter a day for a period of six months, with common keeping.

The heifer, with the exception of a fortnight, has, from necessity, *run on the high-way* in a herd of 6 cows. On this account she has been fed night and morning with *one* quart of meal, which has not made her keeping equal in expense or quality to grass merely in a good pasture.

SAMUEL C. JACKSON.

Andover, Sept. 26, 1843.

P. S. On the 14th of September she gave 21 lbs. and 10 oz. milk. On last Sabbath, 24th inst. she was in-

jured by eating too freely of corn, to which she accidentally got access, which has caused her since to shrink very much in her milk. S. C. J.

ON SWINE.

The Committee on Swine Report:

That they regret to find that so little interest has been taken in their department, and that the show of animals is so small. The only entries were by

William S. Marland, of Andover, 1 breeding sow and 2 boars.

Sylvester Goodwin, of " a sow and pigs.

Samuel F. Barker, " 1 breeding sow, 2 boars, and a litter of pigs.

William Williams, of Rowley, 1 sow and 4 pigs.

The Committee award to William Williams, of Rowley, for his breeding sow, the first premium of $5 00

And for the best litter of weaned pigs, the first premium of 6 00

They award to William S. Marland, for his boar, the first premium of 5 00

To Samuel F. Barker, for his second best boar, 2 00

To Sylvester Goodwin, for the second best breeding sow, 3 00

To William S. Marland, for the second best litter of weaned pigs, 3 00

The Committee cannot close their report without expressing their thanks for the honor conferred on them. To be selected as judges to decide the comparative merits of individuals of the interesting class of quadrupeds committed to their care, is a distinction to which they had not the ambition to aspire. The committee have been fully aware that this interesting race has not heretofore held that exalted rank in the estimation of the community which their merits deserve. The Agricultural Society of the County of Worcester has the high honor of rescuing from undeserved obscurity the much abused pig; and it was reserved to the Heart of the

Commonwealth to furnish a Champion for all living pork. It would be a singular instance of ingratitude on the part of the swinish race, if his valuable services in their behalf, should not be commemorated by some token of public approbation. The swine of Essex Co. would cordially join their brethren in other parts of the world, in some testimonial of gratitude to their distinguished benefactor. We would respectfully suggest to the sovereign porkers within our own jurisdiction that a meeting be held either at Byfield or that part of Ipswich called Hogtown, to choose delegates to a World's Convention. In that great constellation of swinish statesmen and worthies, we doubt not the luminaries of Essex would vie with the Bacon lights of Worcester, in doing honor to their own great patron.

It has not escaped the attention of the Committee, in their reflections on the dignity of the swinish race, that a new era in their history has just commenced. They are henceforth to be the lights of the world! It is to be from their liquid substance, after having "shuffled off this mortal coil," that the human race is to derive that light for which adventurous seamen have sought the huge Leviathan in the remote parts of the globe. Chemists have discovered that a substance may be derived from pork, having all the economical properties of oil. Thus the student at his midnight lamp, will be indebted to the light furnished from the swine, for the varied lore that will in its turn, enlighten the world! We submit then, whether the hog ought not to have a part at least, of the credit of the quirks and the quibbles, the doubts and decisions, the pleadings and replies and rejoinders of the limbs of the law? and whether we are not also indebted to him for a portion of the hair-splitting arguments, the nice distinctions, the disputes and the dust and the fog and the casuistical smoke of the polemic Divine?

The Hog has much reason to complain of his treatment from the hands of man. Not only is he deprived of his liberty, but he is exposed to violence and assassination, and seldom lives to old age, or dies a natural

death. No sooner does the youthful porker arrive at adult swinehood and exhibit the fine proportions of his sleek and portly form, than his brutal master begins to show a most unaccountable disposition to get him into "hot water," and he is cut off "in the midst of his usefulness" by the hand of the executioner. In his dealings with the hog he reverses the simplest rules of justice, as he hangs him first and tries him afterward.

The Committee lament to see that other animals of inferior worth have usurped a place in the affections of the people, to which the swine is a stranger. Instances of this may be seen in the preference for the dog and the cat. The Committee do not mean to be dog-matical, and they have no intention of delving into the mysteries of Pusey-ism, but they cannot be blind to the fact that the canine and feline races, inferior as they are in usefulness to our swinish friends, are treated with far greater deference and respect. The former are made the companions of man in his wanderings and at his domestic fireside, while to the latter, virtue is emphatically its own reward. The former are pampered and indulged by man, and fondled and caressed by woman. But what lady is ever seen fondling an unweaned pig? Alas! nobody caresses a pig, nobody loves a pig — unless he is roasted.

In common with some of the greatest names in the annals of the world, the hog is not appreciated until death has made him insensible to all human or swinish applause. History affords many instances of great benefactors of mankind, who in their lifetime were treated with scorn and neglect, but after death were rewarded, perhaps, by a monument or a statue. So it is with the swine. However he may be neglected and despised while he lives, he has the consolatory reflection that at his departure, he will have a place in the stomachs if not in the hearts of the people.

There is something in the name of the animal we are considering, which is associated with literature and science in their highest walks. The Ettrick Shepherd, whose simple poetry has beguiled many an hour on this

side of the water, as well as in his native Scotland, rejoices in the name of *Hogg;* and the mental food of many an urchin in the long winter evenings is derived from *Hogg's Tales.* In science and philosophy, how much would have been lost to the world if no light had been shed upon it by *Bacon!* and what streams of forensic eloquence at the Senate and the Bar, have proceeded from a *Choate!*

In the physiognomy of the hog there is something that engages the attention of the most casual observer. There is an expression of cunning in his eye that betokens shrewdness, and with the length of the nose we are accustomed to associate wisdom. Humility is stamped on all his features, and he is a most profound thinker. There is also an expression of gravity in his countenance, not inconsistent with that contentment and freedom from care, which often manifests itself in a jolly grunt or a merry squeal.

He cannot properly be called a non-resistant, although he holds some of the opinions of the new sect of Come-outers. He is a firm believer in the absolute equality of the sexes, favors amalgamation and is opposed to all government. Here we ought perhaps to beg the pig's pardon for the degrading comparison; — since he is never so ultra hoggish as to take pleasure in disturbing religious worship.

In his domestic habits the hog is not abstemious or over-nice in the choice of his food, and consults no treatise on cookery in its preparation. He claims no kindred with striped pigs, but is temperate in drinking and may justly be called a cold water hog. He never signed the total abstinence pledge, yet never violates its letter or its spirit. He is often in the gutter but he always goes in and comes out a sober hog — and never boasts of it afterwards.

The hog is a gentleman. This discovery was made as long ago as the time of Franklin, and that eminent philosopher was the first to make this important fact extensively known to the world. The aristocratic hog eats, drinks and walks about, like any other gentleman

dandy of leisure. He turns up his nose at labor and despises that vulgar portion of the community who from choice or necessity have any thing to do. He sports no whiskers but chooses to wear his bristles on his back rather than on his chin. He neither smokes cigars nor chews tobacco, but is content with his own pigtail. He is celebrated for a certain kind of independence in his movements and will go any way but the right one.—Like some of the biped race he is always in the opposition, and the surest way to get him to a desired point is to induce him to take the contrary direction. Should he suspect your intention he refuses to go any way—even the wrong one.

The gentleman hog is no Count D'Orsay in costume, and his dress, if it cannot be called graceful, yet considering that it consists of nothing at all, has no positive demerits—which is more than can be said of the dandy's.

The lady pig is also less solicitous about the "putting on of apparel" than those of her sex of another race. The form that nature gave her is never deformed by compression or by unseemly excrescences at her shoulders or elsewhere, and we hope she will not be accused of disrespect to the higher orders of the clergy if she has no superstitious reverence for Cardinals and Bishops. She is remarkable for her "good breeding," and in this respect fears not comparison with any Queen, of any realm. It is in the domestic circle where her virtues shine with the greatest lustre. In the bosom of her interesting family, her warmer affections are called forth, and it is there, the tenderness and solicitude of the mother, for the welfare of her offspring, are most conspicuous.

The whole business of the education of her infant family, in the various branches of swinish literature and science, devolves upon her. She has the aid of no Maternal Association, or School, or College, but she is competent to instruct them in all the duties and accomplishments useful in after life.

She first learns them the Geography of the sty, and so much of the adjacent territory as she is permitted to

explore. In the Languages, they are easily made familiar with their native tongue, which is hog-latin. In Geology they go deep into the different strata of the dung-heap, but they prefer cold batter pudding to pudding stone, and quarts of sour milk or even swill to any other Quartz. By dint of sundry whacks from their teacher they learn to distinguish Grey-wacke but rub very hard against Porphyry and Granite. In Arithmetic it is doubtful whether they ever go farther than the Extraction of Roots, and they close their education by obtaining a knowledge of Music. In the practice of this divine art they depend entirely on their own sweet voices and discard all instrumental accompaniments, believing that the best pitch-pipe is the wind pipe, and that Church Organs are a poor substitute for the vocal organs. They also believe that "when music heavenly maid was young" she had none of these artificial helps at her concerts, and that now she has grown old she can do very well without them.

In speaking of the literary attainments of the swinish pupils, the Committee would not be understood to favor that class of "learned pigs" which have sometimes been exhibited about the country, and they hope the Society will offer no premiums for their encouragement. The "learned pig," however, is not always confined to the swinish race. He sometimes walks on two legs, looks extremely wise, and at the same time appears very foolish. He is not remarkable for his modesty, but is known by his brazen face, and his brains are said to be made of pig-lead. Sometimes he is an inventor of pills and nostrums that will cure everything — but his own impudence, which is incurable. He issues inflated advertisements and flaming handbills, and forgets to pay the printer. He is sometimes an itinerant preacher and calls himself an Evangelist. In this character he is boisterous and denunciatory. He is a travelling pig and serves to shew

> "How much a dunce that has been sent to roam
> Excels a dunce that has been kept at home."

He is often a vagabond Lecturer and delivers com-

mon-place knowledge in a pompous manner, frequently taking the downward step from the sublime. He is addicted to quoting bad Latin, which he sometimes condescendingly renders into worse English. He also makes loud boasts of his Academic degree, if he has one, and whether he has one or not all sensible people willingly write him down an A. SS.

If the Committee have gone the whole hog in behalf of the race of animals committed to their charge, it is because they have reason to believe that the public have very inadequate notions of their importance to the welfare of our own species. Perhaps the best way to appreciate the blessings we possess, is, to suppose ourselves to be at once deprived of them. Let us apply this test to our connection with the swinish race. Let us suppose that some Miller prophet, of their number, should arise and predict a sudden and total destruction of his kind, and that unlike that of his human prototype, his prediction should be fulfilled. We will suppose the day of doom to have arrived, and that every swine, male and female, is swept from the face of the earth!

What darkness would then come over the world! We should be, like the foolish virgins, without oil in our lamps; Jews and Mahomedans would rejoice over the destruction of what they regard as the unclean race, and Grahamites would exult at their downfall. There would at once be a famine of pork, in all its solid and liquid forms. Never more could we expect to live on the fat of the land. Our dinners would lose their relish, and fish, which epicures say should swim three times, once in the water, once in the fat, and once in the stomach, would have to remain in their native element. The population of the earth would be perceptibly thinned;—we do not assert that the number would be less, but the people themselves would be thinner. Lantern jaws and cadaverous countenances would be contemptibly common. Aldermen would lose their rotundity and there would be no scarcity of living skeletons. There would be a short supply of short cakes,

and of spare-ribs there would be none to spare. Rash indeed would be the man, who should attempt to cater for his friends at a pic-nic,—they would look in vain for a rasher. Doughnuts would be banished from our tea tables, and baked beans from our huskings, while sensibility shudders in contemplation of the vile substitutes for sausages!

But we congratulate the Society that these dire calamities are not likely to spread their desolation over the land, and that our four-footed friends still live in all the dignity and glory of exalted swineship. Among all the boars of their race not one has been found thus to cast the gloom of his melancholy predictions over the face of swinish society. Such an individual would be deemed an unworthy son of Ham, and every shoulder would be raised against him. In a word he would be regarded as a most intolerable bore.

Your Committee in their endeavors to exhibit some of the high qualities of the race of animals under their special guardianship, have occupied more time than they intended; but not more than, in their opinion, its great importance demands. They have felt so deeply the solemnity of their position, that they have deemed levity wholly out of place, and they would regard any attempt at wit as quite unjustifiable. Having in this plain and solemn manner performed their duty to the Society—and the swine—they will feel amply rewarded, if others are led to admire and appreciate the social and domestic virtues of living Pork.

For the Committee,

F. POOLE, Chairman.

ON SHEEP.

The Committee on Sheep respectfully REPORT:

The Society not having of late offered premiums on Sheep, at their annual exhibitions, a special committee was appointed to examine such lots as were entered,

and to recommend such gratuities as may seem proper. Several lots of sheep were entered.

Joseph Marshall, of Ipswich, entered a lot, his whole flock, consisting of twenty-one. They are quarter blood Merino. Mr. Marshall's main object seems to be the raising of lambs for early market. His sheep, (a fair sample having been exhibited) appear no way extraordinary beyond what farmers generally in the county might raise by making the same exertions that he has made, but the Committee having carefully examined his very detailed statement of the whole manner of keeping his sheep, but more particularly his scrupulous regard to the preservation of their health, and on the whole his success in raising early lambs and good fleeces at a cheap rate of keeping, recommend that a gratuity be granted him of ten dollars.

Elijah Pope, of Danvers, exhibited a lamb five months and two weeks old, of extraordinary fatness, kept in a common pasture, and we recommend that a gratuity of three dollars be granted him.

George T. Clark, of Andover, entered eight Dishley sheep, but the committee saw no statement of his manner of keeping them.

Josiah Crosby, of Andover, exhibited one Dishley lamb ; but no statement.

Joel Russell, of Andover, exhibited six otter breed sheep, which we presume have claim to merit, on account of their having little disposition or ability to climb fences and to wander from their pastures, but no statement was presented.

George Spofford, of Georgetown, exhibited three sheep and two lambs, from one of them, with a statement that 24 lbs. of wool were clipt from the three sheep in June last. The two lambs are four months and twenty days old. The others had one lamb each which were sold at two and a half months old, at three dollars each. We recommend Mr. Spofford have a gratuity of five dollars.

For the Committee,

TEMPLE CUTLER.

JOSEPH MARSHALL'S STATEMENT.

To the Committee on Sheep:

GENTLEMEN.—The flock of sheep which I present for your consideration, contains twenty ewes, and one buck. I have paid particular attention to the improvement on both the quantity and quality of the wool of my sheep, but more particularly to raising early lambs for the market. I keep my sheep always in good plight, and have found that they will not be otherwise profitable. My method of feeding is to keep them in winter on clover, and particularly on second crop *hay*, also bean and pea vines, top stalks, &c. Fine high marsh hay, is the best kind of salt hay for them; but am more scrupulously attentive to the preservation of their health, by keeping them in dry places the whole year round. In the winter they are kept under an open shed nights, and never allowed to be out in wet storms, day or night, nor do I ever allow their skins to be wet, winter or summer, not even washing them before shearing, but wash the fleece after shearing, which I find little or no additional trouble. This treatment I have followed for several years, and my sheep have always been in fine health, no running noses among them, and have never found a tick or louse on them, since I commenced this mode of treatment. The most severe cold weather will be no damage to them, if they are kept dry, and indeed, their being kept so, I conceive to be indispensable to the preservation of health; it will surely preserve them from the foot-rot. All this is little or no trouble, for sheep will seek shelter under an open shed in wet weather, if left to govern themselves.

About the time of their yeaning, I give a gill of corn to each, every morning, and feed them freely on turnips and carrots. They commenced yeaning last winter, on the 20th of February. The last lamb came about the last of March; some were dropped on the severest cold nights, and were perfectly bright and lively, and not a lamb was lost.

If sheep are kept well, yearlings may be allowed to bring lambs; otherwise, by no means, until they are

two years old. I think they do not come to their greatest maturity till still older. I attribute the strength and activity of my lambs more than any thing else, to the age of the male, which was with the sheep, which I think, ought never to be less than four years, and still older, I think is better. I think, at eight years of age they are best.

My pasture is high ground, not very rich, not better adapted to sheep than most farms in the county. Sheep pastures should be fenced with a rail or board fence; mine is mostly wall, with a pole, or rider on the top.—Fetters are injurious, as is well known.

My lambs were sold, most of them, on the 10th of June last, at two dollars. By taking them away thus early, the dams soon became in better plight, and a part of them, on and after the 10th of August, yeaned the second time; these lambs also came strong and lively, one of which with its dam, as a sample of my flock of sheep, is exhibited here for your examination.

The part of my flock only that yeaned a second time, were with the male in the months of March and April, and I have no reason to doubt, had the others been in company, they would also have produced a second crop of lambs. Thence to February and March next, will give about the same length of time for gestation as at first.

My sheep are about one quarter blood Merino with the native. The product of wool this season, was from four to five pounds per fleece.

I have found my sheep to be by far the most profitable stock I keep; and intend another season to increase my stock to 40 or 50, which I consider a sufficient number to be kept in one flock.

JOSEPH MARSHALL.

—

Ipswich, Sept. 26th, 1843.

Then the above named Joseph Marshall personally appeared and made oath, that the foregoing statement, by him subscribed, is true, before me.

TEMPLE CUTLER, Just. Peace.

ON HORSES.

Your Committee on horses, would report, that several mares and colts were offered for exhibition, among which was one very fine 2 years old iron grey filly, by Elijah Pope, of Danvers. This was a superior and very promising animal. A 3 years old slate colored filly, by James A. Dodge, of Danvers—this filly possessed many excellent points for service and hard work. A 1 year and 5 months old filly, by Alexander Davidson, of Andover—this was remarkable for its unusual size for so young an animal, his weight being 870 pounds. There was also exhibited by David Stiles, jr., of Middleton, a likely 3 years old brown filly, thoroughly broken to harness, and under perfect control—besides these there were two mares with colts by their sides. Your Committee regret that the Society's premium for this class of animals has been discontinued, and would recommend the following gratuities:

To Elijah Pope, jr., of Danvers, for his iron grey filly, $5 00.

To James A. Dodge, of Danvers, for his slate colored filly, $4 00.

To Alexander Davidson, of Andover, for his brown filly, $3 00.

Respectfully submitted, for the Committee,

WM. P. ENDICOTT.

ON THE DAIRY.

The Committee on the Dairy REPORT:

That claims were made for the premiums offered for butter made in June, by Nathaniel Felton, of Danvers, William R. Putnam, of Wenham, David S. Caldwell, of Byfield.

For the premiums offered for butter made in September, by Allen W. Dodge, of Hamilton, Nathaniel Felton, of Danvers, William R. Putnam, of Wenham, Gardner B. Perry, of Bradford, David Hiddon, of Andover.

For the premiums offered for Cheese, by Daniel P. Stevens, of Andover, Benjamin Boynton, of Andover, Mrs. Lucy Osgood, of Andover.

Having examined with care the several specimens exhibited, and the statements accompanying them, the Committee unanimously agreed in recommending that the premiums be awarded as follows :

To Wm R. Putnam, for June butter,	1st prem.	$10	00
David S. Caldwell, " "	2d do	8	00
Nathaniel Felton, " "	3d do	6	00
To Nathaniel Felton, for Sept. butter,	1st prem.	10	00
David Hiddon, " "	2d do	8	00
Wm. R. Putnam, " "	3d do	6	00
Gardner B. Perry, " "	a gratuity	2	00
To Daniel P. Stevens, for Cheese,	1st prem.	10	00
Benjamin Boynton, " "	2d do	8	00
Mrs. Lucy Osgood, " "	a gratuity,	2	00
	Amounting to	$70	00

When we take into view the liberal appropriations annually made by the Society, to encourage improvement in the management of Dairies, it is to be regretted that the competition at our exhibition is so limited. True it is, that there is usually a sufficient number of claimants to take the premiums offered, and the articles exhibited are of a quality worthy of the premiums awarded, but still there is manifested a failure to meet the design for which the premiums are offered. Every body is more or less interested in the making of good butter and cheese. To the farmer they are among the best sources of his income, to all others the habitual use has made these articles almost essential as necessaries of life. Who in this community, when in health, passes a day of his life without the use of butter in some of its forms of culinary preparations ? Is it not then of great importance that the best method of making an article so generally used, should be known and observed ? And should not the premiums offered by our Agricultural Societies be the means of eliciting this information ? In the hopes of acquiring infor-

mation useful to ourselves and others, we have examined the statements of the several claimants and selected the following particulars:

Mr. Putnam, on Mr. Winthrop's farm, in Wenham, made from the milk of nine cows 714 pounds, since the 20th of May, being about 5 lbs. per week from each cow. He churns twice a week, the butter is rinsed thoroughly in cold water, salted with three quarters of an ounce of salt to a pound of butter. Mr. Putnam appears to have derived useful lessons of instruction from the management of his mother's dairy in Danvers, for which many of our premiums have been awarded.

Mr. Felton, on his farm in Danvers, made from the milk of 9 cows 909 lbs. from the 20th of May to the 20th of September, being about 6 lbs. per week from each cow. He churns once a week; takes particular care to keep the milk, the cream, and the butter, cool and clean; uses three quarters of an ounce of salt to a pound of butter. His September butter was of superior quality, and would well compare with that of any other dairy.

Mr. Caldwell, of Byfield, presented 32 lbs. of fair butter made from the milk of one cow in 30 days. He rinses his butter in two waters and salts with $1\frac{1}{4}$ ounce of salt to a pound.

Mr. Hiddon, of Andover, made from the milk of three cows, since the 20th of May, 200 lbs., being about 4 lbs. per week from each cow. He puts salt into the cream before churning, and having separated the butter-milk thoroughly rinses the butter in cold water.

Mr. Perry, of Bradford, presented a specimen of 150 lbs. of butter made from the milk of two cows since the 20th of May, being about 5 lbs. per week to each cow. His good lady also furnished a specimen of family bread to try it with; judging from the specimen provided, the committee could not but regret that the quantity was not equal to the requirements of the Society. It would have afforded them particular pleasure to have been able to have bestowed the Society's premium on a man who does every thing so well as Mr. Perry. We wish more of our professional friends would condescend to

exercise their powers in improving the common concerns of life; we think such exercise would not in any manner impair their usefulness in other stations.

Mr. Dodge, of Hamilton, presented a specimen of September butter, having made 872 lbs. from the milk of 12 cows since the 20th of May, which is about 4½ lbs. to a cow each week. He churns once a week, and never rinses the butter in water after the butter-milk is drawn off, unless it comes very soft. His butter was of good quality.

Mr. Martin, of Andover, presented a specimen of 42 lbs. of butter, accompnied by no statement; of course it was not in the power of the committee to form any opinion respecting it.

On examining the statements accompanying the specimens of cheese exhibited, the Committee do not perceive any thing essentially varying the process of making heretofore practised. Our opinion of the comparative merits of the specimens is indicated by the award of premiums. The cheese exhibited by Mrs. Foster would have more favour with the committee if it had not been artificially coloured. The committee have a particular fondness for the form and color which nature gives, and do not admire artificial modification.

The Committee desire to express their thanks to those who have favored them with specimens to examine, and they wish that more of their fellow citizens had public spirit enough to do likewise. Instead of half a dozen boxes of butter, and a few cheeses, at our Essex Exhibition, there should be at least one hundred specimens, and this being so, there would undoubtedly be one hundred purchasers, who would cheerfully pay a liberal price for a good article.

Respectfully submitted, for the Committee,
WM. SUTTON, Chairman.

Sept. 27th, 1843.

WILLIAM R. PUTNAM'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN:—I present for your inspection two box-

es of September butter, containing 31 lbs., being a specimen of 714 lbs. made since the 20th of May. Also a pot of June butter containing 34 lbs.

Process of making:— The milk is strained into tin pans; it stands from 36 to 48 hours; the cream is then taken off, and put into tin pails. We churn twice a week. When the butter-milk is drawn from it we rinse it thoroughly in cold water; it is then taken from the churn, worked in part, and salted, three quarters of an ounce of salt to a pound of butter. In about 24 hours it is worked again.

The quantity made from the first of June to the ninth of July, was 246 lbs. from nine cows. The feed of the cows was a common pasture.

WM. R. PUTNAM.

From R. C. Winthrop's farm,
Wenham, Sept. 26, 1843.

NATHANIEL FELTON'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN :—I present for your inspection two boxes of September butter containing 27 pounds, being a specimen of 909 lbs. made between the 20th of May and the 20th of September. This butter was made from the milk of 9 cows till the 9th of July, after that until the 20th of September, 10 cows. The feed was common pasturing till the middle of August, since then they have had grain stalks once a day. We have used milk for 10 in the family.

Process of making:—The milk is strained into tin pans: it stands from thirty-six to forty-eight hours in a cool cellar, when the cream is taken off, put into tin pails, and stirred every day. We churn once a week. During the warmest weather the cream is placed in the well about twelve hours before churning. After it is churned the butter-milk is thoroughly worked out, and the butter is salted with three quarters of an ounce to the pound; after standing about an hour it is again worked and weighed, each pound separately.

I also present for your inspection a pot of June butter, containing 25 pounds, being a specimen of 319 pounds made from the first of June to the 9th of July. The process of making the same as above. It was kept in the cellar, covered closely with fine salt.

NATHANIEL FELTON.

South Danvers, Sept. 26, 1843.

P. S. Two of the cows were heifers with the first calf, and eight of them came in in March.

DAVID S. CALDWELL'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN.—I offer for your inspection a firkin of butter containing 32 pounds, made from one cow, from the fifth of June to the fifth of July.

Process of making:—The milk is strained into tin pans, and set in a cool place prepared in an out building for that purpose. It stands from thirty-six to forty-eight hours, the cream is then taken off and churned once a week. When the butter is gathered the butter milk is drawn off, and the butter rinsed in two waters; it is then worked in part and salted; one quarter of an ounce of salt and half an ounce of loaf sugar, to a pound of butter; it is then set in the cellar 24 hours, after which the working is completed.

DAVID S. CALDWELL.

Byfield, Sept. 27th, 1843.

DAVID HIDDON'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN—I present a specimen of butter, (30 lbs.) produced from four cows, and prepared much in the usual way.

The milk is set in tin pans, generally standing thirty-six hours, when the cream is removed and placed in an earthen pot, which stands on the cellar bottom.

A handful of salt is thrown into the pot, before enter-

ing the cream, which is frequently stirred at the times of addition. Butter made twice a week. When the butter comes, it is separated from the butter-milk and thoroughly rinsed in cold water, salted and placed in a cool cellar, where it remains perhaps 24 or 36 hours, when it is again worked and weighed.

With an average of three cows, since May, I have made 200 weight of butter, having taken of the milk all the time very liberally for family use.

DAVID HIDDON.

Andover, Sept. 26, 1843.

DANIEL P. STEVENS'S STATEMENT.

To the Committee on the Duiry:

GENTLEMEN:—The cheese which I present for your inspection was made in the months of June and July. We made from the 28th of May to the 25th of September 121 lbs. new-milk, and 460 lbs. four-meal and six-meal cheese; and the quantity of butter made from the milk of three cows and a heifer to the 26th of September was 220 lbs. Their feeding was grass only. Two calved last of April, and two last of May. I have three in the family that are supplied with milk.

The process of making the cheese is, to set the milk in a cool place at night, and in the morning warm it and add it to the new milk; then allow two gills of rennet to ten pails full of milk; let it remain one hour, then cut it with a wooden knife that will reach the bottom of the tub; let it remain again until the whey begins to appear; then dip it into a basket to drain; turn it and cut it, and then place a follower with a stone above it, on the curd, that the whey may all be removed; then put it in a cool place to remain until the same process is performed again. Then cut the two curds in small pieces, warm them in whey eight minutes, salt it wholly in the curd, about a table spoonful of salt to a pail full of milk; press it two days, turn it twice a day, then

put the cheeses into a cheese-room, and turn them and butter them once a day.

Respectfully yours,

DANIEL P. STEVENS.

Andover, Sept. 26, 1843.

BENJAMIN BOYNTON'S STATEMENT

To the Committee on the Dairy:

GENTLEMEN—The cheese I offer for your inspection was made in June. As to the process of making, I strain my milk at night, in a kettle; in the morning take off the cream, warm them separately, then put them together and add the morning's milk — half a pint of rennet to eight pails of milk. As the whey begins to appear, cross it with a stick, and after it settles dip it in the basket. When drained dry, a tablespoonfull of salt to a pail of milk is added, and broken up fine, and put into the hoop and pressed 48 hours. The dairy consists of two cows and a heifer, which produced 115 lbs. new milk cheese, 250 lbs. four meal cheese, 150 lbs. butter. I also used the milk necessary for six persons. Yours,

BENJAMIN BOYNTON.

Andover, Sept. 26, 1843.

LUCY OSGOOD'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN—I present for your inspection, four cheeses. Three of them were made the last week in June. From the 26th of June to the 12th of August, I made 620 pounds of new milk cheese. May and June the calves took a great part of the milk: therefore, I made before and after making the new milk cheese, only 130 pounds of butter, and 200 pounds of four meal cheese. The above quantity of butter and cheese was made from the milk of seven cows. We calculated two

of the cows' milk for family use. The feeding of the cows has been common pasturing only.

The process of making and preserving my cheese, is the same as is stated in the Society's Transactions of the year 1842. Respectfully yours,

LUCY OSGOOD.

Andover, Sept. 27, 1843.

IMPROVING MEADOW AND SWAMP LANDS.

The Committee on improving Meadow and Swamp Lands REPORT:

That there have been but two entries for premiums the past year for reclaiming such lands, viz: One by Josiah Newhall, of Lynnfield, the other by Richard Phillips, Jr., of Topsfield.

Mr. Newhall has reclaimed several pieces of Swamp and Meadow lands with good success. A full and detailed account of his mode of operation has been handed to your committee by him, which is herewith submitted, which, in the opinion of the committee, will give a much better idea of his mode of reclaiming such lands than any account of it your committee might give.

Mr. Phillips has reclaimed a piece of swamp of about 3½ acres, which he has brought into good English grass land with much labour, and has obtained a large crop of hay from it. Your committee regret that Mr. Phillips has not given them a more full and detailed account of the expense attending the reclamation of his land, so as to authorize them to award him a premium.

The Trustees of the Society require that every claimant for premium should give a full and detailed statement of his mode of operation, and the expense attending the same, that they may be able to judge of the best method of reclaiming such lands at the least expense.

The following is an extract from the regulations of the Trustees of the Society, Art. 7th—Improving wet Meadow and Swamp lands:—

"For the best conducted experiment in reclaiming

wet meadows or swamp lands, on not less than one acre, the course of management, and the produce, &c., for a period of two years, at least, to be detailed, with a statement of all incidental expenses, &c.

"For the second best.

"For the best conducted experiment on not less than one half an acre, with the same requisitions.

"For the second best."

Thus it will be seen that every claimant for premium that does not conform to the requisitions of the Society is not entitled to a premium.

Your committee viewed the several pieces of land offered by Mr. Newhall while the grass was standing; — that belonging to Mr. Phillips was not viewed by the committee until the hay was in the barn.

Your committee will finish their report by awarding to Josiah Newhall, of Lynnfield, the first premium, of twenty dollars.

Respectfully submitted for the committee,

LEWIS ALLEN.

Danvers, Dec. 18, 1843.

JOSIAH NEWHALL'S STATEMENT.

To the Committee on reclaiming Meadow Lands:

GENTLEMEN:—Since 1839 I have made several experiments on wet meadow and swamp lands, the result of which I now give you. I commenced on a lot of peat meadow containing about 3½ acres, low and very wet, so much so that in wet seasons the grass which grew upon it could not be dried till removed to the adjoining upland, and was then worth little more than the expense of getting.

After having examined the meadow, and finding that it could be drained, I took up a bridge on a high-way passing the stream below the outlet, and sunk the bed of the stream two feet, continuing it through the middle to the upper part, then cut marginal ditches, taking the

water from the high grounds and conducting it to the main ditch. These have laid the meadow sufficiently dry.

In March, 1840, while the meadow was frozen, I hauled upon three quarters of an acre, sand and gravel from a hill near by, sufficient to give the surface a thin coating, and keep down the grass; this was spread in June, and herds-grass and red-top seed sown upon it the September following, after having spread upon the gravel about ninety bushels of leached ashes. The crop of hay in 1841 was at the rate of two tons to the acre — in 1842, two and a half tons at the first cutting.

The present season, no top dressing having been applied since the ashes, except a light dressing of rockweed in May last, which the dryness of the season prevented from having the desired effect, the crop of hay was at the rate of two tons. The second growth was large. This has been fed lightly, and the remainder now covers the ground.

Other portions of the meadow have been treated in the same way, with a similar result. In October, 1842, I plowed about half an acre, by attaching a plow to a pair of wheels, the oxen driven on the turf, the meadow too soft for the off oxen to walk in the furrow. This was planted in May with potatoes, — chenango and long blues. The chenangoes were dug for market before attaining their growth, producing fifty bushels. The blue potatoes growing on twenty-seven rods, produced sixty bushels of very large and fine potatoes.

I have also made an experiment upon a piece of swamp land chiefly covered with banks of bushes, water standing between them through the year, rendering the land nearly worthless, being too wet for trees to grow. I opened the outlet sufficiently to drain off the water; with two yoke of oxen hauled up the banks and bushes, which, when dry, were burnt; — run ditches parallel to the main ditch and emptying into it, and turned the furrows towards the centre of each bed from the ditches. The black mud, from eight to twelve inches in depth, resting on a subsoil inclining to a sandy clay. On a

part of this land I planted potatoes in 1841—2. The crops were large and the quality fine.

After the potatoes were harvested, I laid the land to grass about the middle of October, and although sowed so late, the grass scarcely making its appearance before winter, yet late in July following I cut one and a half tons to the acre, and three quarters of a ton in September.

The other part of the swamp was seeded down to grass in August, 1840, without having been previously planted, and the first crop was over two tons to the acre. This portion of the swamp having received a top dressing of rockweed in March, 1842, produced 6057 lbs. of first rate market hay to the acre. The herds-grass standing at the time of harvest over four feet high, the tallest heads being four feet eleven inches. The second crop was estimated at one ton. The crop the last season was considered by good judges to be two and a half tons at the first cutting.

After draining the peat meadow, my first inquiry was, how I could cultivate it to the best advantage. Plowing was out of the question, as a team could not walk upon it. I offered to hire two men to invert the sod with bog hoes, or a topping knife; they made a trial, and refused to do it for less than twenty cents a rod; this I declined paying, it amounting to thirty-two dollars an acre, about four times as much as the meadow was valued at a few years before. I then pared off the hassocks, and hauled on gravel when the meadow was frozen, (as before stated) at an expense of about twelve dollars per acre.

Having other lots of peat meadow susceptible of similar improvement, and considering the very large amount of such lands in the State, said to be 70 or 80,000 acres, a large portion of which may be made the most valuable lands we have, for potatoes and hay, it becomes a subject of much moment to ascertain the best method of reclaiming them. So far as my experience goes, all things considered, I have arrived at the conclusion that the most economical and profitable course to be pursued, after ditching and draining, is to cover with gravel in the winter, spread it on the grass in June, and after put-

ting on some ashes or compost manure, sow in August or September herds-grass and red-top seed, one bushel of the latter, and sixteen quarts of the former, to the acre. After cutting the grass the second year, I found that the gravel and grass roots had so hardened the surface that I could haul a ton of hay without scarcely indenting the surface. An acre of this meadow could now be plowed in a day with four oxen without difficulty, by using a pair of wheels and letting the off oxen walk out of the furrow, thus saving a very large amount of the expense required to turn it by hand.

Other advantages are to be derived from this method of spreading on gravel, besides the facility it gives of readily plowing deep at little expense, and exposing to atmospheric influence the inert peat below. Coarse gravel, to the amount of one hundred or one hundred and fifty ox-cart loads to the acre, I consider worth more to the land than the same amount of stable manure would be without it, inasmuch as the gravel has a tendency to warm and give firmness to the meadow, causing the roots of plants to take stronger hold than they ever can in mere peat ; and what is, perhaps, of still greater consequence, the stones impart an alkali which neutralizes the acid of the peat, and renders the meadow highly productive.

Peat meadows treated in this manner, after the coat of gravel shall have been plowed down ten or twelve inches and the peat become exposed to the ameliorating influences of the atmosphere, will, I have no doubt, produce as large crops of potatoes, oats, hay, and I may add, Indian corn, as any lands in New England. The quantity which I have reclaimed is about five acres. The depth of peat in the meadow is from two to ten feet. The peat mud obtained from the ditches, for compost manure, more than paid the expense of draining, and the first crop of hay or potatoes paid all other expenses. The first two crops paid the expense of reclaiming the swamp. Respectfully yours,

JOSIAH NEWHALL.

Lynnfield, Nov. 10, 1843.

RICHARD PHILLIPS, JR'S., STATEMENT.

To the Committee on reclaiming Meadow Lands:

GENTLEMEN:—The piece of land which I offer for a premium is for what labor I did previous to 1841. The piece contains about $3\frac{1}{2}$ acres, and when I commenced on it, which was in the month of June, 1839, the water on a large part of it was $2\frac{1}{2}$ or 3 feet deep. My first effort was to drain it, and by fall we succeeded in being able to cut a ditch through it. When we commenced, this land was covered very thickly with dog-wood, bilberry bushes, small maples, black alders, and other bushes. We cut these down in June and burnt them on the land. A part of this land is composed of vegetable matter from 1 to 3 and 8 feet deep. The first year we got a crop on this land, we had $1\frac{1}{2}$ tons per acre; last year, on the $3\frac{1}{2}$ acres, there were 8 tons of the first crop, and 3 tons of the second crop, being 11 tons of good prime English hay on the $3\frac{1}{2}$ acres.

This land is now of the first rate quality, and very valuable; before we commenced working it, it was a nuisance, a pit of unhealthy stench.

Yours respectfully, R. PHILLIPS, JR.

Topsfield, Nov. 1, 1843.

ON AGRICULTURAL IMPLEMENTS.

The Committee on Improved Agricultural Implements REPORT:

That to their inspection was submitted a fox-trap, which was a beautiful and highly finished specimen of workmanship, and, as such, it would doubtless have received due consideration from the Committee on Manufactures. It did not, however, appear to possess any novelty in the contrivance, by which the operations of Messrs. Reynard & Co., were to be curtailed.

Mr. Clapp, of Dorchester, exhibited in actual operation, an entirely new implement called a Scarifier and Roller, by which the two operations of rolling and har-

rowing are united in one. The land upon which the work was performed, was a fresh inverted sward. It was soon reduced by it to a very fine and mellow condition, suitable for sowing the smallest seeds with success. The Committee are of opinion that it will be found a labor-saving machine, but to what extent, further trial must determine. They concur in the opinion that the effort of Mr. Clapp is a most deserving one, being an effort to effect improvement in one of the most important departments of agricultural operations. They recommend that a gratuity of ten dollars be paid to him.

A revolving saw, for trimming trees, evidently a very useful instrument, was presented for exhibition only, by Erastus Ware, of Salem, who deserves the thanks of the Society for showing them how this laborious operation may be facilitated.

For the Committee,

ALLEN W. DODGE.

ON THE CULTIVATION OF MIXED AND GRAIN CROPS.

The Committee on the cultivation of mixed and grain Crops REPORT:

That the subject of mixed crops, for experiments, on which premiums were for the first time offered by the Essex Agricultural Society the present year, has not received hitherto that attention from farmers which its importance seems to demand. In the memoirs of the Philadelphia Society for promoting Agriculture, vol. 2, page 200, in a communication by John Lorain, dated Tackony, 21st May 1810, there is stated an experiment on planting Indian corn and potatoes in alternate rows, "the corn eight feet and three inches distant; hills, or rather clusters at eighteen inches on the rows, but three plants suffered to grow in each. Between the corn, two rows of potatoes planted, two feet three inches apart." In a note appended, he further says, "I have frequently planted Indian corn in single rows eight feet asunder, and

dropt single corns two feet distant from each other in the rows, so as to stand in single plants. This mode was suggested to me by General Washington, who told me he had great success in it. When the corn was ridged, potatoes were planted in the cleaning-out furrows, which were filled with rotted dung and closed by two furrows backed over the potatoes by the plough. I have had repeatedly 40 to 50 bushels of shelled corn, and 100 to 150 bushels of potatoes to the acre. The roots of the corn ran into the dung and received every benefit. I have never had a nubbin, as the stalks had each no less than three, and the most four, perfect and large ears. In weight the crop always exceeded the best corn cultivated in the common way, whatever number of bushels there might be."

This agrees with the statement of Mr. Newhall, by which it appears that the corn of the mixed crop weighed from 4 to 6 lbs. more per bushel than the corn from the unmixed lot. It is to be regretted that no statement in regard to the difference in the quality of the potatoes, if any there be, is not also given.* It is not improbable that potatoes grown in the shade, or partly so, will be found superior to those grown in the full blaze of the sun. And although it may seem out of place in this report, we venture to remark that the quality of potatoes is much more influenced by culture than has been generally supposed — that on this subject there is much to be learned — and that in the absence of information derived from truth-telling experiments, we venture to suggest that those produced under a deep cover of mould will be better than those that grow near the surface, — that those produced in a soil containing much decaying vegetable fibre will prove more mealy than those manured with strong animal matter, which will be, if we mistake not, of a more soapy consistence. We strongly recommend the subject to the observation and experiments of farmers generally.

* Since this report went to the press, I have received from Mr. N. the letter which is appended to his statement

For the premium of $10 for the best conducted experiment in raising a mixed crop of corn and potatoes, or mixed grain, on not less than one acre, there were two claimants, viz: Asa T. Newhall, of Lynnfield, and Daniel Putnam, of Danvers. The committee award the premium of $10 to A. T. Newhall.

Their statements follow, and from them we trust the readers of these Transactions will derive some valuable knowledge. The two pieces of land on which the experiments were made were very different in quality and condition, and the amount of the crops obtained differed perhaps accordingly.

But the amount obtained was not taken into consideration by the committee. Two questions, arising from the consideration of the subject, required of them an answer. The first, Do the experiments stated furnish information to farmers of sufficient value to justify the awarding of the premiums offered? Which, being answered in the affirmative, the second question, Which of the claimants has furnished the more valuable part of this information? is answered by the award above stated.

There was also presented for the consideration of the Committee, a claim by Francis Dodge, of Danvers, for the premium offered for Indian corn, and another claim, by Asa Nelson, of Georgetown, for a crop of wheat. In the opinion of the Committee, there was nothing sufficiently novel or extraordinary, either in the mode of culture or in the amount of the crops obtained, to warrant the awarding of the premium offered, to either of these applicants. But as farmers, as well as others, often require line upon line and precept upon precept to induce them to do as well as they might if they would only imitate the example set by the more successful cultivators among them, the committee consider the statements of these gentlemen well worthy a place in the Society's Transactions, and recommend that they be published accordingly.

Per order,

ANDREW NICHOLS, Chairman.

Topsfield, Dec. 1, 1843.

ASA T. NEWHALL'S STATEMENT.

To the Committee on mixed Crops:

GENTLEMEN:—I have made experiments on mixed crops the present year, and will briefly state the result. The experiments were made on a piece of plain gravel loam containing about six acres, a part of which is coarse and full of small stones, on which there had been no manure for the last 9 or 10 years. In 1841 it was sown with rye; in 1842 the stubble was ploughed in and Indian wheat sown, but a small part of which, either from age (it being 6 or 7 years old) or from some other cause, vegetated, which was ploughed in in the fall of 1842. In the spring of 1843 a compost manure consisting of 12 cords of manure from the barn and pig yard, and 12 cords of meadow mud and 3 leaches of ashes, was spread and ploughed in, and afterwards harrowed and rolled. The planting was on the 23d, 24th, and 25th of May.

Lot No. 1, containing 194$\frac{4}{5}$ rods, which was planted in alternate rows of corn (called Highgate,) and potatoes, a part the orange and a part the blue-noses, which produced 34 bushels 27 quarts of corn, 145$\frac{3}{4}$ bushels of potatoes, which is equal to 28 bushels 4$\frac{1}{3}$ quarts of corn, weighing 60 lbs. per bushel, and 120 bushels and 6 quarts of potatoes to the acre.

Lot No. 2. All potatoes, 82$\frac{1}{2}$ poles, seeded with long reds and blues, which are considered to be the most productive kinds, yielded 109 bushels, which is 106 bushels and ten quarts per acre.

Lot No. 3, containing 172 poles, planted with fifteen different kinds of corn mixed, twenty-nine kinds of potatoes in alternate rows; some of the kinds of corn and of the potatoes on this lot were of the most unproductive kinds; yielded 31$\frac{1}{4}$ bushels of corn and 105$\frac{1}{4}$ bushels of potatoes, being 29 bushels and 10 quarts of corn weighing 62 lbs per bushel and 99$\frac{1}{2}$ bushels of potatoes to the acre.

Lot No. 4. All Corn, contains 87 poles, yielding 28 bushels and 20 quarts of corn, which is 26 bushels and

14 quarts per acre, weighing 54 lbs. per bushel. The Committee who viewed the premises undoubtedly noticed that the mixed crops were planted on that end of the lot which is the poorest soil.

Your ob't servant,

ASA T. NEWHALL.

Lynnfield, Nov. 27, 1843.

I hereby certify that I measured the foregoing lots of land, and the measure of each lot as above described is correct. JOSIAH NEWHALL.

ASA T. NEWHALL'S LETTER.

When I first planted potatoes with corn in alternate rows, three years ago, it was not with the expectation of increasing the crops of either, but to make the experiment whether potatoes of a better quality would be produced by growing among and being partially shaded by the corn than by being fully exposed to the rays of the sun; the year previous the only potatoes I raised that were eatable grew on the margin and under the trees in the corn field. A patch on bog land which appeared very promising until nearly grown, by a few days of great heat in the month of August, were blighted so that the vines became slimy, and when harvested were unfit for use; the potatoes grown among the corn for three years past have been of a good quality, much better than those of the same kinds grown in the usual way; samples of those raised with the corn the present year have been tried by several of my neighbors, and by persons in Lynn and Salem, who pronounce them to be very good, and some of them say the best they ever had. The rohans and pink eyes which have been considered the most ordinary kinds for eating, sell readily in the market to those who have tried them.

Yours truly, ASA T. NEWHALL.

Dr. ANDREW NICHOLS.

DANIEL PUTNAM'S STATEMENT.

To the Committee on Grain Crops :

GENTLEMEN:—My experiment upon mixed crop of corn and potatoes was conducted in the following manner : The land had been in grass three years. It was broken up about the 6th of May, about 9 inches deep, and then rolled with a heavy roller. Then 21 loads of manure from the barn cellar and hog yard, mixed together, were put upon the piece, it was then ploughed with a small plough across the furrows, taking care not to disturb the sod, and then harrowed and laid out in rows four feet apart. The potatoes were dropped about one foot apart in the rows. The corn was planted about two feet apart in the rows, and three stalks left to grow in each hill. It was planted on the 13th of May, one half of it alternate rows of corn and potatoes, the other half corn on one side and potatoes on the other. It was hoed three times.

The produce was, on the part which was not mixed, 36 bushels of corn, weighing 75 lbs. per bushel,* and 60 bushels of potatoes.

On the mixed part, 42 bushels of corn and 48 bushels of potatoes.

Not mixed, corn 36, potatoes 60.
Mixed, " 42, " 43.
Corn, not mixed, 72 bushels to the acre.
Corn, mixed, 84 " " "
Potatoes, not mixed, 240 bushels to the acre.
Potatoes, mixed, 192 " " "

Danvers, Nov. 24, 1843. DANIEL PUTNAM.

This may certify that we the undersigned, assisted in planting and harvesting and measuring the above crop, and testify that the above is a true statement.

BENJAMIN W. PUTNAM.
LEMUEL S. FOSS.

This may certify that I measured the above piece of ground, and it contains one acre and no more.

J. A. PRESTON.

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* *Note by the Committee.*—Probably the weight of the corn and the cobs from which it was shelled.

FRANCIS DODGE'S STATEME NT.

To the Committee on Grain Crops:

GENTLEMEN:—I offer for premium one acre of corn, as measured by Mr. Woodbury, from which was obtained 91½ bushels.

This ground was broke up in the summer of 1842, and planted with turnips and corn; at that time it was manured with twelve loads of hog manure. The soil is a loam, and the land has a southern aspect. The last of April we hauled 4½ loads of manure from the cellar and put it in small heaps on the ground; this was spread and ploughed in on the 9th of May, spreading no faster than we could plough it in; it was well harrowed, and furrowed at the distance of 3½ feet each way. Four cords of manure, consisting of night soil and meadow mud, at the rate of four loads of mud to one of night soil, were put in the hills the 13th May, and from five to eight kernels of corn were dropped and covered. It was hoed the first time, June 8th and 10th—the second time, June 20th, and the last time, the 28th of the same month; at each time of hoeing the cultivator was used. The corn was topped the 27th of September, and harvested the last of October, and was measured the 2d of November. The kind is a long eight-rowed variety with small cob.

The expenses on the above corn were as follows, viz:

To Interest on land,	$ 6 00	By 91½ bushels Corn, at 70c,	$64 05
Ploughing,	2 00	Fodder,	20 00
Manure on land,	50 00	One half value of manure on land,	25 00
Harrowing and planting,	2 50		
Seed, ,75. Furrowing, ,75,	1 50		
Expense on Manure,	1 50		
Cultivating & hoeing 3 times,	7 00		
Curing Fodder, Harvesting and Husking,	10 00		
	80 50		
Balance in favor of crop,	28 55		
	$109 05		$109 05

FRANCIS DODGE.

This may certify that I measured a quantity of corn said to have been taken from the above mentioned acre of land, and the same measured 91½ bushels.

SYLVANUS B. SWAN.

ASA NELSON'S STATEMENT,

To the Committee on the Cultivation of Crops :

GENTLEMEN:—I offer for premium a crop of wheat. The land is gravelly loam; it had been laid down seven years. The two past years it had been planted with corn, applying about eight cords of barn yard manure a year. I ploughed it the first of May, and spread on about eight cords of manure, sowed one and a half bushels of wheat on one acre and a quarter and sixteen rods of ground. The crop when harvested measured 31½ bushels of good wheat. My manner of formerly preparing my wheat for sowing has been by applying much lime, but this season I was not situated so as to come to it easily, and losing my belief of the utility of it in a measure, in the preparation thereof I used nothing but ashes. The great secret of raising wheat in this vicinity, is, in my opinion, to have the weeds well subdued the previous years, and the land well manured ; the profit arising from it will be greater than from the cultivation of oats or barley. The seed which was sowed on this land, was Black Sea Wheat.

ASA NELSON.

Georgetown, Nov. 7, 1843.

EXPERIMENTS ON MANURES.

The Committee, consisting of Moses Newell, of West Newbury, Wm. S. Marland, of Andover, and myself, to whom, at the meeting of the Trustees in December was referred the statement of Joseph How, Esq., of Methuen, of the continuation of his experiments on manures, have carefully examined the same, and are of opinion that Mr How is entitled to credit for the care and attention with which his experiments have been conducted. In this, as in several other communications heretofore made by Mr How, he has shown himself to be a farmer of the right stamp, willing to try to do something more than his fathers have done before him. We do not dis-

cover in this statement, any thing particularly important that was not communicated the last year; and as the regulations of the Society provide that "no object for which a premium has heretofore been awarded by the Society, will be entitled to another premium, unless it be of a higher order, or for qualities different from those for which the former premium was awarded," we do not feel at liberty to award any premium. It is to be regretted that the Committee, whose duty it was to have looked to this matter, had not found it convenient to have viewed the premises while the crops were in the field; such a view would have given a much more intelligent idea of the subject, than is possible to be obtained from any description. We are not distinctly informed by Mr. How as to the quantity and description of manure applied by him to his lands the *present season*. In his statement of the last year, page 88, 6th line from the top, for *two loads*, read *one hundred loads*. His experiment as to the use of liquid manure was of too limited a character to authorise any definite conclusion. We hope he will take occasion to give this branch of the subject a more thorough and extensive trial.

For the Committee,

J. W. PROCTOR.

Danvers, Dec, 30, 1843.

JOSEPH HOW'S STATEMENT.

To the Committee on Experiments on Manures:

GENTLEMEN:—Having tried several experiments the last year to ascertain the comparative value of different kinds of manure, I have the present year continued those experiments and tried several more. First, I would refer you to my experiments of last year published in the doings of the Essex Agricultural Society. The ground there described, where I tried several experiments, I this year sowed with oats. In consequence of the drought

and mildew the crop was very light, but not an entire failure. The result was as follows : Lot

No. 1, Compost, waste soap and mud, 22 bush. per acre.
" 2, Green manure, 22 " "
" 3, Compost, with salt, 24½ " "
" 4, Compost, without salt, 21 " "
" 5, Bone, 21 " "
" 6, Poudrette, 20 " "

The land where I last year used salt and lime, I this year sowed with barley and there was no perceptible difference in the crop.

In the same field I sowed one acre and 75 rods with winter rye, and spread on the same 14 bushels of crushed bone which is about 10 bushels per acre. Also at the same time, sowed 117 square rods without bone. The land where I sowed bone produced 22 bushels of rye, about 16¼ bushels per acre. The other part produced 8½ bushels, about 11½ bushels per acre. Expense of bone, with freight, about 40 cents per bushel.

Last spring I mixed a heap of compost manure, three parts peat mud, and one part manure from the cellar, with which was mixed one cask of lime to 7 cart loads of compost; when it began to ferment, I pitched it over, let it remain a few days, and pitched it over again and covered the heap with mud. I then (on a piece of land that was broke up last September,) measured off 3 lots 4 rods long, and one rod wide, and manured them as follows :

Lot No. 1, one cart load of the above named compost.
" 2, one cart load green manure from barn cellar.
" 3, two cart loads peat mud.

Then spread and plowed in the manure, harrowed it and planted it with 3 rows of potatoes, and 2 rows of corn to each lot.

On harvesting the crop the result was as follows per acre.

Lot No. 1, Corn, 81 bushels—Potatoes 333 bushels.
" 2, " 68½ " " 353 "
" 3, " 50 " " 203 "

Also on one square rod I sowed half bushel of crush-

ed bone broadcast, planted as the other lots with corn and potatoes. Crop per acre, 68½ bushels corn; 366 bushels of potatoes.

Also, planted 2 square rods without manure—crop per acre 195 bushels of potatoes, 40 bushels corn. The corn was weighed and reckoned 70 pounds to the bushel.

In the same field I tried another experiment to ascertain the comparative value of solid and liquid manure. The solid manure that one cow made in one week was mixed with eight bushels of peat mud; also, the liquid made in the same time was mixed with the same quantity of mud. It remained in the barn between 2 and 3 weeks; during that time it was pitched over twice. Each lot of manure was then put on to one square rod of land, carefully spread and plowed in; planted it as I planted the other lots with corn and potatoes. There was but little difference in the appearance of the crop excepting the potato tops where the liquid manure was used remained green longer than that manured with solid. The result was as follows:

Where manured with solid, 70 bushels corn, 325 bushels potatoes.

Where manured with liquid, 67½ bushels corn, 333 bushels potatoes.

The land where the above experiments were tried, was rather warm and dry, the soil, a gravelly loam.

That there should be no mistake about the above experiment, I have carefully attended to it myself.

JOSEPH HOW.

Methuen, Nov. 29th, 1843.

ON FRUITS AND FLOWERS.

The Committee REPORT:—That the number of entries of fruits and flowers was between thirty and forty.

The Committee award to

Andrew Dodge, of Wenham, for 33 varieties of apples and pears, - - - $2 00

Joseph How, of Methuen, for 13 varieties of apples, pears and grapes, - - 2 00
John M. Ives, of Salem, for 32 varieties of pears, plums, peaches, &c., - - 2 00
George Boutwell, of Andover, for 2 baskets of 3 kinds of fine seedling peaches, and a basket of 4 sorts of apples, - - - 2 00
Erastus Ware, of Salem, plates of 6 sorts fine apples, - - - - - 1 00
Professor Emerson, of Andover, dish of fine seedling peaches, - - - - 1 00
Addison Flint, a basket of Isabella grapes, remarkably fine specimens, - - 1 00
Jos. Ober, of Beverly, a basket of sweetwater grapes, of unusual size and beauty, - 1 00
Moses French, of Salisbury, 3 Bartlett pears of large size, from grafts set 5 months since, 50
James H. Duncan, sent for the use of the Society a basket of beautiful chasselas grapes.
A. Moor, of Tewksbury, seedling grapes and peaches; among the grapes are named mammoth blue grape, being of great size and uncommon beauty, they were however rather sour, but might not have been fully ripe, 1 00

Miss Ives sent a handsome basket of fruit. E. N. Eaton, of Andover, sent fine quinces and apples. Apples were also exhibited by Peabody Russell and Joseph Marston; fine apples from Felch Tufts, of Billerica, and very handsome specimens from Samuel Gleason, of Andover. Mr. Gallop sent 8 plates of apples; and plates of apples and quinces were received from Moses Abbott, of Andover.

Messrs Clark and Mullet sent a plate of Bartlett pears.

Dishes of grapes were exhibited by Isaac H. Andrews, of Boxford, Jacob Farnham, of Andover. Mr. Swift, of Andover, and Mr. Andrews Breed, of Lynn, placed on the table some fine specimens of pears, peaches, and apples. There was a handsome plate of egg plums from Daniel Abbott, of Andover, and 4 plates of apples, pears, peaches, and grapes from Samuel Gray, of Andover.

Some of the fruit was placed on the table so late that it may probably inadvertently have escaped the notice of the Committee. The Committee regret that the limited amount placed at their disposal has prevented them from awarding gratuities in all cases where they were deserved. Some remarkable quinces, and a plate of cherry tomatoes, they thought especially worthy of notice.

The exhibition of Flowers was not as large as the Committee could have desired, but among them were some very fine specimens, especially of dahlias, from D. Parker, of Boxford, W. E. Carter, of Cambridge, and George Spofford, of Georgetown. Some very beautiful bouquets, arranged with great taste, and consisting of fine flowers, were placed on the table, by Messrs. Delano, of Andover, Carter, of Cambridge, Sanborn, of Andover, and Marland of Andover.

The Committee award to

Dr. D. Parker, of Billerica, a gratuity of	$1,00
Dr. Sanborn, of Andover,	1,00
Wm. E. Carter, of Cambridge,	1,00
Wm. Delano, of Andover,	1,00
George Spofford, of Georgetown,	1,00

For the Committee,
JOSEPH S. CABOT, Chairman.

ON VEGETABLES.

The Committee on Vegetables, respectfully REPORT:

That the exhibition was deficient in variety — the whole tribe of tap roots being represented by a solitary turnip, and that seemed to belong to no particular owner, though from its dimensions it gave evidence of good cultivation; of beets and carrots there were no specimens. The squash tribe was fully and ably represented, giving ample proof that the coming thanksgiving will be kept in the good old fashion, in spite of the inroads of modern innovation. Six crook-necks by J. B. Barker, Methuen, bore the palm, and a gratuity of $1,00 is

recommended to be paid him. Gratuities of twenty-five cents are also recommended respectively, to Heman Phelps, of Andover, Matthew Putnam, Danvers, Rufus Slocomb, Haverhill, Charles B. Lander, Danvers, Artemas Brown, Andover, John Marland, Andover, Joseph How, Osgood Barnard, Methuen, Jacob Shed, Andover, John M. Ives, Salem, and E. G. Kelly, Newburyport, for their specimens of squashes, comprising the Marrow, the Crook-neck, the Valparaiso, three squashes of an unknown variety, and a pair of united squashes which may be called the Siamese twins of vegetables. The Committee think it not good husbandry to raise squashes of so great size as were those exhibited, that by E. G. Kelly, weighing nearly 90 lbs. The number and quality of squashes from a particular vine, should be objects of greater attention, than their size.

The show of potatoes was very good — and a gratuity of $1,00 is recommended to George Peasle, Boxford, for 1½ bushels of large chenangoes, the product of only two potatoes, planted on reclaimed meadow land, well exemplifying what such soils are capable of yielding. They also recommend a gratuity of $1, to Andrew Dodge, of Wenham, for specimens of three kinds of seedling potatoes — to Josiah Lovett, of Beverly, 50 cents, for seedling potatoes, and the same sum to Peter French, of Andover, for half bushel of long blue potatoes, the product of a single potatoe — also 50 cents to J. G. Wolcott, Danvers, for a string of very large and handsome onions, 25 cents to John M. Ives, Levi Davis, and John Marland, each, for melons, water-melons, cucumbers, tomatoes, and the same sum to N. B. Abbot, for 20 citron-melons, the product of a single vine. Also to Benjamin Boynton, for a specimen of white beans in the pod.

The Committee have only to say in conclusion, that they did not feel justified in recommending larger gratuities, as their limits were apparently set by the Society, to the amount they have reached.

For the Committee,

ALLEN W. DODGE.

ON FRUIT TREES.

The Committee on Fruit Trees respectfully REPORT:

That there were five entries made; three of them were found to come within the conditions upon which premiums are offered, these were from Allen W. Dodge, of Hamilton, Joshua H. Ordway, of West Newbury, and Moses Pettingel, of Topsfield. Mr. Dodge's Nursery, consisting of Apple and Pear Trees, were thrifty, particularly the latter, these having been raised from the seed two years previous to their budding, having had no covering in the winter. Mr. Dodge's paper, giving a particular account of his method of culture, is appended below. Mr. Ordway's Nursery of Apples and Peaches were of good growth, as also his Plums worked upon the Peach root. Mr. Pettingel's Peach Trees were remarkably thrifty and fine.

Your Committee would recommend that the first premium of twenty dollars be awarded to Mr. Dodge, the second of ten dollars, to Mr. Ordway, and the third of five dollars to Mr. Pettingel.

JOHN M. IVES,
ANDREW DODGE,
MOODY ORDWAY,
RICHARD PHILLIPS,
WILLIAM PEIRCE,
} Committee.

ALLEN W. DODGE'S STATEMENT.

To the Committee on Fruit Trees:

GENTLEMEN:—At your request, I send a statement respecting the pear trees, which comprise a part of my nursery entered for the Society's premium. In the fall of 1840 I procured a lot of pumice of the small choke pears, which I sowed in drills on a dry sandy spot of ground. The seed came up well the following spring, and the trees made the first season an average growth of one foot. Being warned by others of the danger to which they would be exposed during winter, I was inclined to use some method to protect them. One ad-

vised to take them up and keep them during the cold weather in the cellar, another proposed to cover them with sea weed or tan — and a third suggested still another course of treatment. As I knew not which method to adopt, I determined to let them take their chance and winter it out just as they stood. The result was, that no injury whatever befel them — not one tree was destroyed by the cold or frost or by any other cause.

The following spring I removed the trees into rows in the nursery, first taking off a part of the tap root. This I found to be of great length, nearly one third longer than the tree itself. This length of root may have kept the trees from being thrown out of the ground by the frost, which, as I am informed, is one principal cause of the destruction in winter of young pear trees. As they make but few lateral roots, they are of course more exposed to such an injury than other kinds of young trees. Now if the tap root strikes deep, it has the stronger hold upon the soil, and if it reaches below the frost, it would seem to be entirely removed beyond its action. My soil being very light, the roots of the trees had no difficulty in extending to the length I have mentioned.

Another benefit, as it seems to me, of a light sandy soil for young pear trees is this — that being so porous it is less retentive of moisture than stiff and strong soils, which is the kind of soils upon which pear trees are usually attempted to be raised. The wetter the soil, the greater would seem to be the action upon it of the frost. It would freeze and thaw, in early spring, with greater violence to the young roots — such soil would heave more than a dry one, and in heaving would at length throw the tree up by the roots and exposed to the winds and weather.

The season after being transplanted, the trees made a vigorous growth. The principal dressing which they received was ashes applied occasionally in small quantities and in its unspent state. In August of that season, the second of their growth, I budded about 600 of the trees — the rest not being of sufficient size for that pur-

pose, were left unbudded. The ground upon which they then and have since stood, is similar to that in which the seed was originally sown — light and sandy — the trees have received no injury whatever from the winter or early spring. I am not aware that a single tree of the lot has ever been thrown up or killed by the frost, and they have never received any protection but from the hand of Nature herself.

My budded trees have made a fine growth the past season — averaging perhaps four feet — some reaching to nearly six feet in height. The trees are healthy and vigorous, and prove most plainly that it is not necessary for us to import pear stocks from France, when they can be raised, as mine have been, at home.

ALLEN W. DODGE.

Hamilton, Nov. 2, 1843.

ON FOREST TREES.

The Committee on Forest Trees, respectfully REPORT:

That the only Plantation of Forest Trees which has been offered for premium the present year is one offered by Mr. Benjamin Poore, of West Newbury. Mr Poore commenced planting forest trees some twenty four years since, but with little success for a number of years. Mr. Poore's Forest is on the southerly side of a steep hill, containing some two or three acres, on which there had been formerly a growth of hickory—he has planted acorns and transplanted trees of two years' growth, from time to time since 1832, from the nursery to this piece of land, on which there is now growing more than two thousand trees of different age and size, some of which are twenty feet in height. Mr. Poore has also a great number of Locust Trees, growing on the margin of his field, where as an experiment he has trenched the land from one to two feet in depth before planting the trees, with good success.

Your Committee are satisfied that Mr. Poore, by the

experiments he has made, and their successful result, is entitled to the highest premium offered on Forest Trees; but as the premiums for forest of oak are confined to white oak and yellow oak, and as the forest of Mr. Poore is principally of the species called black oak, and gray oak, they do not feel authorized to award a premium, but recommend a gratuity of thirty dollars to Mr. Poore.

Respectfully submitted,

ASA T. NEWHALL.

Dec. 1st, 1843.

BENJAMIN POORE'S STATEMENT.

To the Committee on Forest Trees:

GENTLEMEN:—From 1819 to 1831, I made a number of unsuccessful attempts to raise Forest Trees. But in 1832 after witnessing the success that attended planting of Forest Trees in England, I commenced planting acorns on a steep hill side, on pasture land, from which some old hickory trees had lately been removed.

In the same year, I planted acorns in the nursery for the purpose of transplanting to the forest.

I have continued the planting in the forest and nursery and when the trees were two years old, transplanted them to the forest from the nursery.

The spot selected was not favorable, as the snow drifted in large quantities on the trees and has from time to time broken hundreds. Also, at the commencement there was no shelter for them, which is indispensable in raising oaks.

I did not make much show till 1836, and my success that year and since, I attributed mainly to the *shelter* afforded the oaks by bushes that had sprung from the roots of the old walnut trees.

The trees offered for premium partially cover between two and three acres of land too steep for cultivation, and beside hundreds of walnut and other trees, exceed twenty seven hundred, some of which are more

than twenty feet high. We have also, several thousand locust and other forest trees, under a series of experiments to ascertain, if possible, the advantage of trenching and deep ploughing, and also, whether a forest tree is injured by transplanting as for many years it was supposed by writers to be, but so far as my experiments have already gone, it is not injured but rather benefitted. Some years, however, will be required to ascertain these results satisfactorily. I however, annex such directions as I would practise in planting forest trees.

1st. Select such soil as the tree which I intended to propagate grew in, when in forests, to greatest perfection.

2d. Trench or plow the land according to the depth of soil—if two feet deep, trench the land two feet, but if only eight inches of soil, trench not exceeding twelve inches deep, and in same proportion.

3d. Keep the acorns, nuts or seeds in dry sand through the winter, and plant early in spring.

4th. If you transplant from nurseries do it in autumn, soon as the leaf falls. The oak should be transplanted the second autumn after sowing the seed.

5th. For shelter, I would prefer the Scotch larch which I would plant freely. When the oaks are five years old the larch can be removed, and for fuel will amply pay the expense.

6th. Avoid, (a common error) the putting of seed or trees too deep in the earth.

Respectfully,

Your ob't servant,

BENJ. POORE.

Indian Hill Farm, 1843.

ON MULBERRY TREES.

The Committee on Mulberry Trees, having attended to the duty assigned them, by examining the plantation

of Joshua H. Ordway, of West Newbury, the only claimant on that subject, respectfully REPORT:

That Mr. Ordway's plantation of 1500 white mulberry trees, of five to six years' growth, has been well managed, the foliage is luxuriant, and the trees of a large size at the root; we notice particularly his method of keeping them headed down. His practice is to cut them off near the ground early in the spring; by this treatment, as he says, he obtains four times the amount of foliage as when permitted to grow high, as we can readily conceive, and greatly facilitates the work of gathering it, his object being actual silk-growing. He has fed, the past season, 4000 worms, but his trees would undoubtedly have fed 20,000 at twice cropping, of which he is confident, had he been prepared with the proper fixtures. His worms were perfectly healthy, as evidently appeared by the cocoons and the texture of the reeled silk. The silk was principally made into sewings by his sister, Miss Sophia Ordway, and were of superior character. A part of it was twisted directly from the cocoons, without having been first reeled, as is the common mode; all the work was done on a common high wheel. This sewing silk appeared very even, and equally as good as that which was first reeled and then twisted; and the work is thereby greatly expedited. Although Mr. Ordway has fine nurseries, and excellent orchards of various fruits which produce a large income, yet, he is confident his mulberry tree plantation would produce him more profit in raising silk than any of his grounds of equal extent, and he intends extending his silk raising next season. Taking into view the good management of Mr. Ordway's plantation, and the practical use to which he has applied its produce, in raising and making sewing silk, which would probably itself deserve the Society's premium on manufactured silk, (had a claim been entered according to its rules,) we are of opinion he is well entitled to the Society's first premium of *fifteen dollars.*

Your Committee, in making this report, beg to submit for the consideration of the Society the expediency

of confining the premiums in future to those competitors who make the most silk according to their number of trees, or according to the space of ground they occupy as a mulberry plantation, taking into account the actual expense. Thus the object of the Society, which we presume to be the encouragement of actual silk growing in our county, would be likely to be promoted. Many trees may have been raised merely to obtain the Society's premium, and no practical advantages derived for the benefit of the community at large: the trees afterwards destroyed or converted to uses foreign from the object of the Society.

The committee are aware of the small progress that has been made in our county in the silk culture. Still they would not despair of its successful prosecution in our country at large, and that the farmers of Essex may do their part when the subject shall be better understood, and emerge from its present infancy.

The great violence that was done to this enterprise by the late famous "*multicaulis speculation*," which came nigh destroying it when only in its embryo, has delayed its progress; trees were then raised with very little expense and chaffered about for sale merely on speculation, holding up to view extravagant prospects of profits which no man of sense could expect to realize; the tree itself was brought into disrepute, and an odium cast upon the silk culture by which it became a subject of even ridicule. Many abandoned the project for fear of encountering the obloquy cast upon it, and it became dangerous to the reputation of a person to say a word in its favor.

The committee, in proposing a discontinuance of the premiums on merely raising mulberry trees, would not recommend imitating the narrow policy of some of our sister States as well as that of our own honored Commonwealth, by neglecting to continue the bounty on silk, thus endangering the bantling hitherto led by the hand, by quitting our hold before it shall have acquired sufficient strength to bear its own weight. Feeling confident that by still assisting and patronising it, (in our

climate which is so congenial to its culture,) it will one day arrive to that state of manhood which will enable us to countervail the immense sums now expended for foreign silks. All which is respectfully submitted.

For the Committee,

TEMPLE CUTLER.

Hamilton, Oct. 2, 1843.

ON SILK.

The Committee on Silk having examined such specimens of Silk, manufactured and raw, as were exhibited, REPORT:

That Amos P. George, of West Newbury, has exhibited specimens of well manufactured sewing silk, and one pound of raw reeled silk, with several very good cocoons of the pea nut kind. Mr. George's sewing silk appeared rather fine for most uses, but was even and good; his raw silk in the gum was well reeled. His statement, though not so full as we should wish, may be useful for the aid of other silk growers.

As Mr. George's statement was not so much in detail in describing his whole mode of manufacturing as the Committee would have wished, they recommend that a gratuity of eight dollars be paid him.

Priscilla P. Atwood, of East Bradford, exhibited a small quantity of fine specimens of sewing silk.

We recommend a gratuity of two dollars be paid her.

Mr. A. More, of Tewksbury, Middlesex County, exhibited two kinds of cocoons of very good quality, the white and the sulphur, but no statement presented.

For the Committee,

TEMPLE CUTLER.

AMOS P. GEORGE'S STATEMENT.

To the Committee on Silk:

GENTLEMEN:—I present for your inspection a quantity of silk raised and manufactured by myself this year.

The eggs were placed on a table in a warm room; they began to hatch the 9th of June, and finished in four or five days. The worms finished feeding in twenty-eight days. There were but few unhealthy worms, and they were taken away immediately. During the first stages they were fed from three to four times a day; during the last, from four to five times. The food on which they were fed was principally the white mulberry leaf; the number fed was about 15,000. They spun partly on oak branches with leaves on, and partly on frames placed over them for the purpose. The worm was killed by steaming. The raw silk presented contains from seven to fourteen threads from the cocoon; the manufactured contains forty-three threads from the cocoon. The twenty-five skeins presented were made from one hundred and twenty cocoons; the quantity of raw silk presented contains 16 oz. avoirdupois.

Yours with respect,

AMOS P. GEORGE.

West Newbury, September, 1843.

ON MANUFACTURES.

The Committee on Domestic Manufactures have attended to the duty assigned them, and offer the following REPORT:

The exhibition of this year may be considered superior to the last, both in the quality and number of articles exhibited.

The Committee have awarded the following premiums and gratuities — viz:

PREMIUMS.

Carpetings.

Moses True, jr., East Salisbury, 1st premium,	$ 5	00
Phœbe Ballard, Andover, 2d premium,	3	00

Hearth Rugs.

Mrs. George C. Varney, of Salem, 1st premium,	3	00
Lucretia Hildreth, Beverly, 2d premium,	2	00

Flannels.

Sarah Swan, Andover, 2d premium, - 2 00

Hose.

Mrs. Ebenezer King, Danvers, 1st premium, 2 00
Hannah Jacobs, Danvers, 2d premium, - 1 00
Mary Taylor, Danvers, for half hose, - 1 00

Linen Cloth.

Mrs. Samuel Newman, Newbury, 2d premium, 2 00

Counterpanes.

L. Maria Phelps, Andover, 1st premium, - 4 00
Mrs. Mary G. Abbott, Andover, 2d premium, 2 00

Wrought Lace

Elizabeth Blanchard, Andover, 1st premium, 3 00
Mary H. Smith, Andover, 2d premium, - 2 00

Wrought Work, by Children under twelve years of age.

Henrietta Carroll, Beverly, - - 3 00
Adeline Sheldon, Beverly, - - 2 00

Boots.

L. Farnham, Andover, thick boots, - - 3 00
Gilman Barnard, Andover, calf boots, - 4 00

GRATUITIES.

Hearth Rugs.

Hannah Harding, Andover,
Mrs. A. S. Mansfield, Lynnfield,
Mehitable Ballard, Andover,
M. D. Hodges, Newburyport,
Elizabeth S. Coatney, Ipswich,
Hannah W. Ober, Beverly,
Elizabeth Abbot, do
S. C. New, Andover,
Abigail Lunt, Newbury,
S. B. Moulton, do
Catherine S. Couch, Newburyport,
Mary S. Gordon, Amesbury,
Mary Poor, Newbury,
Sarah W. Berry, Middleton,
Mrs. Wm. Kendall, Georgetown, and
Mary A. Winning, Andover,—each - - 1 00

Various Articles.

Sarah Lunt, Newbury, carpet, - -	2 00
Mary T. Gordon, Amesbury, wrought do	2 00
Sarah Loring, Andover, rag carpet, -	1 00
Moses True, Jr., E. Salisbury, hearth rug,	1 00
Caleb Peirce, Salem, sheep skin mats, very superior, - - - - -	2 00
Althea Dole, Methuen, wool hose, -	1 00
Nancy Cleaves, Beverly, worsted do, -	1 00
Lucretia D. Cheever, Danvers, 2 knit bags,	1 00
Caroline M. Abbott, Andover, wrought traveling bag, - - - - -	2 00
Caroline R. Jackson, do do do	1 00
Miss E. Saunders, do, wrought stool cover,	1 00
Mrs. Worcester, Danvers, hair work, -	1 00
E. L. Hodges, Andover, several articles of wrought work, - - - -	1 00
Elizabeth M. Dodge, Newburyport, wrought work, - - - - -	1 00
Hannah Whittredge, Beverly, cricket cover, very fine, - - - - -	1 00
Abigail Carter, Andover, (blind from birth,) wrought work, - - - -	2 00
Ballard Vale Company, very superior white and colored crewel, ent'rd for exhibition.	
Caroline M. Abbott, Andover, music stool,	1 00
Miss E. A. Hills, Newburyport, wrought shawl,	1 00
David Styles, Middleton, horse shoes, -	1 00
Aaron Sawyer, Andover, elliptic springs & haimes,	1 50
Wm. P. Endicott, Salem, fire screen, -	1 00
Mrs. E. G. Kelly, Newburyport, tabouret,	1 00
Elizabeth W. Abbott, several beautiful specimens of painting in oil and water colors, some of them miniature portraits, and said to be very correct likenesses. These specimens are regarded by the committee as evidence of great promise to the artist, of future eminence in this pleasing department of art, - - -	2 00
Jacob Shed, Andover, dressed sheep skins,	1 00

Mary L. Peabody, Topsfield, specimens of crewel work, - - - - -	1 00
Mary Ann Saunders, Andover, rug work and bed spread, - - - - -	2 00
A. S. Mansfield, beautiful shell work, -	1 00
Mary L. Peabody, Topsfield, lamp stand,	50
S. L. Hildreth, Beverly, knit handkerchief,	50
Elizabeth H. Whitney, 9 years old, Danvers, wrought shawl, - - - -	50
Mrs. Otis Mudge, Danvers, counterpane,	1 00
Isaac M. Hardy, Andover, ladies' walking shoes,	50
Daniel Saunders, do. 2 pieces frocking,	1 00

For the Committee,

F. POOLE, Chairman.

LIST OF

PREMIUMS AND GRATUITIES,

AWARDED IN 1843.

Butter.

William R. Putnam, Wenham, for	June Butter, 1st premium,	$10 00
David S. Caldwell, Newbury,	do do 2d do	8 00
Nathaniel Felton, Danvers,	do do 3d do.	6 00
Nathaniel Felton, do.	September Butter, 1st premium,	10 00
David Hidden, Andover,	do do 2d do.	8 00
William R. Putnam, Wenham,	do do 3d do.	6 00
Gardner B. Perry, Bradford,	do do gratuity,	2 00

Cheese.

D. P. Stevens, Andover, 1st premium,	10 00
Benjamin Boynton, do. 2d do.	8 00
Lucy Osgood, do. gratuity,	2 00

Ploughing—Double Teams.

Moses Pettingill, Topsfield, 1st premium,	12 00
Henry Cummings, Andover, 2d do	10 00
Jos. Chandler, do 3d do	8 00
Dean Robinson, West Newbury, 4th do	6 00

Single Teams.

Perley Tapley, Danvers, 1st premium,	10 00
Alanson Flint, Andover, 2d do	8 00
Moody B. Abbott, do. 3d do	6 00
Charles Foster, do. 4th do	4 00

Ploughing—Horse Teams.

John Marland, Andover, 1st premium,	8 00
Samuel M. Barker, do 2d do	6 00
John A. Stevens, Methuen, gratuity,	5 00

Working Oxen.

Eben'r Jenkins, Methuen, 1ts premium,	10 00
Andrew F. Curtis, Middleton, 2d do	7 00
Perley Tapley, Danvers, 3d do	5 00

Working Steers.

Jedediah H. Barker, Andover, 1st premium,	7 00
Ralph H. Chandler, do gratuity,	2 00
Amos P. Swinnerton, Danvers, do	2 00
Charles Foster, Andover, do	2 00

STEERS—3 YEARS OLD.

Jedediah H. Barker, Andover, 1st premium,	7 00
Isaac Osgood, do 2d do	5 00

STEERS—2 YEARS OLD.

Jacob Farnham, Andover, 1st premium,	6 00
Charles Foster, do 2d do	4 00

STEERS—1 YEAR OLD.

Joseph Kittredge, Andover, 1st premium,	4 00
Samuel F. Barker, do 2d do	2 00

FAT CATTLE.

Alexander Davidson, Andover, 1st premium,	15 00
John Barker, do 2d do	10 00
Eben Burrill, Lynn, 3d do	5 00
John Marsh, Danvers, gratuity,	3 00
Moody Andrews, Topsfield, do	3 00

BULLS

William S. Marland, Andover, 1st premium,	10 00
Josiah Crosby, do 2d do	8 00
Benjamin Poore, West Newbury, 3d premium,	6 00
Samuel F. Barker, Andover, 4th premium,	4 00
Charles B. Lander, Danvers, gratuity,	3 00
James Stevens, Andover, do	2 00
Hobart Clark, do do	1 00

MILCH COWS.

Farnham Spofford, Andover, 1st premium,	10 00
Abiel Russell, do 2d do	7 00
N. A. Prentiss, do 3d do	5 00

HEIFERS.

Charles B. Lander, Danvers, 1st premium,	7 00
Samuel C. Jackson, Andover, 2d do	5 00

COLTS.

Elijah Pope, Junior, Danvers, gratuity,	5 00
James A. Dodge, do. do.	4 00
Alexander Davidson, Andover, do.	3 00

SWINE.

William Williams, Rowley, sow, 1st premium,	5 00
Sylvester Goodwin, Andover do. 2d do.	3 00
William Williams, Rowley, weaned pigs, 1st premium,	6 00
William S. Marland, Andover, do. do. 2d do.	3 00
William S. Marland, do. boar, 1st do.	5 00
Samuel F. Barker, do. do. 2d do.	2 00

SHEEP.

Joseph Marshall, Ipswich, gratuity,	10 00
George Spofford, Georgetown, do.	5 00
Elijah Pope, Junior, Danvers, do.	3 00

FOREST TREES.

Benjamin Poore, West Newbury, 1st premium,	30 00

IMPROVED AGRICULTURAL IMPLEMENTS.

Isaac Clapp, Dorchester, gratuity,	10 00

VEGETABLES.

J. D. Barker, Methuen, gratuity,	1 00
George Pearle, Boxford, do.	1 00
Andrew Dodge, Wenham, do.	1 00
Josiah Lovett, Beverly, do	50
Peter French, Andover, do	50
John G. Wolcott, Danvers, do	50
John M. Ives, Salem, do	50
John Marland, Andover, do	25
Lewis Davis, do do	25
N. B. Abbott, do do	25
Benjamin Boynton, do do	25
Heman Phelps, do do	25
Artemas Brown, do do	25
Jacob Shed, do do	25
Osgood Barnard, do do	25
Matthew Patterson, Danvers, gratuity,	25
Charles B. Lamb, do do	25
Joseph How, Methuen, do	25
E. G. Kelly, Newburyport, do	25
Rufus Slocumb, Haverhill, do	25

FRUIT

Andrew Dodge, Wenham, gratuity,	2 00
Joseph Howe, Methuen, do	2 00
John M. Ives, Salem, do	2 00
George Boutwell, Andover, do	2 00
Erastus Ware, Salem, do	1 00
Professor Emerson, Andover, do	1 00
Addison Flint, Reading, do	1 00
Jos. Obear, Beverly, do	1 00
A. Moore, Tewksbury, do	1 00
Moses French, Salisbury, do	50

FLOWERS.

Doctor Sanborn, Andover, gratuity,	1 00
Doctor D. Parker, Billerica, do	1 00
William E. Carter, Cambridge, gratuity,	1 00
William Delano, Andover, do	1 00
George Spofford, Georgetown, do	1 00

CARPETING

Moses True, jr., Salisbury, 1st premium,	5 00
Phebe Ballard, Andover, 2d do	3 00
Sarah Lunt, Newbury, gratuity,	2 00

Mary T. Gordon, Amesbury, gratuity,	2 00
Sarah Loring, Andover, do	1 00

HEARTH RUGS.

Mrs. George C. Varney, Salem, 1st premium,	3 00
Lucretia Hildreth, Beverly, 2d do	2 00
Moses True, jr., Salisbury, gratuity,	1 00
Hannah Harding, do	1 00
Mrs. A. S. Mansfield, Lynnfield, gratuity,	1 00
Mehitable Ballard, Andover, do	1 00
M. D. Hodge, Newburyport, do	1 00
Elizabeth S. Coatney, Ipswich, do	1 00
Hannah W. Ober, Beverly, do	1 00
Elizabeth Abbott, do do	1 00
S. C. New, Andover, gratuity,	1 00
Abigail Lunt, Newbury, do.	1 00
S. B. Moulton do. do.	1 00
Catharine S. Couch, Newburyport, gratuity.	1 00
Mary S. Gordon, Amesbury do.	1 00
Mary Poor, Newbury, do.	1 00
Sarah W. Berry, Middleton, do.	1 00
Mrs. William Kendall, Georgetown, do.	1 00
Mary A. Winning, Andover, do.	1 00

WOOLEN CLOTH.

Sarah Swan, Andover, 2d premium,	2 00

WOOLEN HOSE.

Althea Dole, Methuen, gratuity,	1 00
Nancy Cleaves, Beverly, do.	1 00

HOSE.

Mrs. Eben'r King, Danvers, 1st premium,	2 00
Mrs. Hannah Jacobs, do. 2d do.	1 00
Mrs. Mary Taylor, do. gratuity,	1 00

COUNTERPANES.

L. Maria Phelps, Andover, 1st premium,	4 00
Mrs. Mary G. Abbott, do 2d do	2 00
Mrs. Otis Mudge, Danvers, gratuity,	1 00

BAGS.

Lucretia D. Chever, Danvers, gratuity,	1 00
Caroline M. Abbott, Andover, do	2 00
Caroline R. Jackson, do do	1 00

WROUGHT LACE.

Elizabeth Blanchard, Andover, 1st premium,	3 00
Mary H. Smith, do 2d do	2 00

WORK BY CHILDREN.

Henrietta Carroll, Beverly, 1st premium,	3 00
Adeline Shelden do 2d do.	2 00

MISCELLANEOUS MANUFACTURES.

Mrs Samuel Newman, Newbury, linen cloth,	2d premium,		2 00
L. Farnham, Andover, thick boots,	1st	do	3 00
Gilman Barnard do calf boots,	1st	do	4 00
Caleb Peirce, Salem, sheep-skin mats,	gratuity,		2 00
Jacob Shed, Andover, dressed sheep-skins,	do		1 00
Miss E. Saunders, Andover, wrought stool cover,	gratuity,		1 00
Mrs. Worcester, Danvers, hair work,		do	1 00
E. L. Hodges, Andover, wrought work,		do	1 00
Elizabeth M. Dodge, Newburyport, wrought work,		do	1 00
Hannah Whittredge, Beverly, cricket cover,		do	1 00
Abigail Carter, Andover, wrought work,		do	2 00
Caroline M. Abbott, do music stool,		do	1 00
E. A. Hills, Newburyport, wrought shawl,		do	1 00
David Styles, Middleton, horse shoes,		do	1 00
Aaron Sawyer, Andover, elliptic springs and haimes,		do	1 50
Wm P. Endicott, Salem, fire screen,		do	1 00
Mrs. E. G. Kelly, Newburyport, tabouret,		do	1 00
Elizabeth W. Abbott, Andover, beautiful paintings,		do	2 00
Mary L. Peabody, Topsfield, crewel work,		do	1 00
Mary Ann Saunders, Andover, rug work and spread,		do	2 00
A. S. Mansfield, do shell work,		do	1 00
Mary L. Peabody, Topsfield, lamp stand,		do	50
S. L. Hildreth, Beverly, knit handkerchief,		do	50
Elizabeth H. Whitney, Danvers, wrought shawl,		do	50
Isaac M. Hardy, Andover, ladies' walking shoes,		do	50
Daniel Saunders, do two pieces frocking,		do	1 00
Amos P. George, W Newbury, best manufactured silk,		do	8 00
Priscilla P. Atwood, Bradford, sewing silk,		do	2 00
			$549 25

In addition to the premiums awarded at the Annual Exhibition, amounting to five hundred and forty-nine dollars and twenty-five cents, the following premiums have been awarded by a vote of the Trustees:

Joshua H. Ordway, West Newbury, mulberry trees,	1st premium,		15 00
Allen W. Dodge, Hamilton, nursery of fruit trees,	1st	do	20 00
Joshua H. Ordway, West Newbury, do do	2d	do	10 00
Moses Pettingel, Topsfield, do do	3d	do	5 00
Ruggles & Co., Boston, best plough,	1st	do	12 00
Josiah Newhall, Lynnfield, reclaimed meadow,	1st	do	20 00
Asa T. Newhall, do mixed crops,	1st	do	10 00
			$ 92 00
Amount brought down,			549 25
			$641 25

Attest, ALLEN W. DODGE, *Secretary.*

Hamilton, Jan. 4, 1844.

Dr. *William Sutton, Treasurer, in account with the Essex Agricultural Society.* *Cr.*

1842.					1842.		
Sept. 27.	To balance of Cash on hand,			107 16	Sept.	By Premiums and Gratuities awarded,	665 50
1843.						*By Expenses:*	
Jan. 20.	To State Bounty,			600 00		Wm. Brown, for printing Pamphlets, 174 80	
1842.						Expenses of Exhibition, 59 91	
Oct.	To Dividends,	163 00				Wm. Ives & Co, printing, 16 09	
1843.						Secretary's Salary, 50 00	
April	" "	103 00					300 80
			266 00			By Cash on hand,	76 36
	" Amount received of new members,		42 00				
	" Premiums unclaimed, $12,50; refunded by Hood, $15,00,		27 50				
			$1042 66				$1042 66

FUNDS ON HAND.

19	Shares in Warren Bank, par value,			1900 00	12 shares Lynn Mechanics Bank, cost		1140 00
12	" Exchange, " " "			800 00	A Note signed by Benj. Goodridge and al,		318 59
11	" Commercial " " "			733 33	" " " Jno. Nutting, secured by a mortgage,		500 00
3	" Salem " " "			300 00	Cash on hand, as above,		76 36
7	" Mercantile " " "			700 00			$7,568 28
6	" Merchants " " "			600 00		Last year,	7,599 08
5	" Village " " "			500 00			

SALEM, Sept. 27, 1843. (E. E.) WILLIAM SUTTON, *Treasurer.*

DECEMBER 12, 1843. We have examined the items of the foregoing account, and find them correctly stated and properly vouched.

We further find the entire amount of Receipts for the year ending Sept. 27, 1843, ... $908 00

" " " Expenses " " " " " " 938 80

Balance against the Society for the year, ... $30 80

FREDERICK HOWES, } *Auditors.*
JOHN W. PROCTOR, }

OFFICERS OF THE SOCIETY,

CHOSEN SEPTEMBER 27, 1843.

LEVERETT SALTONSTALL, of Salem, *President.*
DANIEL ADAMS, 3d., of Newbury,
JOHN W. PROCTOR, of Danvers,
SOLOMON LOW, of Boxford,
ASA T. NEWHALL, of Lynnfield. } *Vice Presidents.*
WILLIAM SUTTON, of Salem, *Treasurer.*
ALLEN W. DODGE, of Hamilton, *Secretary.*

TRUSTEES:

Jedediah H. Barker,	*Andover.*	*Josiah Kimball,*	*Boxford.*
Andrew Nichols,	*Danvers.*	*Joseph Kittredge,*	*Andover.*
Jeremiah Colman,	*Newburyport.*	*Royal A. Merriam,*	*Topsfield.*
George Hood,	*Lynn.*	*Moses Newell,*	*West Newbury.*
Moses French,	*E. Salisbury.*	*Dean Robinson,*	" "
Andrew Dodge,	*Wenham.*	*Asa Nelson,*	*Georgetown.*
James H. Duncan,	*Haverhill.*	*Ira Worcester,*	*Ipswich.*
Nathaniel Felton,	*Danvers.*	*Hobart Clark,*	*Andover.*
Nathan W. Hazen,	*Andover.*	*Horace Ware,*	*Marblehead.*
Joseph How,	*Methuen.*	*Daniel P. King,*	*Danvers.*
Frederick Howes,	*Salem.*	*Josiah Newhall,*	*Lynnfield.*
Asahel Huntington,	*Salem.*	*William S. Marland,*	*Andover*

MEMBERS ADMITTED IN 1843.

John C. Lee,	*Salem.*	*Joshua H. Ordway,*	*West Newbury.*
Henry A. Bodwell,	*Andover.*	*Moody Ordway,*	" "
Paul P. Pillsbury,	"	*Horace Ware,*	*Marblehead.*
Elijah Pope, Jr.,	*Danvers.*	*Ira Worcester,*	*Ipswich.*
Luther Wait,	*Ipswich.*	*Asa Nelson,*	*Georgetown.*
Joseph F. Ingalls,	*Methuen.*	*Alfred Kittredge,*	*Haverhill.*

Any citizen of the County may become a member of the Society by paying to the Treasurer three dollars. Members are not liable to any assessment.

INDEX.

TRANSACTIONS

OF THE

ESSEX AGRICULTURAL SOCIETY,

FOR

1844.

VOLUME III.—NUMBER V.

PUBLISHED BY ORDER OF THE SOCIETY,

JANUARY, 1845.

SALEM:

PRINTED AT THE GAZETTE OFFICE,

1845.

MR. PROCTOR'S ADDRESS.

Gentlemen:

The invitation to address you, on this the *Farmer's holyday*, has been accepted by me, with much hesitation. Not because I doubt the propriety of the occasion, or the importance of the objects for which you have assembled; but because I feel my inability to present anything of value or of interest, to experienced men like yourselves, on a subject which has been exhausted by the varied illustrations of the most gifted minds, and which more than all others demands personal knowledge of facts.

I have seen just enough of farming, to learn, that no man can fully understand the profession of a farmer, without serving an apprenticeship for more than one term of seven years in the actual use of the farmer's implements. I know that much may be learned from books, and the various publications that are daily issuing from the press; that many of these contain the best experience of those most competent to instruct; the *essence* of agricultural science;—but to determine *when* and *how* this essence is to be administered, here is the difficulty.

This knowledge can only be attained by actual labor; by putting the hand to the plough—the shoulder to the wheel—and the hoe to the surface. As soon should I expect a man to be skillful in the management of a ship, who had never been upon the water; or expert in chemical experiments, who had never been in a laboratory; as to understand the necessary processes of farming, without actual personal experience in them.

To this experience I make no pretensions. What I

learnt, when a boy, under the direction of a father who was then considered a good farmer, is now so far obsolete, that it may not be used. I therefore hope you will pardon my presumption in presenting such views, as I have been able to cull from the experience of others. If I can be so fortunate as to make any suggestions that may not before have occurred to you;—or to present any reasons for a reconsideration of the opinions heretofore entertained, I shall feel myself amply rewarded. Having been somewhat intimately connected with the concerns of this Society from its commencement, I did not feel at liberty to withhold any effort in my power to advance its interests.

We have come together as farmers, on this anniversary, to compare the results of our experience, and if possible to mutually aid and instruct each other. I trust the audience will bear in mind the remark of the learned President Quincy, "that in the every day labors of agriculture, there is something too rough for a polished discourse,—too common for one that is elevated,—and too inseparable from soil and its composts, to be treated to the general ear, without danger of offence to that fastidiousness of fancy, which is miscalled refinement."

It will be my endeavor to present such ideas as have occurred to me as pertinent, in the plainest possible manner, without any attempt at rhetorical flourish or imaginative ornament. Such ornaments would be as misplaced, at a business meeting of farmers, as would a ruffle shirt or a gold ring, on the person actually employed in digging a ditch—or any other labor of the field.

It is about one quarter of a century since this Society was organized. By the generous contributions of its members; the fostering bounty of the State; and the fidelity of those who have managed its concerns, it has continued strengthening with its years, making liberal appropriations annually, always limiting its expenses within its income. In so doing, it has set an example to farmers generally, worthy of imitation.

Most of those who were active at its commencement, have either ceased from their labors entirely, or are now reminded by their whitening locks and tremulous limbs, that their places are soon to be filled by younger and more efficient laborers;—enough of whom we hope will always be found ready to enlist in so reasonable a service. Here let me remind the young men of the County, that the honor of worthily wearing a certificate of membership in this Society is quite as creditable as the most glittering *tinsel* or splendid *plume* that ever was mounted.

It has seemed to me that a retrospective view of the Agriculture of the County during this period might be an appropriate theme for this occasion. By comparing the condition of our farms as they then were, with what they now are; by contrasting the modes of culture then pursued with those now most approved; by setting side by side the implements of husbandry used by our fathers with those now in use;—we may see whether or not encouragement is offered for perseverance in our exertions. We want the history of the past, because "it is pleasant to call to recollection efforts originating in good intentions and directed with generous regard to the common good." We want it, because the history of the past is "the only sure guide" for the future.

In whatever we engage, it is well occasionally to examine the grounds on which we stand, and to state the account of profit and loss. In this way alone, can any business be safely and understandingly-pursued.

This Society received its first and best impulses from its first President, the venerable TIMOTHY PICKERING. Retired from the agitating scenes of public life, and the harassing excitements of political controversy, he applied the energies of his powerful mind to his favorite pursuit, agricultural improvement. For this he had ever entertained a strong inclination,—and from his early years, by observations and experiments, had been storing up facts for future application.

Notwithstanding others may have done much to advance its interests, it is not too much to say of him, that

he did more than all others. Having had the privilege of his intimate acquaintance for ten years or more, as secretary, and as his associate on the committee for viewing farms, I speak with confidence of what he did:—and I take pleasure in acknowledging that my admiration of his example in this pursuit, has ever had a strong influence on my own mind in its favour.

The first movements towards the establishment of the Society, as I am informed, were made in 1818, by about twenty practical farmers assembled at Topsfield,* who unanimously invited Col. Pickering to be their President. He may be said to have prepared the soil,—furnished and planted the seed, which others have only cultivated. He was a careful observer of nature, and drew wise lessons from his own untaught experience. He was never satisfied with superficial inquiry, but carefully looked into the connection between cause and effect. Because a practice had been continued for a series of years, was not a sufficient reason for his adopting it. Always ready to receive suggestions from others, he would cheerfully yield his assent, when convinced of their utility. He was a man who thought for himself, and bowed to no man as his master. A reference to many of the maxims that he uttered, and plans that he advocated, will show that he was in advance of the age in which he lived. I have ever esteemed the hints and observations that fell from him at our meet-

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* The names of the gentlemen who constituted this meeting, were,

John Adams *of Andover.*	Aaron Perley *of Boxford.*
Hobart Clark "	John Peabody *of Topsfield.*
Robert Dodge *of Newbury.*	Ichabod Tucker *of Salem.*
Temple Cutler *of Hamilton.*	Enoch Tappan *of Newbury.*
David Cummins *of Salem.*	Stephen Tappan "
Paul Kent *of Newbury.*	Jacob Towne, Jr. *of Topsfield.*
James Kimball *of Bradford.*	Eleazer Putnam *of Danvers.*
Elisha Mack *of Salem.*	Andrew Nichols "
Orlando B. March *of Newbury.*	Daniel Putnam "
Stephen Mighill *of Rowley.*	George Osgood "
Amos Perley *of Boxford.*	

Incorporated June 12, 1818. The first Exhibition was at Topsfield, in October, 1820.

ings, and in our journeys to visit the farms of the County, as among the most valuable lessons ever taught to the farmers of Essex. I know of no man in Massachusetts, unless I may except Mr. Lowell, of Roxbury, who did more to elevate the character of the farmer, and instruct him in his vocation. Fortunate were our farmers, in having devoted teachers, like these, with souls above all sinister purposes, and a readiness to communicate that knew no bounds. At an age when most men think their labors should be ended, he was in his prime in handling the plough, and instituting new experiments. He was not ashamed to soil his hands or his clothes with the labors of the field. He felt it no disgrace to work with those who work. In whatever he engaged, he always took the part of the *working man*. On the farm he was on a level with the farmer,—in the Senate there was none his superior.

Many who hear me, cannot but remember the simplicity, energy and propriety, with which he spoke on every subject that was introduced; and no one who listened to him with attention could fail to have been instructed by his remarks. He did not speak to display his own acquirements, but to instruct his hearers. And while all others were admiring his superior wisdom, he himself was the only one not conscious of it. Like Franklin he always had some story to the point, some illustration so apposite, that it would make an impression that would be remembered. To these lessons, thus artlessly and informally given, among the thinking, practical men in all parts of the County, do I attribute the *germs* of improvement, that have since been developed.

In taking a general view of the present state of cultivation within the County, it must be admitted, that much, very much remains to be done. That there is no *one town*, and scarcely any *one farm*, that has been made to yield more than half it is capable of yielding. But it cannot be denied, I think, that important improvements have been introduced within a few years;—that much more enlightened views of culture are becoming

prevalent;—that a spirit of inquiry is awakened that will be productive of good results;—and that the origin of many of these benefits may be traced to the influence of Agricultural Associations.

Look for example to the improved implements that have been brought into use, and particularly the ploughs, since the first trials at our Exhibitions;—and if you remember those then in use, bring to recollection their forms, for I presume none such can now be found, (certainly not in the use of any one who has any claim to be considered a respectable farmer) and compare them with those now seen and used. Will any one for a moment hesitate to acknowledge the great superiority of the patterns of ploughs presented at our Exhibitions for two years last past. Superior in every point of view, both as to the manner in which the work is finished, and the ease with which it is done by man and beast, I cannot doubt at all, that one third part of the labor necessary in this department of farming may be saved by these improvements.

I am not unmindful of the variety of opinions that exists as to the best model for a plough; that what will be highly esteemed by one, will be thought worthless by another. So great is the variety of work to be done by the plough, and so various are the modes of performing it, that it is necessary to settle in the first place, how the furrow is to be *cut* and *laid*, and then select the implement that will do it in the best manner. This having been done, notwithstanding the sneers of foreigners upon our yankee implements,* I say with confidence, it will be difficult to construct ploughs better adapted to the purpose, than some we now have.

Possibly there may be those who will admit the fact of the superiority of the implements, but still deny that

* This remark alludes to the account of a trial of ploughs lately in England, at which the American Ploughs are spoken of as altogether inferior to the English Ploughs. The American ploughs are designed to cut a *wide* furrow and lay it *flat;* the English ploughs are designed to cut a *narrow* furrow, and set it *on edge*, at an angle of 45°;—each good for the object in view, but not calculated for a different object. The English ploughs and the Scotch ploughs, that I have seen, for our work, are far inferior to our own.

this superiority is the consequence of these Exhibitions. To my mind it is a direct consequence. The premiums offered operated as a stimulus for improvement, and elicited ingenuity in the introduction of such improvements. One improvement paved the way for others; —different artists endeavored to excel each other,— and thus by compounding and combining the better points of each, have the present perfect implements been perfected. Our farmers seeing the superiority of these implements at these Exhibitions, have promptly seconded the movements of the makers, and brought them into use in the community. If no other benefit had accrued from the Exhibitions, than the introduction to general use, of the improved ploughs, it might well be contended that the balance would be in their favor.

It is now well understood that one of the most valuable improvements in the structure of the plough that has been made, consists in forming the mould board so that it will pass through the furrow with least resistance, laying it smooth without being liable to clog. Col. Pickering states that forty years ago, while in Pennsylvania, he observed this characteristic in the plough. Afterwards, in a conversation with Mr. Jefferson, he found that he had noticed the same thing, and made a communication on the subject to the Philosophical Society. Col. P. describes the rule of construction as follows:—

"Having fixed a straight line, by one cut of a saw "from the upper corner of the mould board behind to "its point forward,—cut away the wood above and be- "low that line in such manner, that when finished if "you carry a straight rule from the fore to the hind "part, keeping it all the way at right angles with the "straight line, it shall touch the face of the mould "board, in its whole breadth, in straight lines, through "its entire winding, so that its upper corner behind shall "overhang the lower sufficiently to effect a complete "turning of the furrow slice."

Thus you see the best minds have condescended to notice small things; and by so doing, have done a more

valuable service to the country at large, than has been realized from the expenditure of millions in preparation for the destruction of our fellow beings.

In connection with the structure of ploughs best adapted to our use, allow me for a moment to ask your attention to the *sub-soil plough*, with which I presume you are but little, if any acquainted. Although known for years in Europe, and in some parts of our own country, I am not aware that it has been much used in this County. It is made to follow in the furrow directly after the common surface plough, loosening and moving the earth to the depth of six or eight inches below the first furrow, without bringing any part of it to the surface. The advantage to be derived from such loosening is, that the superabundant moisture settles down to the bottom of the furrow, and there is a constant operation of the atmosphere which gradually converts it into productive soil. It thus produces all the benefits of deep ploughing, without the disadvantage of the admixture of an undue proportion of unproductive ingredients in the soil. The soil thus moved will afford space for the extension of the roots or fibres of the plants, so that in seasons of drought, they will be less likely to fail. And the ultimate consequence will be, if the land is properly manured, an additional depth to the soil,—say instead of 6 or 7 inches, there will be found 10 or 12 inches. For root crops, and many others, such an alteration must be of great value. Where this process of sub-soil ploughing has been tried for a number of years successively, and the sub-soil has been gradually mixing with the upper soil, the whole has been found so completely changed, as to be capable of producing crops that could not before have been cultivated to any advantage.

Mr. Phinney of Lexington, to whom the agricultural community are under great obligations for his numerous and well conducted experiments, particularly those in the management of grass lands, first brought the sub-soil ploughs into use in this vicinity, about *three* or *four years since.* The pattern then used has been much im-

proved by different manufacturers—some specimens of which have this day been exhibited and tried. I learn that several farmers in the county have been trying these ploughs, on their farms the present season. Mr. Phinney, who has used this plough on many acres of his own farm, informed me that the productive quality of his soil, for many crops, had been increased fifty per cent by its use.* On a question of practical cultivation there is no man's opinion more worthy of regard. Are there not many acres of the flat lands in Ipswich, Newbury, Andover, and other towns in the County, that might be greatly improved by this process? Are there not many acres that for want of it have heretofore been considered of very little value? Certain it is, that the most casual observer, as he passes along through the County, sees four

* In a recent letter received from Mr. Phinney, he says, "I have used the sub-soil plough some three or four years, and such is the estimate in which I hold this important implement, that I should consider it a great piece of improvidence to put in a crop, without first subsoiling the ground. The character of *our soil* and *climate* are both such, being subject to the extremes of wet and dry, as to render the use of the sub soil plough of more essential benefit here than in England, and if *one half* the effects from its use, said to be produced in that country, are realized here, no farmer should be without a sub-soil plough.—The substratum with us is either a hard gravel or clay. Both are greatly benefitted by the use of this plough. In case of too much wet, the redundancy of water is absorbed by loosening the sub-soil—when too dry the plants can find support by being enabled to extend their roots deeper in search of moisture. Our crops, particularly our potatoes and other *root crops* as they are called, often suffer from droughts that almost invariably occur in our climate in August or September. A failure of these crops is oftener owing to this than any other cause. Without resorting to the test of experiment, can any rational farmer doubt that this obstacle to the productiveness of our soil may be, in a great measure overcome by loosening the subsoil. In our old fields, which have been cultivated for many years, with the use of no other than the common plough, an *under crust* has been formed by the travelling of the oxen and movement of the plough for a long time, at a few inches below the surface. This is generally so hard as to be impenetrable by the roots of plants, and hence the necessity of breaking this crust by the subsoil plough. A soil having close, hard gravel, or a stiff clay bottom, may perhaps derive equal benefit from the use of the subsoil plough. Most of my observations, with regard to its beneficial effects have been upon the former, having but little land with a clay bottom. The objections to deep ploughing, that exist in the minds of some farmers, cannot apply to sub-soil ploughing, inasmuch as the poorer part of the soil is loosened but not brought to the surface."

Mr. P. states that he has used a sub-soil plough constructed by Prouty & Mears, and is pleased with it. The best specimen of sub-soil plough that I have seen, was made by Mr. C. Howard, of Hingham. This obtained the first premium of the State Society the present year. It is of medium size, and can be procured for about $10. Ruggles & Co. have also made a variety of patterns of these ploughs.

acres unproductive, to one that appears to be rewarding the husbandman for his labor. And may it not be that the cause of this barrenness is the want of the application of this labor in a proper manner? We do not presume to say that every soil can be regenerated, by the use of the sub-soil plough, any more than that every disease can be relieved by a single medicine; but we have great confidence that it will be found an effectual remedy, where all others have failed. Were our farmers half as ready to experiment upon their lands, as they are upon themselves or their families, with the nostrums that are advertised at every corner, they would find the hazard much less, and the benefits much greater.

In this County, I believe, the example was first set, of offering premiums for the entire management of farms, including lands, stock, buildings, and all the incidentals appurtenant. For a number of years this class of premiums were received with much favor and attended with the most encouraging success. They attracted the attention of our best farmers, and most public spirited fellow-citizens, who promptly invited examination, and freely communicated the results of their experience. In this way was elicited much valuable information. The modes of managing by the most successful cultivators were opened to all. And even these cultivators themselves were enabled to improve upon themselves, when called upon to state with precision their own processes of cultivation. What if these communications have not all the skill of arrangement, and the abstract niceties of distinction, that may be found in scientific treatises; still they manifest good practical sense, in a form too that is readily understood and received with favor. They leave impressions on the mind, in which more confidence is placed, than in any speculative conclusions. They are like the direct testimony of a witness of high character.

It is much to be regretted that the interest of our farmers in this class of premiums has fallen off so entirely, that for three years past, there have been no satisfactory claims to justify their award. Perhaps this

may be explained, in part, by the fact that many of our most enterprising farmers have already been competitors, and therefore do not feel at liberty again to present their farms; and by the apprehension of others, that their farms will not bear a comparison with those that have been exhibited. Such apprehensions should not be indulged. He that hath one talent, and properly uses it, is entitled to as much credit as he that hath ten. Certain am I, that it has ever been the desire of those who distributed these premiums to regard with favor the smaller competitors.

This plan of offering premiums was for several years adopted by the State Society;—and more than once have their first premiums been awarded to farms in Essex, and to those too, which had not been brought forward in their own county. Within a few years an intelligent agent* has been in the employ of the State Society, to personally inspect such farms as may be presented to his notice, and to report such things as may be found of value. If our farmers are still to be so diffident as to be unwilling to come forward with their statements and their claims, is it not worthy the consideration of the Trustees, whether some plan of this kind, of condensing information, could not be advantageously adopted? Beyond all question, there are within the knowledge of many of our farmers facts and processes of tillage, of great value and importance to be known. And so they will remain from generation to generation, until their diffidence is removed, or their enclosures are entered

Who that has ever read the valuable documents given to the public by the late commissioner on agriculture in Massachusetts, but has regretted that *mistaken economy*, that compelled him to cut short his labors in the midst, before the work was half completed? True economy takes into view the *object* as well as the *amount* expended;—and it oftentimes is the wisest economy to appropriate liberally, when the object is of unquestionable utility. If our legislators are to be so much more anxious to retain their own seats, than to benefit the public

* Hon. Morrill Allen, of Pembroke.

by reasonable appropriations for useful purposes, how could our county societies better apply a part of the means they may command if they will, than by perfecting a plan so well conceived? If nothing else could be done, might they not require of each of the Trustees, annually, an intelligent well digested statement of the progress and produce of agriculture in their respective towns. Taking care in the choice of these officers to select those competent to the performance of this duty. By so doing a mass of information would be accumulated, that would richly repay the labor of obtaining it. Specimens of this kind of information may be seen in the annual publication of the Commissioner of patents. But it is impossible for one man, to survey the whole country with that accuracy, to give entire confidence in his estimates. Every town at least, should have its own agent, well instructed in accumulating statistical information. This is done in other branches of labor — why should it not be done by the farmer? Ask any farmer in this house, how many tons of hay, or how many bushels of corn, or what quantity of any other kind of produce, is raised in his town, or in the county, and I doubt whether he will be able to answer you *half right*. There is no want of ability among our farmers; but there is a degree of careless inattention to their own interests; a disposition to go on as others have gone before them, heedless of inquiry — that needs correction. Suppose the merchant should conduct his business in this loose way, where would he find himself, at the close of the year? Precision and accuracy are as necessary in farming as any other employment.

The improvement of the animals with which our farms are stocked, is a primary object of attention at our cattle shows. To this a large proportion of the bounties of the society are appropriated. From the farmer's stock, directly or indirectly, is derived a large portion of his income. It therefore is to him a matter of first importance, that he have correct ideas on this subject. Much has been written in relation to it, and, without doubt, opinions have often been modified by interested considera-

tions; but still we do not find any essential improvement among the animals on our farms generally. Now and then we see a few that have been reared with care and attention, but the great mass of our animals may be said to come forward in the *natural way.*

Public spirited citizens, with abundant means at command, have introduced choice specimens of the improved breeds from Europe. In so doing they have done a commendable service, by showing what may be accomplished by perseverance in the application of scientific principles. For these efforts to diffuse information, they merit the thanks of those who are less favored with the means of making such experiments. Of the superiority of these animals in many respects, and particularly in their size, and early maturity of growth, there can be no doubt. The testimony on these points is too full to be questioned. And of their having been made such by care in the selections and crossings, there can be as little doubt. Nature does not refuse to be assisted in the perfection of her works. By the application of the industry and skill of man, may all the productions of nature, whether animal or vegetable, be essentially modified and improved.

The point to which I particularly ask your attention is, whether it is better for our farmers to endeavor to stock their farms with what are commonly known as the improved breed of animals from England, such as the Durham short horn, and others; or whether their attention had better be directed mainly to improving what are called, our native breed of animals? True it is, that these came originally from that country which is the mother of us all, (and were there known as the Devon breed, I believe,) but they have been so long settled and have become so acclimated, that their peculiarities are as distinct, as are those of the people.

In instituting this inquiry I have no particular theory to support, or party to serve. My only object is to elicit the truth; and this I must do by comparing the facts stated by those who have observed with discrimination and impartiality.

First, as to *working oxen;* is there any reason to believe that better animals for these purposes can be found, than are those of our native breed? I have never seen any oxen superior for labor to the best specimens of those raised in the county of Worcester. I speak of this county with emphasis, because much more attention is there paid to the rearing and training of these animals, than in Essex. Their steers (particularly in the town of Sutton,) are made to know and take their places with as much regularity as boys at school. Many fine specimens of animals well trained have been exhibited from Andover, Haverhill, and other towns; and without doubt, such can be found in almost every town in this and other counties; but in none in such perfection and abundance as in some of the towns about Worcester.

In proof of the opinion expressed of the superiority of our cattle for labor, may I not refer to the numerous teams that have competed in our ploughing-matches in years past, varying from *thirty* to *fifty* in a year? When has it happened that one of our first premiums—I may almost say any of our premiums—have been obtained by oxen, other than our own native breed? Or when has it been known in this county or elsewhere, that premiums for best working oxen have been awarded to others, when our own were admitted as competitors? I am not aware that this point has ever been considered in making these awards. This does not in any manner weaken the force of the argument. The inference I think is, that had they been actually superior, some of those shrewd practical men who have contended for premiums, and who know how to manage these things to the best advantage, would have been likely to have discovered it. I think also, they would ere this have been more generally used. I therefore, think, that their superiority is not proved by their *works.* On the contrary, that our native breed are decidedly preferable for labor to any others that I have seen.

How is it in regard to *milch cows*, for dairy purposes? An animal which when viewed in all her relations is not second in importance to any other. In regard to these,

the county of Essex may speak with some confidence. Here have been raised and exhibited numerous cows that will bear a fair comparison with those of any other county. Instance the Oakes Cow and the Nourse Cow, and the present year the Pond Cow, (all of which were from Danvers, I believe,) they have not been excelled by any others. Two of these yielded from 16 to 20 pounds of butter a week, for many weeks together, of superior quality, and this without extraordinary feed or pampering; and the other, 14 quarts of milk per day, for ten months together. Statements of similar produce have I noticed within a year, of cows of native breed at Springfield and Northampton.*

If such animals can be found in this manner, without any extra care in rearing, what might they be made, by the application of the skill that has been used in perfecting the foreign breeds? I am not unmindful that single instances may be found of the short-horn cows that have yielded from thirty to thirty-six quarts of milk per day; and of flocks that have produced larger quantities of milk, in *weight* and *measure*, than have been obtained from the same number of native cows. In the notices of these cows that I have seen, the *quantity of their milk* is usually spoken of, and not the *quantity of butter* it will yield. Now every intelligent observer knows that 20 quarts of milk from some cows will yield more butter than 30 quarts of milk from other cows; so that the *quantity* only gives but an imperfect idea of the value of their produce. Take into view also the expense of feed required, and their comparative capacity to endure the severities of our climate, and the peculiarities of their habits; and it may well be questioned whether the foreign breeds are of so much value upon our farms, as those that might be raised from the best of our own stock. All that is wanted is the same care in selection and vigilance in rearing that have been applied to the others, and there will be no deficiency in an adequate supply of milk for our dairies.

* In the Massachusetts Ploughman, a paper worthy to be read by every Farmer.

Why is it that so little care is given to the selection of *milch cows*, when there is so much choice in them ; —both in regard to the feed required, and the milk produced ? It costs no more to support a cow that will yield from 16 to 20 quarts of milk per day, than one that will yield 10 quarts. The one merely earns her living, the other not only supports herself, but him who feeds her ;—and if care is taken to rear her progeny, will ensure a perpetuity of her good qualities.

In connection with this idea, it will be remembered by some of the Trustees, that as early as 1823, premiums were offered for *improving our native breed of neat cattle*, to be paid in 1828. And it was then remarked,* "that it would avail little to bestow premiums merely for the best that shall be produced, unless something is done to preserve the breed ; for such premiums might be given for a century, without effecting any real improvements; and thus as to live stock, defeat the object for which the society was formed." I now appeal to the Trustees to consider the principles then stated, and to inquire how far they have been applied. Have we not gone on from year to year, almost exactly in the way then stated to be of no use ? How can it be expected that our stock will be improved, unless care is taken to raise from those of best qualities, their offspring of best promise ? Every farmer recognizes the principle that a good cow is most likely to have a good calf. They act upon this principle in selecting their calves to be raised. This then is the ground upon which your premiums should be offered; *not only for the best animals, but for the best efforts manifested in improving the breed of the animals, with a statement that shall enable others to imitate these efforts.*

So distrustful am I of my own competency to express an opinion on this subject, that I beg leave to corroborate my own views by citing the opinion of Mr. J. Lowell, as expressed by him in a report made at Brighton, October, 1822. Says he : " Although the milch cows

* By Col. Pickering—then President of the Society.

"of Great Britain and the Netherlands are in *general* far "superior to our own ; I have never seen an imported "cow of equal merit with some of our own that have been "here offered. So fully am I convinced of this truth, as "well as that our country possesses a very considerable "number of these fine cows, that I am persuaded if Great "Britain or the Netherlnnds were to send us ten cows, "each of the best quality, New England alone could "furnish twenty which would equal them in the quanti- "ties of milk, butter, and cheese, which they would re- "spectively produce."

To this he adds, "If every owner of a good and very "superior cow, would consider her in a proper light, not "merely as a valuable animal during her life, but as ca- "pable of improving his whole stock, if he will spare no "moderate expense in procuring calves from her of bulls "of an improved breed, we shall soon see our whole "stock gradually improve."

It will be remembered by many who hear me, that in 1825, a very full discussion of this question was had between Col. Pickering and Col. Powell, of Philadelphia, in the course of which Mr. Powell admits that the short-horns, so called are too large for the ordinary purposes of our farms, and then adds, "by an immutable law of nature, which never ceases to affect the animal not less than the vegetable creation, *in a few generations*, their size will be accommodated to the food given for their support." Mr. Pickering replies, "we now have a breed exactly accommodated to the food given for its support, and inquires whether it is more eligible to propagate a gigantic breed which "in a few generations" may be sufficiently *reduced* in size, and thus accommodated to our service and means of keeping them, or with spirit and resolution, to engage at once, in the laudable and profitable enterprise of improving our native cattle by a careful selection of the best males and females, and thus "in a few generations" *raise* them not to *gigantic sizes*, but to a high pitch of perfection, for the primary objects of New England farmers, *labor*, *beef*, and *rich milk* for *butter and cheese*." In expressing this opinion

of the *equality* not to say *superiority* of our own milch cows, and their peculiar fitness for our farmers' dairies, I know that I am treading upon the toes of high authority, and exposing myself to criticism and remark. I know there are those, who will give you the pedigree of their stock, with as much precision, as ever did a Jew of his family, and that their notions of value are much modified, by the number of degrees they have taken, or the high sounding epithets applied to their names. This practice of tracing their history is commendable. But a high sounding title will never alter the character of a *calf*, of whatever description he may be.

I know that at our cattle shows we admire and give a preference to those sleek and beautiful animals, that are as it were polished for the exhibition; and that we should feel grateful to those who thus show us what can be effected by care;—but still we do not find in them the real *stamina* for our dairies. As soon should I think of selecting from the *brilliants* of a ball room, the best manager of a dairy.

The prices at which these animals are holden, constitute a serious obstacle in the way of their being procured by common farmers. I cannot see any good reason why such extravagant prices as $1000, or more, for a single animal should be countenanced. Our farmers cannot afford to appropriate the entire income of the year, to the purchase of a single animal. "I have found," says Gov. Hill, (a very intelligent and safe guide on agricultural subjects,) "it to be the invariable safe course, for all who have no property they can afford to throw away, to purchase no article or commodity not absolutely necessary, when that article or commodity bears an unusual price." *

* In 1827, at the suggestion of Col. Pickering, and by the liberality of Gorham Parsons, Esq., of Byfield, an attempt was made to introduce the Alderney breed of cattle at West Newbury. I have received from my friend, Col. Newell, some interesting facts in relation to these animals, many of which are now there. He thinks them superior for their *milking properties;* but in consequence of their inferiority of size and appearance, they have not readily come into favor. He thinks favorably of crossing the Alderney and the Ayrshire breeds with our native stock, with a view to produce good cows for the Dairy. It seems to be the better opinion of those among us who have had

The use and improvement of wet meadow and swamp lands, early occupied the attention of this society, and has afforded some of the best examples of successful experiments. A brief reference to these may be useful, not only in showing how similar improvements may be made, for this is one of the most extensive fields for improvements; but in guarding against the misapplication of labor in mistaken modes of operation. In regard to these grounds, it should be borne in mind, that they vary quite as much in their texture and component parts, as do the upland soils; and that it is necessary to vary the process of redemption accordingly. The foundation of all improvements in this kind of land, is first to free them of the superabundant water with which they are burdened. This must be thoroughly done, and in a manner that shall continue them free. Much labor has been lost, by temporary drains, that soon become impeded by grass, leaves, or other obstructions; leaving the ground in as bad condition as at first. The same necessity that required the drains to be made, demands that they should be continued open. When the water is removed, then the coarse grasses or meadow plants are to be destroyed, and the texture of the soil is to be brought into a condition to support the growth of the upland grasses. In its meadow state it is too porous, too much like a honeycomb, for this purpose. It needs either to be wrought over or to have some other substances mixed with it to make its texture more compact. There is no want of vegetable matter or nutritive substances, the only thing necessary is to bring these into a position that they can be successfully used. Various modes of doing this, have been attempted, with more or less success; probably from a want of proper attention to the qualities of the land sought to be reclaimed. Some meadows are composed mostly of decayed vegetable and animal substances

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most experience, so far as I have been able to learn their opinions, that by a judicious crossing of the best of the English animals with our own, a race may be produced of more value, and better adapted to the climate, than any now to be found. A very large proportion of the Durham cattle now to be found are of that *coarse, elephantine* character, that would not be admired or even endured, by the best judges in England.

that have passed through a state of putrid fermentation, and as soon as the water is removed, and the particles of the soil are brought in close contact, are susceptible of being made very productive. Especially when a dressing of some appropriate manure is applied, adapted to stimulate the other parts to successful action.

Others of a peaty texture, contain substances that have not been through the putrid fermentation, necessary before it can be used as the food of plants, or the component parts of manure. These need to be exposed to the action of the atmosphere, and to have other substances mingled with them.

The first attempts at improvement on these lands, to which our attention was called, were by Messrs. Osgood, of Andover, Putnam and Ingersoll, of Danvers, and others. These were made principally by draining, and by the application of sand and gravel to the surface. The expense of covering the sod with a sufficient depth of these materials, to completely check the growth of the meadow grasses, operated a serious check upon improvements of the kind, and the care and attention necessary to continue the water courses open, and the frequent repetition of a dressing of manure required, prevented an extensive application of this kind of improvement. Fine crops were in some instances produced; but it is not expedient for the farmer to spend his efforts in raising fine crops, when they cost more than they are worth. Such instances of culture, in the vicinity of his residence, may sometimes be justified by collateral considerations; but in general, it should be the aim of the farmer, that the produce should repay the expense of producing it. Others attempted improvements by *paring* and *burning* the surface; and this was done in repeated instances with good success. Among the best experiments of this kind were those of Messrs. Osborn and Brown, of Saugus, and Mr. Newhall, of Lynnfield. I witnessed the crops on their lands, on the first and second year after they commenced, and found them most luxuriant. What have been the subsequent crops, I am not informed.

More recent experiments in reclaiming these lands,

have been made by turning over the sod, and mingling with it a sufficient quantity of loam, or other substance, to give it a consistency to support vegetation, and then cultivating it in a manner to preserve the remains of the decaying vegetable matter in the soil. Unquestionably, where the process of draining can be so complete as to admit of this,—this process of culture will be most eligible. For so much of the vegetable material as has been destroyed by fire, or otherwise removed, will in the course of time, need to be replaced for the renovation of the soil. Successful experiments in this way have been made by Messrs. D. P. King, of Danvers, J. Marland, of Andover, and J. Newhall, of Lynnfield. Similar experiments with the best success, without the application of gravel, were made a number of years since on the farm of Mr. J. Nichols, in the south-westerly part of Salem. Here special care was taken to keep the ditches clear, and free of grass or leaves, so that no obstruction should remain to the perfect draining of the land. I refer to these instances of culture, as specimens of the practical application of the principles, but not as descriptive of all that has been done. The mode of management proper to be adopted, must depend upon the particular character of the meadow or soil,—upon the depth and component parts of the vegetable material ;—upon the nature of the sub-soil beneath;—upon the character of the springs that flow in from the adjoining hills;—and upon numerous other varying circumstances observable in particular cases, that cannot be anticipated or specified in any general rules. In this as in all other farming processes, there is constant occasion for the application of good judgment and good sense. The application of theoretic rules without these will often end in disappointed hopes. By good sense, I mean the right application of well established scientific principles.

A most important use can be made of these bogs and reservoirs of vegetable matter, by taking therefrom at convenient times, supplies for the barn-yard, for the swine-pen, and the compost heap, all of which are indispensably necessary on every well managed farm. The experience of the last twenty-five years has taught much

in relation to the making of manures. The farmer who then made fifty loads of manure in a year would not now feel that he had done his duty, with less than two hundred loads. And no farmer does his duty who does not produce this quantity, or more. If you expect bountiful crops, you must feed the soil as bountifully with the necessary food of such crops. The primary vigor of our soil has been used up. Our success in cultivation depends mainly upon skill in preparation and application of manure. As well may you expect your beef or your mutton to be fatted by the air, as your land to be productive of good crops, without an ample supply of manure. It was forcibly remarked by Mr. Gray, in his address to this society, in 1841, "These "unimproveable "lands," as they are styled, contain *manure enough* in "some sections to cover all our tilled lands a foot deep; "*manure enough* to render every acre of the soil as fertile "as the prairies of the west; *manure enough* to cause "two tons of hay to grow, where now grows but one, and "an equal increase in all other productions of the farm." From the chemical analyses that have been made within a few years, of different ingredients that may be found in our *swamps*, *meadows*, and *marshes*, capable of being converted into manures, there is reason to think that we have scarcely begun to find out the means of improving our soils within our reach. Further inquiries are proper to be made on this subject; and it behooves our agricultural societies or the State, to see that it is done. If we could be assured that by proper application of labor and skill, the productive power of our soils might be doubled; there would be no occasion to roam after more fertile fields, in other regions, to the hazard of the loss of those distinguishing traits of character, which constitute the charm of New England society.

Much discretion is to be used in the adaptation of manures to the different kinds of soil, and to the peculiarity of condition in which the soil is at the time of application. What will be *life* to one, will be *death* to another. Many of our farmers learn this, more or less, from their own personal experience, without knowing the reasons why

it is so. If they would take pains to look into and understand these reasons, which can be done just as readily, as they understand it is better to plant their corn in May, rather than in November, they might save much labor. Without doubt, many a farmer loses more than half his labor applied on manures for the want of this knowledge.

Public attention has lately been much called to the application of manures in a more condensed and concentrated form, such as *poudrette*, *guano*, *bone dust*, *&c.*, divested of the coarser and unproductive ingredients. For gardening and city culture such manures may be highly valuable. But whether it will be in the power of our farmers generally, who rarely have spare funds for the purchase, to dress their lands in this way, has seemed to me questionable. The farmer should endeavor to find within his own precinct the means of replenishing his soil. His main reliance, after having taken proper care of his barn-cellar, his barn-yard, and his pig-pen, should be on his collection of compost. It is believed that almost every farmer will find within his own limits, or in his immediate vicinity, abundant materials for this purpose. When not necessarily employed in other things, his attention should always be given to the collecting or saving something that will increase his supply of manure. The careful cultivator will find many opportunities in the course of the year to add to this *main-spring of good husbandry*. "Let no man," says Mr. Quincy, who is equally at home on the farm, as in the College, "consider his barn-yard properly arrang-"ed, until he has a receptacle for his manure, water "tight at the bottom, and covered at the top;—so that "below nothing shall be lost by drainage, and above "nothing shall be carried away by evaporation."

What would be said of that farmer who when he had raised his field of grain should suffer it to remain exposed until one half of it was scattered by the winds, or otherwise lost? Do we not often see a destruction equal to this, in their collections of manure? Is it extravagant to say that one half of the manure ordinarily

made by the cattle on a farm is wasted? Look to the common structure of barns, where the manure is thrown out to the sides, exposed to the sun and rain for half the year;—or to the yards where the cows pass their nights in summer; and compare the products of these barns, or these yards, at the end of the year, with receptacles for the manure properly regulated, and I doubt whether there will remain half the quantity. Take into view further the increase that may be made by placing the cattle in position to preserve the liquids that are about every stall, by the aid of which mingled with earth may be made the best of manure, and it will not be too much to say that our farmers generally lose two thirds of the materials they have at command for enriching their lands. How many of them not satisfied with the losses thus accruing take special care to draw their manure to the fields when made, and to lay it in a position that will effectually scatter a large proportion of the virtue that remains? Or when they come to use it, spread it upon the surface and thus lose its fertilizing powers? Again and again has it been demonstrated, when manure is applied to land, its tendency is to *ascend* and not to *descend*. An examination of the sub-soils on lands that have long been under a state of high cultivation proves this. It is therefore indispensable in the application of manure to the best advantage, that it should be mingled with and covered by the earth. Care also should be taken that it be properly pulverized or subdivided, so that when mingled with the soil, the union be as perfect as possible. Recent experiments of Professor Liebeg, show that *ammonia*, or the power to produce this, is the principal fertilizing ingredient in manure. As much care, therefore, should be taken of this in the field, as in the *smelling bottle* at church.

Clay, sand, and lime, are the principal ingredients in most of our soils. A due admixture and proportion of these is essential to successful cultivation. It was the remark of Mr. Fessenden, that "clay without sand, or "sand without clay, and both of these without lime, are "like a stool intended for a tripod, with but one or two

"legs, worth little or nothing, till the missing part or "parts are supplied." Such modifications of the soil, with the application of such manures as are specially adapted to the crop sought to be raised, is the business of the intelligent farmer. No man can make pretensions to this distinction, without the requisite qualifications. If a man offers his services to make your shoes, or to build you a cart, or to teach your children at school, you inquire into his qualifications to discharge these duties. Why should not the same inquiry be instituted, when he offers to cultivate your lands? To constitute a good farmer requires a due admixture of scientific theory, practical skill, and common sense. The one without the others often misleads to visionary speculations, and thereby brings into contempt all scientific operations.

I cannot better illustrate the benefits that may be derived from the proper preparation and application of manures, as compared with the heedless use ordinarily made, than by reference to the extraordinary crops obtained by gardeners and others from the careful cultivation of small parcels. In every village may be found instances of such culture, where the profits accruing over and above the extra labor, are ten times as much as farmers usually realize from the same quantity of land. Possibly it may be said that the demand for such garden vegetables, as *asparagus*, *lettuce*, *strawberries*, *&c.*, from which the greatest profits have accrued, is of so limited a character, that few can find their account in this kind of cultivation. I will, therefore, refer to the cultivation of the onion, which is distinctly the business of the farmers in my neighborhood, many of whom have more acres of onions than most farmers in the county have of Indian corn. The average yield of this crop is 300 bushels to the acre; sometimes as high as 500, or 600 bushels. The ordinary expense of manure and labor to an acre may be estimated *double* that required for Indian corn;—this estimate is believed to be ample to cover all that will be requisite, for a series of years, especially when it is taken into view that much of the labor of weeding and gathering may be done by children. For ten years

past from 30,000 to 60,000 bushels in a year have been raised in the single town of Danvers. The average value of the crop when brought to the market is fifty cents per bushel, or $150 per acre. In what way can so fair a profit be realized from the land? Take into view also the condition in which this crop leaves the land for other crops, actually benefitted, and it will be found one of the most advantageous crops that can be put upon the land. How happens it that these cultivators are thus successful. Is it not because they are careful in the preparation of their grounds, and in the selection and application of appropriate manures in a proper manner? Within my own remembrance, these same cultivators scarcely knew how to raise a bushel of onions, and thought their soil would not produce them. Would not the same kind of care find its reward in the cultivation of other crops? Indian corn for example, this most luxurious and valuable Yankee crop, thirty years since was estimated at an average of *thirty bushels* to the acre. Will our farmers be content with such an estimate, when double the quantity can readily be obtained by the same labor, with the application of proper skill and manure in the preparation and cultivation of the land? The lesson to be drawn from these facts and considerations, is, *cultivate so much land as can be well done and no more; and leave no part of the process of cultivation slightly performed.*

Neglect of this salutary rule is unquestionably the common error of our farmers. In the first place, they spend their means in procuring additional acres, thereby depriving themselves of the power of profitably cultivating the few they had. This disposition to engross many acres, and to own, as is the desire of some, all that join them, is not only a private but a public evil. It checks enterprise and prevents the natural increase of population. Where lands are thus possessed, what chance is there for the enterprising young man to become a proprietor? Can you not bring to recollection hundreds of acres that have thus for years, been excluded as it were from all useful purposes? Within my own observation, I have known farms that remained for years in the hands

of one proprietor, when they came to be divided into the hands of five or six, to yield more on each part, than the whole did when held by one. By a proper division of our lands, allowing no one to engross more than he can judiciously manage, not only would our territory support a larger population, but the population itself, would be more independent.

The proper appropriation of capital and labor on a farm may be illustrated by a comparison with the every day occurrence of the building of a house. Suppose a person of moderate means is about to erect a house, for the accommodation of his family, is it wise to put up the *frame* and *covering* of a building, so large that he cannot finish but a small part of it, leaving the front and chambers, a sort of dreary and desolate waste for swallows and vermin ;—or is it best to put up a tenement such as he has the means of furnishing and finishing in a decent and comfortable manner? No one who has ever noticed the contrast in such tenements, and many such can be found in almost every village, will hesitate to say that the wiser course will be to erect such an one as can be comfortably finished. Let the farmer apply this principle. Let him procure so much land as he can thoroughly cultivate, and apply himself to this. And as his means increase, so may his cultivation extend. Capital and labor are the true sources of income. If concentrated they produce more than when diffused. It is not the extent of lands that determines the farmer's profits, but the State of culture to which he brings them. What were formerly sound rules of conduct, have now in many cases become almost obsolete. So many and so great have been the changes in the facilities of communication from place to place ;—in the transportation of commodities from one part of the country to another ; in the introduction of new varieties, and in the alteration of habits of living, that the course which was then judicious now needs much modification. Now when the farmer goes to the market with his beef, his pork, or his butter,—articles from which he used to expect to raise cash to meet his taxes and other necessary payments,—

he there finds it forestalled by the products of the valleys beyond the mountains,—where the fields are waiting to be sown, and the forests of hundreds of years, have enriched them to overflowing. How can the farmer here compete with the farmer there, in raising pork, with corn at one dollar per bushel ;—when there it can be obtained at one quarter part of this sum, and when raised it can be transported to our market at one quarter of a cent per pound ? And so with wheat, with corn, and many other articles on which the farmer used to rely for his income, and for raising the means for paying for his lands. For so it is that most of those at the age of fifty, who are found to be in the possession of their own acres, in the most thriving condition, have purchased these acres with their own earnings. In the agricultural, as in the trading community, property will not adhere that is not cemented by labor. The young man, therefore, who sets out to be a farmer, must look about him and see how farming can be supported. What kind of crops there are that will pay for themselves, and something more. He must so manage as to make both ends meet. I cannot too strongly urge upon him the necessity of keeping accurate minutes of what he does ;—and of making exact estimates of the result of his labors and experiments. Nothing is more detrimental to good husbandry than uncertain conjectures. Though the result of our operations may not correspond with our wishes or expectations, we should not close our eyes upon the facts. Truth, exact truth, will ever support itself and him who cherishes it. I would not by any means discourage the farmer in his labors by these suggestions ; but would exhort him to vary his culture ; look about him for a market ; select such articles for cultivation as the demand requires ; so that when driven from one position, he may have another of more security in reserve. Those are said to be the wisest commanders in war who make certain a safe retreat.

The implements and tools to be used by the farmer demand much more attention than is usually given to them. The difference between the application of labor

with tools of good construction, adapted to the purpose, and with tools of bad construction, may be the entire difference between a successful and a ruinous husbandry. This has been before remarked in regard to the plough. In many other branches of labor have there been almost equal improvements. Instance the gathering of hay, by the use of the *horse rake*. If I am rightly informed three fourths of the labor of raking may be saved by it. This is a matter of great consequence, when time is so valuable as in the haying season. The *cultivator* too does much, when properly applied, in a short time, far better than it can be otherwise done. The *roller*, how few of our farmers rightly understand the advantages to be derived from this! In the most approved processes of managing lands, a roller is as indispensable as a plough. Still I doubt whether half our farmers have ever had one on their farms. Many other less prominent implements have been equally improved, and demand of the farmer who would labor to best advantage to be brought into use. The grand difference between a thriving farmer, and one that does not thrive, is—the one looks out for the *fractions*, the other does not. In farming, nothing should be lost; nothing should be neglected; everything should be done at the proper time; every thing should be put in its proper place; every thing should be performed by its proper implement. When these rules are observed, the farmer will surely prosper—though his gains may be slow, they will be certain and sure. His dividends are under his own control, and are not liable to *embezzlement*.

Among the improvements of a few years past, there are none that promise more, than those in the cultivation of grass;—a crop of greater value and extent than any other to the Essex farmer. A crop that demands a particular notice at an Exhibition in Ipswich, distinguished before all other places in the County for its hay products. The peculiarity of this culture, first brought to the notice of the public by Mr. Phinney, is, that the land is continued in grass, year after year, without the intervention of any other crop, except occasionally Indian

corn. How long this can be done remains to be proved. Thus far it has succeeded well. It is done by turning the furrows flat, rolling them smooth, harrowing or cross-ploughing, or both, without disturbing the sod, applying compost manures and the seed upon the surface and harrowing it in. This process is repeated as often as the land demands a coating of manure. The land is kept in a light and favorable condition for supporting the crops, by the decaying vegetable matter that was upon the surface. This mode of culture is somewhat at variance with the system of rotation of crops, which has been so generally recommended as essential to good husbandry. The best specimens of this culture that I have seen, have been on the farms of Mr. W. Sutton, of Salem, and Mr. D. P. King, of Danvers, to which I refer the curious to examine, as affording a better illustration of the benefits, than in my power to give.

Another modification in the cultivation of grass which has been successfully practised by Mr. D. Putnam, of Danvers, and others, and which is now coming into general favor, is by sowing the seed among the corn at the last hoeing—taking care to have the ground left in a level and smooth condition. Repeated experiments have shown that the old practice of raising a hill about the corn is not attended with any benefit. If then, the smooth culture of the corn will aid in bringing the lands into good condition for grass, which is the primary object in view,—our crops of barley, oats and rye being raised merely as secondary objects of attention,—does it not behove our farmers to inquire whether their grass seed cannot be advantageously sown in the Summer or Autumn, without any intermediate crop of English grain? When thus sown it is much more certain of taking root, and in much less danger of being cut off, by the burning sun, which usually follows the removal of crops of grain. I have adverted to these modes of grass culture more for the purpose of inviting attention to them, than to express any decided opinion of my own; because I am sensible it is never safe to draw general conclusions, from a limited number of experiments.

The comparative value of crops raised for the feeding of cattle, &c., has been a prominent object for which premiums have been offered by this society, but without producing any satisfactory experiments. This would seem to be an object deserving attention, as without this knowledge the farmer is playing a game of chance, without knowing the value of what he raises.*

In bes owing the bounty of the State upon the Agricultural societies, it was done on condition "that such encouragement should be annually offered as seemed best adapted to increase and perpetuate an adequate supply of ship timber within the Commonwealth." The letter of the condition has been complied with;—but what has been the result? Where is the tree now growing that started into being in consequence of this bounty? Where is the cultivated plantation of oaks, even to the extent of a single acre within the County? Our records show hundreds of dollars offered for their encouragement, and occasional awards for hopeful promises; but I fear that the time is far distant, when it will be in our power to use the fruits of these bounties in defence of our shores.

* In the report of the Commissioner of Patents, for 1843, p. 120, is the following tabular statement, which will afford some light, until we ascertain for ourselves with more certainty. One hundred pounds of good hay are equal to

275	lbs.	of	green Indian corn,
442	"	"	rye straw,
164	"	"	oat straw,
153	"	"	pea stalk,
201	"	"	raw potatoes,
175	"	"	boiled potatoes,
339	"	"	mangel wurtzel,
504	"	"	turnips,
54	"	"	rye,
46	"	"	wheat,
59	"	"	oats,
15	"	"	peas or beans,
61	"	"	buck wheat,
57	"	"	Indian corn,
68	"	"	acorns,
105	"	"	wheat bran,
109	"	"	rye bran,
167	"	"	wheat, pea, and oat chaff,
179	"	"	rye and barley chaff,

16 lbs. of hay is equal to 32 lbs. of potatoes; and 14 lbs of boiled potatoes will allow of the diminution of 8 lbs. of hay.

Curiosity led me a few weeks since to inquire for the plantation in Hamilton, for which the State bounty of one hundred dollars was awarded about forty-five years since. By the aid of a friend I found the place, but the trees were few and far between.

Were our Legislators entirely in the wrong in supposing the cultivation of such trees to be a desirable object? Or does the mistake lie with the proprietor of the soil? That timber trees are indispensably necessary for the convenience, prosperity and safety of the nation, will be admitted by all. That they can be successfully cultivated, with proper attention applied, is equally clear. Why then is it not done? Why has it happened that all the attempts have proved abortive? In what manner could Essex farmers better consult the permanent interests of their children, than by planting trees? Grounds so rough and rocky as to be unfit for tillage, and we have many acres such, can in no way be so profitably improved. In England and Scotland are hundreds of acres of forests now growing, in most thrifty condition, that were planted by the hand of man. Shall not the independent yeomanry of New England, the tenants of their own soil, have equal confidence in the stability of their institutions, and the propriety of providing for the benefit of those who may come after them, as do those who toil to plant where they never can own? Perhaps the uncertainty of the tenure of our estates, and the still greater uncertainty of the disposition of the rising generation to be willing to follow the humble but honorable occupation of their fathers, has deterred many from venturing upon experiments, the benefits of which could not be realized while they lived. Such a policy is short sighted, and unworthy enlightened citizens. What consequence is it whether our acres are inherited by our sons or others, if they are but rightly used? Does not this jealousy of feeling operate in a manner to alienate the affections from the paternal estate? Are not the *ever changing movements* of the age unfavorable to permanent valuable improvements?

The cultivation of trees generally, whether for orna-

ment, for fruit, or for timber, is an object that demands much more attention than has been given to it. I have not time to speak as I would like, of the cultivation of fruit trees,—of the increasing attention lately given to the subject,—of the many and valuable varieties of apples, pears, &c. cultivated by our horticultural friends in Salem, Lynn, Haverhill, and other towns;—but can simply say, that there is no branch of husbandry that yields a more certain and ample reward, and that the demand for good fruits of every description seems to be in advance of the supply.

Very early in the history of the Society were facts stated by Dr. Nichols, in relation to the cultivation of the locust tree, highly worthy of regard. Having myself witnessed similar facts, I am fully persuaded that in no way can our barren and gravelly pastures be so advantageously used, as by covering them with the locust, which may readily be done, either by planting the seed, or by here and there transplanting a tree, and allowing them to spread, as they are much inclined to do. Lands thus managed I have known to yield posts and rail road sleepers, that sold for more than one hundred dollars per acre, for ten acres together, within forty years from the first planting,—which during this period had been of more value for pasturing in consequence of the trees growing thereon. For it is a fact, that the feed both in quantity and quality, under and about the locust tree, is better than where there are no trees. Take into view also the increasing demand for this kind of timber, for rail roads, fencing, trunnels for ships, and other purposes, and the rapidity of its growth, advancing so rapidly that those who plant may gather, and it will not be easy to find an object more worthy the attention of the owners of such unproductive lands.

Suppose our farmers should set out rows of the locust, the sugar maple, the ash, the elm, or the larch, by the borders of their fields, by their pasture fences, or by the road side,—and in this way start a growing from fifty to one hundred trees to each of their acres,—would their other crops in any manner be prejudiced thereby?—

Would not the verdure and beauty of the scenery more than balance all inconveniencies? Let these trees continue to grow, for one generation only, and the trees themselves would be of more value, than the land on which they were planted. Let them be planted in the streets of villages, and about dwellings, as seems to be the growing taste of the public, and they will have a value almost beyond estimate.*

The cultivation of the mulbury tree, for the making of silk, demands a passing notice in the history of the efforts of this society. Much pains has been taken to bring this subject before the public, and many efforts have been made to diffuse information, and to encourage the culture. I regret to say that the present condition of this culture, in this County, so far as I have been able to learn it, does not warrant sanguine hopes of much benefit accruing therefrom. Numerous premiums have been offered and awarded for nurseries and trees in various stages of their growth, and numerous experiments have been made, notices of which have been given to the public; but I am not able to refer to any cultivator who has a plantation in successful growth, or to any individual who has realized a fair remuneration for his labor. Visionary theories have taken the place of established facts. Fanciful estimates, of well balanced accounts. It should be remembered that plants attain to highest perfection for all useful purposes, in the climate and soil where they are found indigenous; and that the further they are removed from these, the greater is the uncertainty of their success. The application of this principle will lead to the selection of those species and varieties that are best adapted to our climate and soil. If any such can be found that will endure and flourish, from year to year, without special nursing or hot-bed forcing,

* In three instances within my observation have I known the ravages of fire stopped by the shady elms. This was distinctly so in the destructive fire of Sept, 22, '43, at Danvers, which was prevented passing from the Church to the easterly side of the way, by several thrifty elms that had been set only about twenty years. Had it not been stayed in this manner, the whole village must have been consumed. A similar event happened at Gloucester but a few years since. Surely such facts should prompt to the cultivation of such trees.

then may the fingers of the young and the feeble be advantageously applied to picking the leaves of the mulberry, and to aiding the labors of the most perfect of all manufacturers, the silk worm. Until some such variety can be naturalized in our soil (and of this I will not despair,) I shall have little hope of this culture.*

Repeatedly has the propriety and expediency of the establishment of schools for the instruction of young men in the science and practice of agriculture been agitated. So often has this been adverted to in public addresses, were it not for its intrinsic importance, I should hardly feel justified in again introducing it. The Academies at Byfield and at Andover, have been presented to your notice, with all the plausibility that the eloquence of a late President,† or the ingenuity of a learned Professor‡ could suggest; but still we have none of their graduates at our festivals;—we grope on still without the illumination of their rays. Why is this? Is the idea of instructing young men in a business that is to occupy their time for life a fanciful one, that cannot be carried into practical operation? Such is not true of other employments. Who that has a son destined to be a carpenter, a blacksmith, or even a manufacturer of cloths, or of shoes, hesitates to appropriate years of his time to qualify him in his art? And does the farmer's art demand less instruction? The mistake lies in a misapprehension of the qualifications requisite in a farmer, and in the manner these qualifications are to be acquired. If farmers heretofore have been deterred from placing their sons at school as proposed, by their want of confidence in those who conducted such schools, because they did not exhibit the hardened hands and sinewy limbs requisite for the handling of stone, or holding the

* From the abundant reservoir of facts annually furnished by the Commissioner of Patents, we learn that 315,965 pounds of cocoons were raised within the United States the past year. This would seem to justify the belief that some parts of our country are favorable to the growing of silk; and that all that is wanted is more care in the selection and adaptation of the varieties to the different parts.

† Hon. E. Moseley, of Newburyport.

‡ Rev. A. Gray, of Andover.

breaking-up plough,—or were arrayed in black coats and kid gloves, instead of woollen frocks and leathern aprons;—let the farmers themselves take the direction into their own hands, and govern them in a manner that shall be practically wise.

Here may I be permitted to make a suggestion, which seems to me capable of being advantageously applied. It is to make it a part of the course of instruction in our common schools to learn the elements of agricultural science, the constituents of soils and manures, the geological formation of the earth, the physiology of plants, and the philosophy of vegetation. I do not suppose that all boys at school can fully comprehend these subjects, in which the wisest can ever find something new; but they can acquire the original elements, and when once impressed on the youthful mind with proper illustrations, they will never be entirely effaced. Like nursery tales they will constantly be recurring to recollection, for instruction and delight. The modern system of teaching useful ideas at the same time that boys are taught to read and to parse, is worthy the attention of those who direct these matters;—and what more useful ideas can be selected than those which are essential to be known by a large majority of the people? We have our grammars and text books simplified to the lowest degree on every other subject;—why should there not be such on agriculture? Would there be any difficulty in collecting a cabinet of specimens in each of these schools for the illustration of all these subjects? Let it be known that these things were to be taught, and then teachers would take care to be prepared to teach. In what manner could a DANA, a JACKSON, or a GRAY, who have by their publications, manifested so much ability to instruct the farmers themselves, better add to their well earned reputation of public benefactors, than by preparing an agricultural catechism for common schools? One adapted to the instruction of the pupil, rather than a display of the knowledge of the author. And how could our learned Board of Education, whose peculiar duty it is to cherish these institutions, which are the pride

and glory of New England, better advance the interests of the Commonwealth, than by making such a work a part of the requisite studies in all our schools? He that contributes to elevate the condition of the farmer, improves the main pillar of the State.

While penning these remarks, a notice came to hand of a liberal appropriation by the State of New York, a glorious State, always ready to go ahead in every good work, for the establishment of a State Agricultural School. Shall Massachusetts be out-done in a work so essential to her best interests? We admire that liberality which has founded and cherished the many noble Institutions of learning and benevolence with which she is blessed, and blessing the afflicted and unfortunate.—To her immortal glory will her charities to the *deaf*, the *blind*, and the *insane*, be ever held in remembrance. But is there not a necessity for something more directly to be done for that class which constitutes the major part of her population? Without a common centre, without a fountain from which teachers are to be drawn, we shall look in vain for those qualified to teach. We want practical instruction. We want that kind of instruction which is calculated to qualify young men in the best manner for the real business of life. We want Institutions that shall combine theory with practice, so regulated that when our sons graduate, they shall not then be under the necessity of *beginning to learn*. Whence have originated, and how have been educated, those practically useful men, of which our Country has most reason to be proud? Let the history of a Franklin, a Rumford, or a Bowditch, all sons of Massachusetts, answer the inquiry.

I cannot otherwise so forcibly express my views of the importance of establishing agricultural schools, as by quoting the language of that most eminent friend of the farmer, and of man, in his last address, delivered at New Haven in 1839—the late Judge Buel of Albany. "I pretend not," says he, "to the spirit of prophecy, yet I venture to predict, that many who now hear me, will live to see professional schools of agriculture estab-

lished in our land; to see their utility extolled; and to be induced to consider them the best nurseries for republican virtue, and the surest guarantee for the perpetuity of our liberties."

Accurate observers have estimated that more than half the young men from the country who have left the rural pursuits of their fathers, for the more fascinating and promising employments of the city, have either been ensnared in the nets of vice there spread at every corner, or been made frantic with the visionary dreams of speculation, so that before the meridian of life, ruin has been their destiny. Have we any reason to expect better things in future? Is there such an improvement in the moral condition of our cities as to allay our fears? If heretofore, one half have been lost, what is now the prospect? Let the wise parent say which is the better, so to educate his sons that they may settle down around him, substantial, useful citizens, or send them to the cities to seek their fortune with the equal chance of terminating their career in infamy.

I cannot forbear quoting a sentence on this subject from an address delivered before the Berkshire Agricultural Society, in Oct. 1829, by an authority as high as any other in the Commonwealth—and as well entitled to respect. Says the orator,* "It should thus be one of the first and most important objects of the farmer, after having familiarized his son to habits of industry, and instructed him in those branches of labor fitted to boyhood and early youth, to provide for him the means of a regular and systematic education, and when he shall have finished his course of education, instead of indulging the delusive hope of deriving honor or success by entering into those learned professions which are already crowded to overflowing, and dividing the profits of a dunning letter with some hungry brother of the bar, or mounting the same steed with some half starved disciple of Æsculapius, let him return to the pursuits of early life and become the industrious, intelligent, and independent farmer."

* George N. Briggs, Esq.,—the present Governor of the Commonwealth.

In glancing at prominent incidents in the history of this Society, the aid it has received from the Clergy of the County, should not be passed unnoticed. At its commencement they were all freely admitted honorary members. From many of them have we received much useful instruction, both in their learned discussions of agricultural topics, and their practical application of the principles taught. From none more than our venerable friend at Bradford,* who is always at his post ready to serve in the cabinet or the field. The pages of our journals will fully sustain this remark. Such examples of practical and elaborate usefulness are an honor to the profession. Not less are we indebted to our friend now in Europe,† who having drained our own Commonwealth, and drawn deeply upon the inexhaustible fountains of the Empire State, is now laboring with his characteristic ardor to amuse and enlighten the world. Gladly would I have adverted to some of the interesting hints and facts with which he has lately favored us, in his view of the present state of agriculture in England. But they must not be marred by abridgment.

With the Clergy it mainly rests, whether agriculture shall continue to flourish and advance. Diffused as they are in every village and corner of the land, and holding the controling influence which should ever be conceded to men who fill this station, as it ought to be filled; if they would but lend their counsel for the introduction of new improvements, and apply their hours of leisure in practical illustrations of them, they would add much to their benign influence upon those under their charge;—and indirectly increase the *fleeces* on the *flocks* from which they are to be clothed. Was it not a good custom of our fathers, when they settled their minister (for life, as all such settlements should be,) to provide him with a mansion and a few acres for tillage, upon which, by his own industry, he could raise a portion of those little comforts so convenient to all? By thus dividing their labors between

* Rev. G. B. Perry.

† Rev. H. Colman.

the garden and the study, they found themselves greatly benefitted in the products of the one, and in the superior ability to discharge the duties of the other.

Farmers of Essex,—Notwithstanding the many obstacles with which you have to contend, in the comparatively hard and unfertile character of your soil,—in the tedious and protracted labors of the winter,—in the occasional interruptions of your crops by drought or by frosts,—and in the competition from the overflowing superabundance of other climes more favored;—still you have much reason to rejoice and be content with your condition. First of all—that you are freemen—and all around you are so. The curse of slavery does not, and cannot exist on your soil. That spirit of liberty which animated the breasts of our pilgrim fathers, when they abandoned their homes and friends, most dear for conscience' sake, by the patriotic efforts of their most distinguished son* in our courts of justice, secured to us this boon forever. No one circumstance has contributed more than this to elevate the character of the people of Massachusetts. Happy are we even now, in the vigorous protection of this palladium of our liberties, by the manly efforts of his descendants, not less distinguished. When services like these shall be forgotten, then will freedom cease to be worthy of remembrance.

Congratulate yourselves on the general prevalence of the sound conservative principles of liberty, integrity and law, that pervade this community. Where on the face of the globe can there be found a people, in the stability of whose institutions more confidence can be placed than in those of the good old County of Essex? When has it been known that popular phrenzy or misguided fanaticism were here to any considerable extent triumphant? When did the people of Essex ever presume to be wiser than the law? Who ever for a moment questioned the entire security of life, liberty, and property within our borders? Of what avail is it that there are other lands, watered with crystal streams, warmed

* Hon. John Adams, in 1765, at Boston.

with a milder sun, and regaled with ambrosial breezes, if these rights are insecure? Have we not still ringing in our ears, from the favored paradise of the atlantic shores, the city of brotherly love, and from the fertile prairies of the west, rumors that make our nerves rigid with horror, and chill the blood within us? Who for a moment would exchange the peaceful security of the New England farmer's cottage, for the splendor of a palace thus surrounded? Be content then, with the lot assigned you, and avail yourselves of all the means at your command for its improvement. Who but the farmer did the poet contemplate, when he wrote

> "Reason's whole pleasure, all the joys of sense,
> Lie in three words, *health peace*, and *competence*."

Contrast for one moment, the condition of the Massachusetts farmer with the farmer in England, as given by Mr. Colman in his report just published. There, rarely if ever, does he own a rod of the soil that he cultivates;—burdened with an annual rent that would almost purchase the acres here,—subject to the whim and caprice of an aristocratic landlord, whom he dare not approach, except by gracious permission,—the wonder is, that he has a heart to labor at all,—or even to superintend the labor of others. I now speak of the higher class of farmers, who rent the lands of the lords above them. If you look at those who actually do the labor, you there find the *ditcher*, *ditcher* for life;—the ploughman, incapacitated for any other employment,—with a mind as void of intelligence as the horses he drives;—and all with such limited means of sustenance and support, as never for a moment to indulge the hope of a shelter from the storm, that they may call their own. Such things may be endured where better are not known. But such things will not be endured by those who have inhaled the breezes that wave over our rock-bound shores.

England, who boasts of her abhorrence of enslaving the Africans, to her honor be it ever remembered, at the same time degrades her own sons with a more *servile slavery*.

Wonder not that REFORM is contemplated;—humanity demands it;—the spirit of liberty demands it;—christianity demands it. Let it come—come it must.

Have we not cause of congratulation in the improved moral and social condition around us? Is it not true among farmers as with others, that their customs and habits have materially changed for the better within a few years? Twenty-five years since, and nine-tenths of our farmers were more or less *in bondage to alcohol*. I do not mean that so many of them were *intemperate*, in the ordinary sense of the term, but that they were in the habit of using that which was not necessary to be used—to the great detriment of themselves and their estates. Where will the farmer now be found, who will unblushingly say, before he commences his haying, that he must lay in as many gallons, or even quarts of spirit, as he expects to cure tons of hay? Or that his men cannot commence mowing in the morning, without their *bitters;*—proceed at eleven o'clock without their *grog;*—or load in the afternoon, without their *bumper;*—not to mention the grosser indulgences of the evening. Time was, when these customs, by whatever name they were called, were as familiar as household gods. When even the sober man thought that some was necessary in *haying*—especially in going to the *meadows*, or the *marsh*. But manners have changed with times;—what was once almost a universal custom, is now only to be countenanced for *medicinal purposes*, and then with sound discretion. May the change be perpetual.

May I not congratulate you on the auspicious circumstances to our country, under which you have this day assembled? All classes of our fellow citizens actively and successfully employed. The necessaries and comforts of life at command in abundance. The prices of labor, such that no man in health need to be in want. Each of the various branches of industry in the community, receiving its due encouragement, under the fostering protection of our government: and in a multitude of ways, mutually aiding each other. The farmer feeds the manufacturer; the manufacturer clothes the farm-

er; the merchant transports their commodities from one to the other; and the surplus, if any, where it is most needed. In the body politic, as in the natural body,—no one part can say to the other, I have no need of thee; but the united and harmonious co-operation of all is essential to entire success. If one is sick, the others will faint; if one languishes, the others will decay.

Whatever may have heretofore been thought, it is now admitted by all, whose opinions are of any value, that the vocation of the farmer is as honorable and respectable, as any other in the community.

"Worth makes the man."

Our most distinguished and valued citizens have been farmers, and esteemed it their highest honor to be considered such. Instance the farmer of *Mount Vernon;* the farmer of *North Bend;* and may I not add, the farmer of *Ashland;* to complete a *trio,* of which any nation might be proud.

To be an honest, worthy, and intelligent farmer, is the highest grade of nobility ever to be desired in this land of equal rights. When other titles shall tower above this, then will our liberties be in danger. In the "times that tried men's souls," to whom did we look but to the substantial yeomanry of the country for succor and support. Our main reliance for the protection of our rights, under the Providence of God, will ever be on the independent tenants of the soil. The home of the farmer is on the soil he tills;—there he desires to live;—there he expects to die;—there he hopes will abide his descendants for many generations. How direct then his interest in the welfare of his country!—How ardent his hope that she may continue to prosper!

Remember that our rational enjoyments do not depend so much upon the bounties of nature, as upon our personal exertions to procure those enjoyments.

Our necessity for labor is the surest protection against the allurements of vice.

When man was originally placed in the garden of Eden, in a condition the most favorable for happiness, in the power of Omnipotence to create, he was directed "*to dress it and to keep it*," by the application of his own labor; and such has ever been his duty and his privilege, and ever will be, while the laws of nature shall endure.

REPORTS, &c.

ON SWINE.

The entries this year have been as follows:—"Mr. Joseph Andrews, of Essex, presented his Boar, part Berkshire, 5 1-2 months old, weighing 190 lbs. This young porker is a very fine animal, very corpulent and very round shouldered,—qualities which would be considered deformities in other young gentlemen, but which are essential to a pig's perfection. He appeared in thriving condition, and had the advantage of the animal offered by Mr. Williams in being one month his senior. The Committee award Mr. Andrews the first premium of $5 00

Mr. Paul D. Hatch, of Hamilton, introduced the Committee to a matronly sow, only a year old last May, who had with her *eleven* of her children. The Committee did not inquire after the rest of the family, but those present were a thriving company of young grunters, and gave much credit to their mother for the excellent manner in which she has performed her maternal duties, she having reared this large family from the cradle to the present time without the assistance of nurse or 'help' of any kind. The Committee had some difficulty in deciding between this matron and one of the sows offered by Mr. Williams, but they felt bound to consider in their award the best breeding qualities, and as our Hamilton friend beat her Byfield competitor by a clear constitutional majority of four pigs, they have awarded to her the second premium of $3 00

Mr. Moses French, of East Salisbury, offered a litter of four Pigs not quite six months old, weighing 769 lbs. This was a very interesting group of young porkers, of that indefinable size between pig and pork which rendered it very difficult to decide to which class they belonged, but the Committee, although they believe the hog predominated, yet in the absence of any standard to decide the precise time when a pig ceases to be a pig and becomes a hog, have admitted their pighood, and awarded Mr. French the second premium of $3 00

Mr. William Willams, of Byfield parish, Newbury, offered one breeding Sow with nine pigs, to which was awarded first premium of $5 00

One breeding Sow with seven pigs.

One litter of four Pigs 4½ months old, average weight 212 lbs., first premium $6 00

One Boar 4½ months old, to which was awarded the second premium of $2 00

This is a very superior breed of swine, and the Committee wish it might receive the attention of the farmers of Essex County, and be extended in its present purity over the country. It is the result of a careful crossing of some of the native breeds with a couple of English emi-grunts who came to this country a few years ago, and this improved breed is half English, quarter Mackey, and quarter Byfield, and appears to possess the best qualities of all three. We verily believe that no pen can adequately describe their many admirable properties; our own shrinks instinctively from the effort and we can only refer the connoisseur in swine's flesh to the Pens of the Society.

At the show last year the Committee were so well satisfied by a mere external examination of this breed of Swine, that they awarded Mr. Williams the two first premiums. He was however aware of the truth of the proverb that "the proof of the pudding is in the eating," and he accordingly tendered to the chairman of this Committee a delicate portion of the premium pork, for a more perfect test of its quality. In acknowledging the superiority of the pork the Committee take occasion to

recommend the example of Mr. Williams for the general imitation of the farmers of Essex. In making this recommendation we hope no one will be disposed to raise the stale cry of 'bribery and corruption.' The committee would resent such an imputation with the scorn it merits. Sooner than be influenced by such considerations they would consent to be burned at the steak!

Byfield has become as celebrated for its breeds of swine as for her Dummer School, and the many pupils of that ancient Seminary may look back on its delightful shades and associate in pleasant remembrance its science and swine, its litters as well as its letters, its pork and its philosophy.

Other places in the County are destined to immortality from associations connected with the swinish race. Ipswich has done herself honor by giving the name of Hogtown to one of her pleasant localities, and thus has attained a high place in swinish annals. The town of Essex has also her Hog Island, on which have been raised some of the finest Choates in the country, and one of the most beautiful eminences in the town of Danvers, is known by the name of Hoghill.

Beverly has the enviable distinction of having the largest swinish population in the County. By the last census she had 900 swine, which is several hundred more than any other town or city, and she is emphatically the banner town of the County for living pork. And why should it not be so? Beverly has long been celebrated for the excellence of its beans, and there seems to be a kind of natural and harmonious union subsisting between these two admirable esculents. What would be the vegetable without the oily unctuousness of the animal substance? and what viand comparable with both united! With these two great staple commodities and clad in her bristling armor, she may defy the world—but if ever she suffers her vines to languish and her poles to be driven into exile, it is to be feared that her glory will also depart.

Lynn, too, has her share of swinish honors, derived from the extraordinary merits of a single individual of

the race, of whom the committee have it in their power to present a biographical sketch. We are indebted to Mr. John Alley, 3d, under whose patronage this individual was reared and educated, for some particulars of his life.

We shall omit his name, for the simple reason that he never had one, his parents probably thinking that without a name he would "smell as sweet." Of his origin we know but little, except that he was the son of his mother, who died suddenly when he was a few months old and left him an early orphan. He became remarkable for his rapid growth and the excellence of his appetite, and soon arrived at that middle age of swinehood when his porkship appeared a living epitome of good nature and good living. He continued to expand in size until he became a Daniel Lambert of the race and possessed great weight in swinish society. He was a solid character, and his specific gravity was only equalled by his gravity of demeanor,—indeed there was nothing waggish about him—but his tail. He now became a worthy member of the I. O. of Fat Fellows and attained to their highest degree. His corpulency prevented him from travelling, and although he had never been to roam he was familiar with the rich stores of ancient and modern grease. He possessed neither title or trust deeds, but was nevertheless entitled to be trusted for his good deeds. The state of the money market gave him no concern, and he cared little for the rise and fall of stocks—except corn stalks, which he always appeared anxious to get down. He early acquired a disgust at party politics by observing the greediness with which some partizans have thrust their snouts into the public swill-pail. He often thought that some aspiring individuals had much better have a sty in their eye than the White House at Washington. In his political views there seemed to be something like inconsistency, as is frequently the case, with those who profess neutrality. He was in favor of protection, and was a ravenous advocate of home consumption. He also favored large Corporations and at the same time was a strong advocate of

retrenchment and delighted in cutting down celeries. He never was a candidate for any public station, and it is believed that his modesty would prevent him from accepting the offer of any office, from that of Committee on Swine down to the President of the United States.

Notwithstanding he was ten feet long from extremity to extremity, the event proved that he was not long for this world, and in his last extremity no friend was found to save him from the hand of the assassin. He was rapidly increasing in size until the time of his departure, which was in November last, at the age of two years and six months. At the post mortem examination of his remains it was found that his enormous bulk had reached the weight of more than *twelve hundred pounds!* What prodigality of fatness was here! what a mass-meeting of pork, concentrated in a single individual! The County of Essex challenges the world to produce his equal.

His usefulness ceased not with his life. By the following estimate from Mr. Alley, we are made acquainted with the value of his remains, considered merely as an article of domestic economy.

They would have furnished a public dinner for His Excellency, the Governor ; His Honor, the Lieut. Governor ; the Executive Council, and all the Mayors and Aldermen of the three cities of the Commonwealth, and have supplied a second table for the School Committee and Common Council of the city of Salem ;—besides enabling this latter body to give a "cold shoulder" to the clergy.

They would also have provided fat and rashers for the chowder of the city government of Salem, on their annual visit to the harbor to contemplate the two Miseries and Cat Island.

Solid fat for one hundred and twenty-seven pots of beans.

Liquid ditto to fry seven hundred and fifty-five pounds of fresh fish.

Ditto to saturate six hundred and seventy-four pounds of salt ditto.

Shortening for ninety-two superficial feet of short-cake, and—

Ditto, for two thousand three hundred and seventy-eight very corpulent doughnuts.

It only remains in closing this memoir to give some account of his manner of living; and here candor compels us to the admission that he lived and died a bachelor, but in extenuation we have the best of reasons for believing that like many others of that unhappy class this was his misfortune and not his fault. He was careless of his personal appearance and gave no employment to the tailor, dentist or barber. He was equally unconcerned about the furniture of his habitation, and his carpet, although of home production, had all the softness if not the variety of colors of the Brussels. He was irregular in his habits, eating when hungry, drinking when thirsty, and sleeping when inclined by nature to rest. Mr. Alley informed us with apparent sincerity that he subsisted mainly on raw Indian meal and potatoes. The Committee know Mr. Alley to be a gentleman of strict veracity and they do not like to question his statements—but they had supposed it more likely that he lived on green turtle soup and pound cake with an occasional meal of boiled salmon and canvass back ducks. Indeed they have the evidence of some of the neighbors that fragments of these and other delicacies were frequently seen about his dining-trough, which, if true, would go far to account for the extraordinary bulk to which he attained.

It is a source of much gratification to your Committee that the knights of the snout and bristle have had their advocates among the wise and learned of all ages. Perhaps the race is as much indebted for the consideration in which they are at present held to that pleasing writer, the late Charles Lamb, as to any other author. It is highly gratifying to see this prince of modern Essayists, essaying to speak the praises of pork. We cannot forbear quoting a few sentences from his Dissertation on Roast Pig, as published in the Essays of Elia:—

"Pig—let me speak his praise—is no less provocative

of the appetite than he is satisfactory to the criticalness of the censorious palate. The strong man may fatten on him and the weakling refuseth not his mild juices.

There is no flavor comparable, I will contend, to that of the crisp, tawny, well-watched, not over-roasted, *crackling* as it is well called; the very teeth are invited to their share of the pleasure at this banquet in overcoming the coy, brittle resistance—with the adhesive, oleaginous—oh call it not fat—but an undefinable sweetness growing up to it. The tender blossoming of fat—fat cropped in the bud—taken in the first innocence—the cream and quintessence of the child pig's pure food—the lean—no lean, but a kind of animal manna—or rather, fat and lean (if it must be so,) so blending and running into each other, that both together make one ambrosial result, one common substance.

Behold him while he is doing—it seemeth rather a refreshing warmth than a scorching heat he is so passive to. How equably he turneth round the string. Now he is just done. To see the extreme sensibility at that tender age, he hath wept out his pretty eyes—radiant jellies—shooting stars.

See him in the dish, his second cradle, how meek he lieth! wouldst thou have had this innocent grow up to the grossness and indocility which so often accompany maturer swinehood? Ten to one he would have proved a glutton, a sloven, an obstinate, disagreeable animal, wallowing in all manner of filthy conversation; from these sins he is happily snatched away—

> Ere sin could blight or sorrow fade,
> Death came with kindly care."

So much for Charles Lamb. After reading this eulogy, from the pen of so distinguished a writer, we are at a loss which most to admire—Lamb or pig—the author or his subject—the hero or the historian. One is transcendentally good—the other transcends transcendentalism itself in description. Lamb derives inspiration from pig, and pig in his turn is indebted for immortality to Lamb. After mature reflection and con-

sidering that we are a Committee *on* Swine, we have felt bound to take our stand upon pig—not that we love Lamb less, but pig more.

The late eminent writer, and celebrated Poet, Robert Southey, although he held the high station of Poet Laureate of England, and whose special duty it was to compose Sonnets and birth-day Odes in honor of Royalty, has wielded the same powerful pen in defence of his Royal Highness the Hog. We think we cannot more appropriately close this report than by citing a few lines from his apology for the Pig.

———"I do not love to see thy nose
Turned up in scornful curve at yonder pig.
It would be well my friend, if we, like him,
Were perfect in our kind. And why despise
The sow-born grunter? Thou sayst he lives
A dirty life. Here I could shelter him
With precedents right reverend and noble,
And show by sanction of authority
That 'tis a very honorable thing
To thrive by dirty ways. But let me rest
On better ground, the unanswerable defence.
The Pig is a Philosopher, who knows
No prejudice. Dirt! What is dirt?
If matter, why the delicate dish that tempts
The o'er gorged epicure is nothing more.
And there—that breeze
Pleads with me, and has won thee to the smile
That speaks conviction. O'er yon blossomed field
Of beans it came, and thoughts of bacon rise."

For the Committee,
F. POOLE.

ON THE DAIRY.

The Committee on the Dairy, in presenting their Report, would remark, that the first prerequisite in making good butter is to have good cows. And to be sure in this respect, every farmer should test the value of each cow by milking and preserving her milk separately, and noting carefully the quantity required to make a pound of butter. By a very little attention in this way, it may

be readily ascertained whether a cow is worth keeping for Dairy puposes. Cases have occurred where a cow has been kept for years with several others and their milk put together, on using it separately, it was found that butter could not be made from it. Thus for the want of attention in this respect, much loss may be sustained. There are, undoubtedly, many cows kept which add little or nothing to the value of the dairy.

The kind and quantity of salt used, is of much consequence. The Liverpool bag salt should be rejected; it contains impurities, and will not preserve butter. Rock salt, perfectly pulverized, and three-fourths of an ounce used to a pound of butter, will preserve it well.

There were eight entries of butter, three of cheese, and two parcels of butter for exhibition, only, by Joseph Andrews, of Essex, and William Johnson, of Andover, which appeared to be good.

The Committee after a careful inspection of the samples exhibited, award for June butter to

George W. Dodge, of Wenham, the first premium, of ten dollars.

To Mrs. Abi Worcester, of Byfield, the second, of eight dollars.

To Paul P. Pillsbury, of Andover, the third, of six dollars.

For butter, made between the 20th of June and 20th of September,

To Allen W. Dodge, of Hamilton, the first premium, of ten dollars.

To Nathaniel Felton, of Danvers, the second, of eight dollars.

To Benjamin Boynton, of Andover, the third, of six dollars.

Three parcels of cheese were presented, which were fine in appearance, viz. by Isaac Carruth, Daniel P. Stevens, and Benjamin Boynton, of Andover; but, inasmuch as no premiums were offered by the Society, for cheese, none could be awarded.

The Committee did not find the butter of Thomas McMahon, of Ipswich; and the statement of Dean Rob-

inson, of West Newbury, did not describe the feeding of his cows, as required.

Annexed are the statements of the successful claimants.

For the Committee,

JOSIAH NEWHALL.

Sept. 25, 1844.

GEORGE W. DODGE'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN,—I present for your inspection two boxes of September butter, containing 29 lbs., being a specimen of 416 lbs. made between the 20th of May, and 20th of September, from the milk of five cows; also, a pot of June butter, containing 25 lbs. Besides making the above named quantity of butter, we have sold seventy gallons of milk, and used at least half a gallon per day in the family. The feed of the cows was a common pasture, until August; since then, they have had a small foddering of corn stalks at night.

Process of making. The milk is strained into tin pans, where it stands from thirty-six to forty-eight hours, when it is skimmed and the cream put into tin pails, standing on the bottom of a cool cellar. A little salt is added to the cream which is frequently stirred. We churn twice a week. When the butter comes, the butter-milk is thoroughly worked out, and the butter salted with an ounce to the pound. After twenty-four hours it is again worked and weighed.

GEORGE W. DODGE.

Wenham, Sept. 21, 1844.

MRS. ABI WORCESTER'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN,—I offer for your inspection the following lot of butter:

Twenty-one lbs. seven ounces of butter, made from one cow, from May 12th to May 31st.

Forty-one lbs. two ounces, made in the month of June from two cows.

Seventy-nine lbs. eight ounces, made from July 1st to Sept. 22d, from two cows.

The cows were young, one three and the other four years old. Their keeping was ordinary pasturing, no extra keeping at all.

Manner of making and preserving the butter :—The cream was churned twice a week, then the butter was washed in cold water. One ounce of fine butter salt was used to one pound of butter, and well worked in. After it had remained twenty-four hours, it was worked over and packed down solid in a stone pot and covered with strong brine.

ABI WORCESTER.

Byfield, Sept. 25, 1844.

PAUL P. PILLSBURY'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN,—I present for your inspection one pot of June butter, containing 35 lbs. being a specimen of 164 lbs. made between the 1st of June and the 9th of July, from four cows.

Process of making—The milk is strained into tin pans and stands thirty-six hours. The cream is then taken off and put into a tin firkin, and kept until it is ready to be churned, which is twice a week. The butter is well rinsed in cold water and then salted with one ounce of salt to a pound of butter. In about twenty-four hours it is worked again and packed down and kept on the bottom of the cellar, covered with fine salt. The feed of the cows was a common pasture.

PAUL P. PILLSBURY.

Andover, Sept. 24, 1844.

ALLEN W. DODGE'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN,—I present as a specimen of September butter, the three boxes containing 31 lbs. churned the last week, the whole quantity made the present season,

up to that time, being 1157 lbs. The following statement I send in compliance with the rules of the Society :

1. The number of cows kept is twelve, besides one two-year-old heifer—all of native breed, and a portion of them, of my own raising.

2. Their feed in the winter was hay, of good quality, so that they came from the barn in the spring, in good flesh. Their pasture has been of fair quality, though it has suffered much from the dryness of the season. Since the first of August, they have had the run of a part of my mowing lots, and from the 20th of that month, have been fed at night with green corn fodder, raised for this purpose.

3. Treatment of milk and cream before churning :—Strain the milk in tin pans ; place them in a cool cellar for the cream to rise ; when sufficiently risen, which will be according to the weather, separate the cream from the milk, and the day previous to churning lower the cream in tin pails or cans, into a well, in order to become cool. By this means, the butter will come of a hard consistency, and no difficulty is experienced in working it thoroughly.

5. Mode of churning :—Rinse the churn with cold water over night. The churn used is Galt's—various other kinds have been tried, such as the barrel churn, and the rocking churn, but with less favorable results. The time occupied in churning, when the cream is quite cold, is greater than if it was not subjected to the process of cooling, but the quality and condition of the butter amply repay for the time and labor expended upon it. Churn once a week.

5. The method of freeing the butter from the milk, is by thoroughly working the butter with the hands. Rinsing it with cold water in the churn, we have seldom practised, from a conviction that the butter is injured by this process. The day after being worked over, it is put into lumps of one pound each, for market.

6. Salting of the butter. Use the ground rock salt, and salt to suit the taste. Add no saltpetre, sugar, nor other substances.

Besides making the above quantity of butter, we have used milk for two families, about two gallons per day, during the season.

Yours respectfully,

ALLEN W. DODGE.

Hamilton, Sept. 23, 1844.

NATHANIEL FELTON'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN,—I present for your inspection two boxes of September butter, containing 25 lbs, being a specimen of 861 lbs. made since the 20th of May. This butter was made from the milk of eight cows. The feed was common pasturing till the first of August, since then they have had corn stalks once a day. We have used milk for ten in the family.

Process of making:—The milk is strained into tin pans; it stands from thirty-six to forty-eight hours, in a cool cellar, when the cream is taken off, put into tin pails, and stirred every day. We churn once a week; during the warmest weather the cream is placed in the well about twelve hours before churning. After it is churned the butter-milk is thoroughly worked out and the butter is salted with three quarters of an ounce to the pound. After standing about an hour it is again worked and weighed, each pound separately.

One of the cows has been in milk seventeen months.

NATHANIEL FELTON.

South Danvers, Sept. 24, 1844.

BENJAMIN BOYNTON'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN,—The butter I offer for inspection, was made the present month. I offer 25 lbs., being a sample of 190 lbs. This butter was made from the milk of three (small) native cows. Their feed was pasturing

only; we have also made cheese, four meal, 277 lbs., and new milk 125 lbs., and used the milk necessary for seven persons.

Process of making:—The milk is strained into tin pans. It stands forty-eight hours in a cool cellar, when the cream is taken off, put in a pot and stirred once a day. We churn once a week. After the butter is churned the butter-milk is turned from it, and water is added twice, and churned to separate the butter-milk from it. One ounce of salt is used to a pound of butter, which is worked twice after.

BENJAMIN BOYNTON.

Andover, Sept. 24, 1844.

ON COWS AND HEIFERS.

The Committee upon milch cows and heifers have attended the duty assigned them, and make the following report upon all the animals presented, and coming within the rules and regulations of the Society:

They award to Joseph P. Pond, of Salem, for his milch cow, the first premium of $10,00

To Wm. Chase, of Salem, for his milch cow, the second premium, 7,00

To Joseph Horton, of Ipswich, for his milch cow, the third premium, 5,00

They also award to Josiah Crosby, of Andover, for his heifer, the first premium, 7,00

All which is respectfully submitted,

By your Committee,

NATHANIEL HARRIS.
JOHN WHITTREDGE,
HEZEKIAH F. STEVENS.

JOSEPH P. POND'S STATEMENT.

The cow offered for a premium, by the subscriber, is nine years old, and is of native breed. She calved Nov. 16th, 1843; calf taken from her at nine days old. The milk of course could not be weighed while the calf was

with her, but in this statement has been put down to average the same as the next succeeding nine days and this statement embraces ten months, or three hundred and five days, and during that time she has given ten thousand six hundred and sixty-five and three quarter pounds of milk, making a daily average of $34\frac{2}{3}\frac{5}{0}\frac{5}{5}$ pounds, ending this day, and the milk is of a very uncommon rich quality, but has never been tried for butter, because no opportunity has offered, and her milk has been sold among my neighbors daily. Her keeping has been from time of calving, during the winter, half a bushel of carrots each night and morning, with four pounds of shorts at noon, with what second crop hay she would eat, and since, during the summer, her feed has been very short, and I have been obliged to feed her night and morning, say about eight pounds of shorts per day, or its equivalent.

JOSEPH P. POND.

Salem, Sept. 16, 1844.

WILLIAM CHASE'S STATEMENT.

Milch cow, owned by William Chase, of Salem. Her calf was taken from her, June 8th, 1844. For the remaining twenty-one days in June, she gave eight hundred and ninety-nine lbs. of strained milk, being a small fraction short of forty-three lbs. or a fraction more than seventeen quarts per day. For three months commencing June 9th, she gave three thousand one hundred and eighty-eight lbs., being an average of about thirty-five lbs. or fourteen quarts per day. Her feed has been an average of two quarts of meal and two of shorts per day with a poor pasture.

Her former owner states that the quantity of milk given by her last year in a good pasture, with no other feed, was considerably larger; thereby showing the advantage of a good pasture, for the want of which, allowance should be made. Her milk is of the first quality.

In the above estimate, the quart is reckoned at two and one half pounds. Her age is eight or nine years.

WILLIAM CHASE.

JOSEPH HORTON'S STATEMENT.

To the Committee on Cows and Heifers:

GENTLEMEN,—I enter for premium my brindle cow, four years old. She lost her calf the 3d of May last.—From the 12th to the 15th of May, she made $3\frac{1}{2}$ lbs. butter,

The week ending			May 21st,	she made		$7\frac{1}{2}$	"	"
"	"	"	" 28th,	"	"	$8\frac{3}{4}$	"	"
Two weeks	"		June 11th,	"	"	$19\frac{1}{2}$	"	"
One week	"		" 18th,	"	"	$8\frac{1}{2}$	"	"
"	"	"	" 25th,	"	"	$8\frac{1}{2}$	"	"
"	"	"	July 2d,	"	"	$7\frac{3}{4}$	"	"
"	"	"	" 9th,	"	"	7	"	"
Two weeks	"		" 23d,	"	"	13	"	"
"	"	"	Aug 6th,	"	"	13	"	"
"	"	"	" 20th,	"	"	13	"	"
"	"	"	Sept 3d,	"	"	15	"	"
"	"	"	" 17th,	"	"	14	"	"

Making - - - $138\frac{1}{2}$ pounds in eighteen weeks and three days, and averaging seven and a half lbs. per week.

JOSEPH HORTON.

Ipswich, Sept. 18, 1844.

JOSIAH CROSBY'S STATEMENT.

To the Committee on Cows and Heifers:

GENTLEMEN,—The heifer which I have entered this day for a premium, was rsised on my farm. She is two years and eleven months old. She was sired by a full blood Durham bull, from stock imported by Mr. Silsbee, of Bradford. She calved about the last of June, and has had no extra keeping. She has given from twelve to fourteen quarts of milk per day, and in a few instances

has given sixteen quarts per day. She has averaged seven lbs of butter per week from the time she calved, to the present date.

If any farther information in regard to her is desired by the Committee, I shall be on the ground, and shall be happy to furnish it.

Yours, respectfully,

JOSIAH CROSBY.

North Andover, Sept. 24, 1844.

ON BULLS.

The Committee on bulls, consisting of Jedediah W. Barker, Andover, Samuel Perley, Jr., Boxford, and Theodore Andrews, Ipswich,—having attended to that duty would respectfully report:

The whole number of animals present was thirteen. They were mostly of a good quality, and the Committee were of a unanimous opinion to award the premiums as follows:

1st. Premium to Isaiah Rogers, of Ipswich, for his Durham bull, three years old, $8,00

2d. To the town of Ipswich, native bull, three years old, $6,00

3d. To James D. Herrick, Methuen, for his bull, half Ayrshire, half native, $4,00

There were three fine bull calves presented, but as there was no premium offered, the Committe would recommend, if consistent with the rules of the Society, a gratuity of two dollars to John Dole, of Rowley, for his calf, one hundred and sixty-two days old.

Also, one dollar to Daniel Adams, Jr., of Newbury, for his calf three months and five days old, native breed.

Also, one dollar to Adam Nesmith, of Beverly, for his calf four months old.

All of which is respectfully submitted.

Per order,

J. W. BARKER, *Chairman.*

ON STEERS.

The Committee on Steers report:—That but two pairs of yearlings, one pair of two years old, and one pair of three years old steers were entered for premium. They consider the exhibition of cattle of this class rather inferior to that of former years.

They award the first premium, of four dollars, to Theodore Dodge, of Wenham, for his yearling twin steers.

To Martha Chaplin, of Georgetown, for her three year old steers, the first premium, of seven dollars.

The Committee would remark, that Mr. Dodge was the only owner or agent, that could be found by them, to give any information respecting their steers.

Per order of the Committee,

JESSE SHELDEN, *Chairman.*

ON WORKING OXEN AND STEERS.

Committee—Daniel Adams, Jr., Newbury; Robert Kimball, Ipswich; Josiah Low, Essex; George Dane, Hamilton; Albert Coggswell, Essex.

The Committee on Working Oxen and Steers, have attended to the duties assigned them, and report:

That the number of working oxen exhibited at the show, was unusually small, nine pair only were entered for premium; seven of which appeared on the ground, and their strength and training were tested by drawing a loaded wagon, containing two tons of stones; weight of wagon 1960, total 5960 lbs. from near the bridge, up the hill to the flat in front of the Court House. The cattle as a whole, performed their task quite well. Some, however, were not very well trained to backing; a qualification quite necessary for a perfect pair of working oxen. The Committee, after much consideration, unanimously award

To Ebenezer Jenkins, of Andover, the first premium of $10 00

To Jacob Brown, of Ipswich, the second premium of 7 00

To William Williams, of Rowley, the third premium of 5 00

There was but one pair of steers, less than four years old, entered for premium, and these were owned by Mr. William Brown, of Danvers. The Committee were of opinion, that in consequence of his steers being much smaller than the oxen, the load should be lightened some six or eight hundred pounds; but Mr. Brown chose to try them with the same load that was drawn by the oxen, and the Committee are happy to say, that they performed the task, both up and down the hill, to their perfect satisfaction, and also to the admiration and satisfaction, as they believe, of every spectator; and with much pleasure they award to Mr. Brown the first premium of *seven dollars*, for his beautiful steers, three years and ten months old.

DANIEL ADAMS, Jr. *Chairman.*

ON FAT CATTLE.

The Committee on Fat Cattle report, that there were but three entries by two claimants for premiums.

The Committee have decided to award the first premium, of ten dollars, to the fat off ox of Messrs. John and Josiah Lamson, of Topsfield.

And the second premium, of eight dollars, to the off ox of D. S. Caldwell of Byfield.

N. W. HAZEN,
ASA NELSON,
BENJAMIN SCOTT,
JOSEPH YEATON.

Ipswich, Sept. 25, 1844.

JOHN AND JOSIAH LAMSON'S STATEMENT.

To the Committee on Fat Cattle:

Gentlemen,—We enter for premium, two fat oxen, seven years old. They were kept during the last winter and spring, upon common meadow and salt hay, till late in April, after which, they were partly fed upon English hay while the spring work continued, and no

meal or other grain was given them till after the middle of May, and from that time to the present they have had about three quarts each, of Indian meal per day—with a very small increase for the last two or three weeks. They have been kept in one ordinary pasture, without change, to this time, and were put to pasture about the first of June. Nearly all the work upon the farm was performed by this yoke during the winter, as we had no others shod—they also performed a large share of the spring work, and have occasionally been used to the yoke during the summer. All of which is respectfully submitted, by

Your obedient servants,

JOHN LAMSON,
JOSIAH LAMSON,

Topsfield, Sept. 25, 1844.

D. S. CALDWELL'S STATEMENT.

To the Committee on Fat Cattle:

GENTLEMEN,—I present for a premium, one fat Ox, seven years old, which, with his mate, has performed most of the work on a farm of two hundred acres for two years past, on ordinary keeping. They have been fed with salt hay in winter, English hay in spring, and common pasture in summer. They have not to my knowledge had the amount of one bushel of corn, meal, or roots. Besides the work on the farm, they have worked four days last week for neighbors.

D. S. CALDWELL.

Byfield, Sept. 23, 1844.

ON PLOUGHING WITH DOUBLE TEAMS.

THE Committee on ploughing with double teams, report that there were eleven entries, as follows:

By Stephen Emerson, of Middleton.
" George P. Wilkins, " "

By Joshua Chandler, of Andover.
" Joseph Chandler, jr., " "
" Jacob S. Phelps, " "
" Ebenezer Jenkins, " "
" Dean Robinson, " West Newbury.
" Benjamin Poore, " "
" Jacob Brown, " Ipswich.
" Micajah Treadwell, " "
" Allen W. Dodge, " Hamilton.

The lots for double teams were all staked out and numbered from 1 to 11.

The Committee consider this an improvement upon the former practice of having the lots run out by a plough, as the skill of the ploughman and teamster, and the training of the teams, are by this course tested in drawing straight furrows, an item in good ploughing which should not be lost sight of, where work is brought to that perfection it should be in a county which has been so long under cultivation.

The team entered by Allen W. Dodge of Hamilton, (a team of likely young oxen,) near the commencement of the work, broke their plough—and after one or two unsuccessful attempts to repair it, Mr. Dodge signified to the Committee his wish to withdraw, and not be considered as a competitor.

The land selected for the ploughing match by the Committee of Arrangements was level and of uniform quality. It was light loam with a tender sward, and owing to the drought did not turn as well, and show as smooth a surface after ploughing, as land more moist or with tougher sward. Still the Committee are of opinion, making due allowance for those circumstances, the ploughing was better than on former years. The teams considered as competitors all did work worthy of a premium; and as the Committee had but four to award they had some difficulty in coming to a conclusion how to award them. But after repeated examination of the work, as to depth, width, and straightness of the furrow, the manner of turning, and also some slight reference as to the time consumed in accomplishing the

work, they unanimously agreed to award the premiums offered by the Society, as follows:

To Micajah Treadwell, of Ipswich, first premium of $10 00

To Benjamin Poore, of Indian Hill, West Newbury, second premium of 8 00

To Ebenezer Jenkins, of Andover, third premium of 6 00

To George P. Wilkins, of Middleton, fourth premium of 4 00

Micajah Treadwell used Ruggles, Nourse & Mason's Plough, Eagle No. 3—ploughed thirty-six furrows in thirty-five minutes.

Benjamin Poore, used Ruggles & Co.'s Sward C—ploughed thirty-five furrows in forty-one minutes.

Ebenezer Jenkins used Ruggles & Co.'s Improved Eagle No. 4—ploughed thirty-two furrows in thirty-seven minutes.

George P. Wilkins used Prouty's No. 26—ploughed thirty-four furrows in forty-four minutes.

Jacob Brown used Ruggles & Co.'s Improved Eagle No. 4—ploughed thirty-four furrows in forty minutes.

Dean Robinson used Ruggles & Co.'s Improved Eagle No. 4—ploughed thirty-three furrows in forty minutes.

Joseph Chandler, Jr, used Ruggles & Co.'s Improved Eagle No. 4—ploughed thirty-two furrows in thirty-six minutes.

Jabob S. Phillips used Ruggles & Co.'s Improved Eagle No. 4—ploughed thirty-two furrows in thirty-nine minutes.

Joshua Chandler used Prouty's No. 26—ploughed thirty-four furrows in forty minutes.

Stephen Emerson used Prouty's No. 26—ploughed thirty-one furrows in thirty-two minutes.

The Prouty Ploughs Centre Draught No. 26, were furnished with an iron rod secured by a shackle to the coulter of the plough. The rod extended to the end of the plough beam, and was there attached to a slide, so that the plough could be varied more from or to the land, than by the ordinary way of fastening the chain to Prouty's

or Ruggles' plough. The Committee saw no benefit from this alteration, other than turning the plough more or less to the land not ploughed, than could be done by the previous fixture. With a plough properly constructed they are not aware but the chance for varying its direction was sufficient before ; and therefore, they are not prepared to approve of the alteration. Still, as no one on the ploughing-field attempted an explanation why this fixture was attached to the plough, the Committee in the hurry of examination, might overlook the object in adding it. And it may possess advantages which they did not discover.

By a rule of the Society, the ploughing was required to be seven inches deep. Some of the ploughs were gaged to rather below that depth, and as the land ploughed had not previously been stirred so deep, those ploughs which went the shoalest turned the furrow the best, and showed the smoothest work.

The Committee will notice one defect in the ploughing, which was pretty general. An attempt to take more width of furrow than the plough was designed to turn. What is a proper width for the furrow-slice to be turned at once, may be a very nice point to decide ; but whatever width that may be, the plough should be suffered to go fair and even upon its irons, and altered at the draught to regulate the width.

The Improved Eagle No. 4, and Centre Draught No. 26, will turn well, properly guided, twelve to fourteen inches. And perhaps it is a good rule that the width of the furrow should be double to its depth.

For the Committee,

MOSES NEWELL.

WITH SINGLE TEAMS.

The Committee on ploughing with single teams report: That for some reason, which the Committee do not understand, but two teams were entered for premium. The ploughs used by both, were manufactured by Ruggles, Nourse & Co., and were in some respects different.

The plough used by Moses Pettingill, as the Committee are informed, was, in some of its parts constructed upon a different plan from the ploughs heretofore manufactured by that company. That plough appeared to require less strength of team and less exertion on the part of the holder, than the other plough,—which was not constructed on the same plan.

Moses Pettingill ploughed thirty-four furrows in fifty-seven minutes. And the Committee unanimously award him the first premium of $8 00

Ralph H. Chandler ploughed thirty-two furrows in sixty-two minutes,—and to him is awarded the second premium of $6 00

Respectfully submitted,

For the Committee,

T. E. PAYSON.

WITH HORSE TEAMS.

The Committee on ploughing with horses, have attended to the duty assigned them, and make the following report, viz :—There were five teams entered for premiums, but four appeared on the ground, viz :

The team of Josiah Crosby, of North Andover,
" " " Moody B. Abbott, of "
" " " Moses Pettingill, " Topsfield,
" " " Joseph V. Woodman, of Haverhill.

The lots were drawn by ticket as follows :

Moses Pettingill, No. 1, ploughed thirty-five square rods in forty-four minutes—thirty-five furrows.

Joseph V. Woodman, No. 2, ploughed thirty-five square rods in forty-four minutes—thirty-four furrows.

Josiah Crosby, No. 3, ploughed thirty-five square rods in forty minutes—thirty-five furrows.

Moody B. Abbot, No. 4, ploughed thirty-five square rods in forty minutes—thirty-five furrows.

The work was so well done by all the competitors that your Committee were at a stand to which to award the premiums ; but finally came to the conclusion and awarded the premiums as follows, viz :

To Moses Pettingill, of Topsfield, the first premium of $6 00

To Joseph V. Woodman, of Haverhill, second premium of 4 00

Your Committee regret that there are not more premiums offered for ploughing with horse teams, and of a higher order, as the facilities are so much greater for ploughing with them, than with ox teams. All which is submitted,

For the Committee,

SOLOMON LOWE.

ON SUB-SOIL PLOUGHING.

The Committee on "sub-soil ploughing," report:— That only one sub-soil plough was submitted to their examination. This was of the medium size, and when drawn by two yoke of oxen stirred the earth to the depth of about twelve inches. It well accomplished the object of breaking the sub-soil without bringing it to the surface. This plough was not entered for a premium, but exhibited by Mr. Benjamin Poore, of West Newbury, to whom the Society has been so often and largely indebted for augmenting the interest of its shows. Your Committee are led by the concurring testimony of those who, in Great Britain, and in our own country, have made trials of the sub-soil plough, to recommend it to the attention and trial of the farmers of Essex. It is only about twenty years since it was invented, in Scotland, and its introduction into this country is of a comparatively recent date. Yet, several of our enterprising plough manufacturers have already succeeded in producing an article much cheaper than the English one, and which performs the work equally well. The object of the sub-soil plough is to follow in the surface furrow, and to break up the sub-soil to the depth of from eight to sixteen inches, according to the size of the plough, without bringing it to the surface. It thus deepens and fertilizes the soil by exposing it to the action of light

and air, without bringing the lower stratum to the surface and thereby causing sterility. To the successful cultivation of a flat wet soil resting on a hard clay pan, the use of the sub-soil plough is almost indispensable. It is only by breaking up and opening this pan, that the superfluous water can be drained off so as to prevent the crop from being injured by heavy rains. And by deepening and loosening this sub-soil, the roots of plants are enabled to strike deeper, and the plant is protected from the drought which causes such soils in mid-summer to bake and crack. One of your Committee has made a partial trial of a sub-soil plough the past season on land of this description, with manifest advantage. And it has been found to be equally beneficial to deepen dry and gravelly soils with the sub-soil plough, as thereby the plants will take deeper root and bear drought much better. Instances are given where the crops on such soils have been doubled simply by sub-soil ploughing. Several interesting notices of the advantages and successful results of the use of the sub-soil plough may be found in the reports of the late able Agricultural Commissioner of the Commonwealth, who very early brought it to the notice of our farmers. And your Committee hazard the opinion that before many years shall have elapsed, the use of the sub-soil plough will be considered by the good farmers of this County an essential part of good husbandry.

In behalf of the Committee,
JAMES H. DUNCAN.

ON SHEEP AND COLTS.

The Committee on sheep and colts have in some measure attended to the duties assigned them, and report: That there were ten sheep entered for premium, but none were found in the pens. Your Committee understood that the owner, who resides in Ipswich, made several attempts to drive them to the place of exhibition, but without success.

There were two colts entered, one by Josiah Crosby, of Andover, and one by Samuel Wilkins, of Middleton, but as there was no premium offered by the Society for animals of this description, though in previous years gratuities have been awarded for them, and as your Committee found nothing remarkable in their outward appearance, they make no award respecting them.

For the Committee,
MOSES FRENCH.

ON IMPROVED AGRICULTURAL IMPLEMENTS.

The Committee on Improved Agricultural Implements report,—That the following articles were exhibited:

By Mr. Hovey, of Worcester, a Patent Spiral Revolving Cutter.

By Ruggles, Nourse, & Mason, a Fanning-mill, and several fine specimens of Partridge's Manure Forks.

By Benjamin Poore, of Indian Hill Farm, near Newburyport, a Hassock Cutter.

The Committee regretted that they could not see the Straw Cutter and Fanning-mill in operation; they know, however, that they are valuable implements and great improvements on those which have been long in common use. The Manure Forks were very neat tools, and it seems hardly possible to make them more perfect. The Society are much indebted to the gentlemen who sent these articles, but as they do not come within the prescribed rules, the Committee do not feel authorized to recommend any premium. The Hassock Cutter appeared to be well adapted to the purpose it is designed for, and in reclaiming meadow lands, which are infested with hassocks, it would prove a great saving of labor. The Committee recommend that Mr. Poore's letter be published and that a gratuity of three dollars be awarded to him.

Respectfully submitted,
DANIEL P. KING, } *Committee.*
HORACE WARE. }

Nov. 1, 1844.

BENJAMIN POORE'S STATEMENT.

Hon. D. P. King, Chairman Committee on Agricultural Implements.

Sir—I present for your inspection and for premium, if you think it deserving, one Hassock Cutter. The shape is the letter V, if I may so describe it, made from two pieces of cast steel, three feet long, three and a half inches wide, one half inch thick, ground to an edge on the inside of the V. A substantial bar of iron is raised over it and secured to it, as also handles like those of a plough. The V, as I term it, is drawn by a chain from this bar of iron and the top passes each side of the hassock, and of course cuts it off smoothly, roots and all. It is no labor to hold it—one yoke of oxen and two boys will cut more per day, with ease to the cattle and boys, than twenty men, and perform the work better than any one could do it in the usual way. It was originally invented by a Mr. I. Hill, of Billerica, who did not connect the cutters or shears, so that a strip in consequence, was left uncut. By connecting them, the ground is now cut entirely smooth.

Respectfully your obedient servant,

BENJ. POORE.

Indian Hill Farm, near Newburyport, Sept. 1844.

ON IRRIGATION.

The Committee on Irrigation would submit the following remarks on the subject of their commission, not having received any invitations to view. In the absence of all claims, the Committee on irrigation are obliged to work without stock—to make bricks without straw.*

Although a premium has been offered by the Society for some dozen of years, of twenty or thirty dollars for the best experiments in improving lands by means of irrigation, yet but few persons have come forward to claim it, unless the reclaiming wet meadows should come with-

* A rule of the Society requires a report, whether claims are entered or not, and having been on the Committee three or four years, we see no other way of getting off, than by offering a report.

in this branch of husbandry. The reclaiming wet meadows and swamp lands has been somewhat extensively and very successfully attended to, and premiums awarded. Of the fourteen thousand acres in the County, of these waste lands, probably one thousand have been fully reclaimed and made *very* productive lands.

But irrigation includes improvement by adding to, as well as taking water from lands. By the judicious application of water to lands, the product may be increased from one to three or four hundred per cent., without the addition of any other material. Running water increases vegetation, especially the grasses, while stagnant water destroys almost all kinds. It would not be supposed, at first view, that the pure clear water from a living fountain would have much fertilizing matter in it; but it will be found that when exposed to the sun, it will become impure and change to a green color sooner than water taken from a stagnant pool. It would therefore seem that running waters contain principles which they would not from their appearance be supposed to have. These principles are fertilizing when suitably applied to lands.

All our interval lands bordering on streams, owe their richness and value to their being frequently overflowed by the freshets which swell the streams beyond their common boundaries. Their fertility undoubtedly depends, likewise, upon the deposits which these troubled waters leave on the surface. But who has not observed the runs and wet parts of pasture lands become green the earliest in the spring, and hold so, the longest, and actually afford the most feed through the year? There does not seem to be much turbidness for deposits in those rills, there must then be some fertilizing properties in the water itself. Plants generally, and grasses particularly, are composed mostly of water, the whole of which is not lost in drying.

Will it not be worth the experiment then, for those who have streams and sloping land to accommodate, to make the trial of diverting the water, as experience shall warrant, over the adjacent lands, supplying more or less,

constantly or periodically, as shall prove to be most advantageous. This may be done sometimes by the plough alone. But this is not the great business of irrigation. The great and extended business of irrigation belongs to flat lands, where the land can be raised in ridges, by the plough or otherwise, and the water let on or off at pleasure, by conducting it over the lands on the ridges, when necessary for the supply of moisture ; and likewise by diking and ditching, so that for certain portions of the year, the lands may be flowed, and other parts drained, This can be done by flood-gates when the tides will serve, on the borders of the sea, and by dams and sluice-ways, at a distance from the sea, the details of which will be found in works upon the subject.

Large quantities of barren land, have, by these means been made very productive, in the old countries, whose rivers accommodated ; in one instance, between four and five hundred acres in one operation, were successfully reclaimed and made productive, by diverting the waters of a turbid stream over them.

For the Committee,

R. A. MERRIAM.

ON THE CULTIVATION OF GRAIN AND MIXED CROPS.

The Committee on mixed and grain crops respectfully report :

That three entries for premiums have been made, and as the several crops of grain, by the statements hereto annexed, were very large, the claimants are, in the opinion of your Committee, respectively entitled to the first premiums. They accordingly recommend that there be awarded :

To William Bartlett, of Newburyport, for a crop of Indian corn, the first premium, $8 00

To J. Hammond Coggeshall, of Lynn, for a crop of barley, the first premium, 8 00

To Paul P. Pillsbury, of Andover, for a crop of oats, the first premium, 8 00

The Committee also recommend that the statement of Joshua Tappan be published with the reports of the Society, for further consideration.

ASA T. NEWHALL,
MOSES FRENCH,
ANDREW DODGE.

Ipswich, Nov. 29, 1844.

WILLIAM BARTLETT'S STATEMENT.

To Asa T. Newhall, Esq., Lynnfield:

Sir,—Enclosed is a certificate of Mr Tristram Little, of Newbury, of the measurement of a piece of ground planted by me, to corn, the past season. Likewise the certificate of the young man who did my work. The land is a fine loam, in some places where it has been filled up two feet depth of soil, in another not more than ten inches, as some yellow dirt was brought up when it was ploughed. It has been under the plough and cropped with corn and potatoes, for the last seven years, and not very highly manured. The manure that was put on the past season was various in its kind, and consisted of five and one one half cart loads of leeched sumac, obtained from the wool fullers; six loads of horse stable manure, six loads cattle and hog manure, three loads dry rye straw cut up, five loads of butts of corn, old potato vines, leaves, and, partly in a decomposed state, two loads cobs and two loads dry husks, with two loads of pickled fish, which was put into a pit in August 1843, and taken out in May 1844. The above manure was spread on one acre and one hundred and fifty rods, of which what was planted to corn was a part. The manure was spread on, and put under the soil by being raked into the furrow after the plough, and it was very nearly all covered.

The ground was ploughed fourteen or fifteen inches deep, by one of D. Prouty's rod A Ploughs, and what was stirred by the plough, was nearly all turned over, as I have had an addition put to the mould board nearly as high as the beam. After the rod A plough passed, which was drawn by four yoke of oxen, it was followed

by the sub-soil plough, drawn by one yoke of oxen and one horse, which stirred the ground from five to eight inches deep, so that I concluded that the land was loosened twenty inches deep, after it was ploughed. It was harrowed four times, for the purpose of breaking the sods; then planted; the rows four feet apart lengthwise, and three and one half feet apart breadthwise, and there were planted five thousand one hundred and fifty hills. The lumps were broken by the hoe as soon as the corn came up, and subsequently hoed three times. The corn was topped between the 25th of Sept. and the 1st of October, and was harvested between the 18th and 25th of Oct. The quantity was two hundred and fifty-three bushels of ninety ears each, forty-one traces of fifty ears selected as the best, two hundred and six double ears, and five baskets mouldy and imperfect corn. One hundred and ninety ears of the average quality of corn make a bushel of shelled corn, and one hundred and seventy to one hundred and eighty of the selected ears make a bushel of shelled corn. I have put them down at one hundred and eighty, but it does not take so much, as I have shelled a half bushel from eighty ears of the best.

The certificate of Mr. Little does not state the accurate quantity of land, as he made a mistake, in casting the measurement, of five rods too little, the true quantity being two hundred and thirty-four rods, instead of two hundred and twenty-nine. The quantity of corn grown on two hundred and thirty-four rods of land, estimating one hundred and ninety ears of the average to produce a bushel, one hundred and eighty ears of the traces, the five baskets of unripe corn at two bushels, and two hundred and six double ears one bushel, gives one hundred and thirty-four bushels for the whole, or ninety-one and a half bushels per acre. The number of kernels put in a hill was five.

The above crop of corn I offer for premium,—ninety-one and a half bushels.

I am respectfully, your obedient servant,

WM. BARTLET.

Newburyport, Nov. 20, 1844.

This may certify that I have husked and measured the foregoing quantities of corn, taken from the said ground, and that the statement is true.

WILLIAM L. FARNHAM.

Newburyport, Nov. 21, 1844.

This may certify that at the request of Mr. William Bartlet, I have surveyed a piece of land which was planted with corn the past season, and there was one acre and sixty-nine rods.

TRISTRAM LITTLE, *Surveyor.*

Newbury, Nov. 6, 1844.

J. HAMMOND COGGESHALL'S STATEMENT.

To the Committee on Grain Crops:

GENTLEMEN,—I offer for premium a crop of barley, one hundred and ninety-one and a half bushels of clean grain, the product of three acres and eighty-five rods, as per certificate annexed. The soil in which it grew is a dark loam, ten or twelve inches deep, fine clay sub-soil. In 1842 a good crop of barley was raised on the same field—then about forty bbls. of fish were spread on the stubble and ploughed in and a very heavy crop of turnips grown in the fall. In 1843 a good crop of corn was grown, manured in the hill with barn manure made under the barn, a small shovel full to a hill, and in June or July, two fish, (Menhaden,) were put by each hill and covered with a hoe. For this crop which I offer, no additional manure was applied. On the 15th of last April the hills were split by one horse running a large plough on each side of the corn stubble. The ground was somewhat wet, but dried fast after breaking and without clodding. It remained till the 18th, when it was fully dry and was then harrowed across the furrow, tearing up the corn stalks and levelling the furrows. Some parts of the field were harrowed two or three times, and all so much as to effectually pulverize the soil. The seed was soaked from twelve to eighteen hours in a solution of poudrette, (two qts. of poudrette to five gallons rain

water,) and all the seed that did not sink, after standing an hour or two, was carefully skimmed off. About one eighth of an acre was sowed with unsoaked seed, and the difference when the barley came up could easily be distinguished, that from the soaked seed being at least a week earlier, and the straw much longer, but there was no perceptible difference in the *grain* when threshed, though the whole crop is far superior to the seed sown. The quantity sown was something more than a bushel and a half per acre, harrowed in with a light harrow; two bushels Timothy, three pecks of Red-top, and six lbs. of Southern clover being brushed in both ways, and the whole rolled with a heavy roller. It was then laid off in lands with a plough and the drain furrow cleaned out with a spade, and grass seed scattered over them, and the whole of the grass now looks remarkably well. On the 23d of July we attempted to cradle it, but the straw was of unequal lengths, the heads very heavy, and even where it stood up well the fingers of the cradle did not separate sufficiently to prevent breaking off the heads and scattering out much of the grain; it was therefore mowed and left in the swath. On the 24th it rained most of the day, and for some days the weather was anything but suitable to dry the straw. It remained till the 29th in the swath, when it was put into loose cocks, having before lifted it up as it lay in the swath, to permit the air to circulate through it, but did not turn it as it scattered off very much. In consequence of the rain and the necessity of handling the grain three or four times, the waste was very great, so much so, that we did not expect to save more than a common crop. If the weather had been good, so as to have permitted the threshing of the grain without so much hindering, the average would, we think, have exceeded fifty-eight bushels, and a single acre could probably have been selected, that would have yielded sixty bushels. The seed was bought for two and four rowed, a small part of the yield is two, but the most is six rowed, little or none being four. Yours, with respect,

J. HAMMOND COGGESHALL.

Lynn, Sept. 24, 1844.

This may certify that the undersigned assisted in harvesting and measuring the above crop of barley, and testifies that the above statement, as to quantity, is correct; and I am of opinion that if the grain could have been harvested and threshed under more favorable circumstances, the crop would have been much greater.

EATON LOTHROP.

—

This may certify to whom it may concern, that I have this day surveyed a field in Lynn, belonging to Mr. J. H. Coggeshall, and find the contents three acres and one hundred and forty-eight rods,—of which, three acres, eighty-five rods are barley stubble, and sixty-three rods grass stubble—recently mowed.

ALONZO LEWIS.

Lynn, August 3, 1844.

PAUL P. PILLSBURY'S STATEMENT.

To the Committee on Grain Crops:

GENTLEMEN,—My experiment on a crop of oats, which I offer for premium, was conducted in the following manner:

The land was a worn-out wet meadow, which did not produce grass enough last year to pay for cutting. I took advantage of a dry time and burnt it over, and where it did not burn the sod off I dug it up and burnt it on the ground. After the ground froze I hauled on about eighty cart loads of loam to the acre, and spread it immediately. The whole cost of the above was sixteen days labor per acre. About the last of April last, I sowed two and a half bushels of oats per acre and raked it in; cost, one and a half days labor per acre. One acre measured off from a flat of about five acres, produced seventy-two and a half bushels. The above flat of ground had been previously ditched.

Yours, &c.,

PAUL P. PILLSBURY.

Andover, Nov. 5, 1844.

I hereby certify that I measured the foregoing lot of land, and the measure as above described is correct.

JACOB DASCOMB.

JOSHUA TOPPAN'S STATEMENT.

To the Committee on Grain Crops:

GENTLEMEN,—At your request I make my statement respecting my mode of cultivating or making corn produce from two to four fold. My method is by four years experience, viz :—In the latter part of June and the first of July I go among my corn and commence with those stalks that are not silked out, and take off the pollen or blowings, at the top. I take them with my thumb and finger lightly, and open the ear and put in the pollen, in the ear, opening with one hand and putting it in with the other. By so doing the crop of corn will yield more and there will not be any false ears. It takes time to do this work and it requires a careful person to do it. A leaf of the stalk will often cover over the ear so that the pollen cannot drop in naturally. The first year that I tried it was on ten hills of corn ; they yielded fifteen ears of corn to the hill. The second year forty hills ; average number of ears two hundred and twenty ears of corn good length. The third year, ten hills, eighty ears of sound corn. The fourth year eleven hills, with no false ears ; it yielded each hill four stalks, twelve ears to a hill. My method of manuring is to put the manure in the hill, one good shovel full of fine manure and put the corn on the top and cover two inches.

I make a practice of putting on my corn, or around each stalk, ashes ; say, three spoonfuls to each stalk. I think it helps the corn—it grows faster and does better with the ashes, than without. I should like to have my method of increasing the crop of corn tested by all the farmers in Essex. Would they not like to have the yield of corn increased, if it can be done by a little extra labor and pains ? Certainly they would.

I have made experiments on the potato crop, of which I should be glad to inform you more fully another year. I planted six hills of potatoes; each hill produced one bushel, heaping measure, and the potatoes were all as large as a goose egg.

Three persons witnessed my digging them—but I will say no more at present.

Your humble servant,

JOSHUA TOPPAN.

Newbury, Nov. 16, 1844.

ON FRUITS AND FLOWERS.

The Committee appointed to distribute the premiums and gratuities offered by the Society for fruits and flowers, before announcing their awards beg leave to congratulate it on the improvements in their cultivation, both as it respects quality and variety, which the specimens exhibited from year to year indicate, and although in regard to the quality of the fruit, its superiority in this over preceding years, may in part be attributed to the peculiar propitious season with which by the blessing of Divine Providence we have been favored, yet much of it must also be attributed to the increased attention given to this branch of agricultural pursuits and to the improved methods of culture adopted by the members of the Society. But whilst much has been done it is also to be remembered that very much more remains to do; much remains to be done in ascertaining by experiment what mode of culture, what soils and situations, are best adapted to the different varieties of fruits, before this branch of agriculture will have attained a due degree of perfection when compared with other branches of the same science. Much also remains to be done in producing the different varieties of each, in order to ascertain which from their peculiar qualities are most valuable, and best adapted to our soil and climate. It is a well established fact that varieties which flourish and produce

fruits highly to be esteemed, in particular soils and climates, will not answer in others, but become comparatively worthless—and hence, doubtless, often arises the disappointment experienced at finding after years of patient waiting, that highly recommended varieties imported from Europe or obtained from other sections of our own country are of very indifferent quality and no value, but which in the places whence obtained, may be of surpassing excellence. One great, if not the principal benefit of Agricultural and Horticultural Societies, and their annual exhibitions, consists in the facilities which they afford for making known the results of experiments both in the mode of culture and selections of varieties in the products of the different branches of the science to which their members have especially directed their attention. And it is equally to be desired that these results by the exhibition of specimens of their products at our annual shows should be spread before the public, in order that those who are commencing the same pursuit may be enabled to avail themselves of the accumulated knowledge and experience of their predecessors, and by judicious selections and proper culture avoid the disappointment and losses to which they have been subjected.

The culture of fruit, if not a new branch of agriculture, has been almost immeasurably extended within the few past years. Until within about a quarter of a century the number of varieties of the finer kinds, especially, was very limited; but few additions were made by importations from abroad or raising of seedlings at home to our established stock, and thus the qualities of the sorts we possess were generally well known. But now by constant importations from Europe and the attention which has been paid and is now given, both here and there to raising new varieties for seed, the names of the different varieties have literally become Legion, and these names daily increasing, are now numbered on the catalogues by thousands. It is only by testing them that the qualities, good or bad, of these various kinds of fruit, and their adaptation or unfitness for particular soils or climates, can be known,

and however much younger cultivators may avail themselves of the labors of their seniors, they will find ample room for their efforts and need have no fears that the field has been ploughed and tilled until it has become exhausted. The general cultivation of fine fruit (and let us remember that it costs no more to raise the finest than the poorest,) tends to place an healthful and innocent luxury within reach of all, and also to add, with but little additional labor, much to the profits of the farm.

The cultivation of beautiful flowers serves to adorn our homes with the gayest and richest ornaments, and by making them more pleasant and attractive, renders those homes still dearer and more sacred to us, and the Committee cannot help feeling and expressing a regret that the cultivators of flowers have not presented more specimens upon the tables at our present exhibition.

The pursuits of Agriculture and Horticulture seem natural to man, and for most possess an almost irresistible attraction. The professional man and the merchant, after the first excitements of business and of the crowded mart have passed away, looks forward with longing to the time when he can retire to his farm—the warrior with joy beats his spear into a pruning-hook, and the statesman seeks in his fields and garden a relief from the toils and cares of empire. To show us that these pursuits are honorable and praiseworthy we have the examples in all times of the wisest and greatest. We read in Holy writ of the greatest of kings and wisest of men, to whose wisdom the Queen of the South bore testimony, and of whom "all the kings of the earth sought his presence to hear his wisdom, and he spake of trees from the cedar tree that is in Lebanon, even unto the hyssop that springeth out of the wall." And in our days, also, of him to whose genius the world is indebted for so much of amusement and instruction,—but alas! whose mighty intellect at last yielded to too severe and too long protracted mental efforts,—it is said that he delighted to exchange the pen for the spade and the pruning-hatchet; and for himself, the delight and ornament of

society, that he sought and found his greatest pleasure by laboring with his own hands amid the groves and orchards planted and reared by himself, of his own Abbotsford.

The amount of money placed in the hands of the Committee being but fifteen dollars, they have been unable to award as large quantities as they would have desired, and from this cause have been compelled to omit the names of many of the exhibitors who would have been considered worthy of notice. They have awarded to

Mary P. and Laura A. Annable, of Hamilton, for 2 fig trees,	$1 00
Mrs. George Spofford, of Georgetown, dahlias, &c,	50
Charles S. Tenny, of Georgetown, bouquets,	50
E. Cleaves, Beverly, for pears, apples, and plums,	1 00
Andrew Dodge, Wenham, for pears, and apples,	1 00
R. Manning, Salem, for pears and apples,	1 00
J. M. Ives, do do do	1 00
Benj. Porter, Danvers, do do	1 00
Moody Ordway, West Newbury,	1 00
Moses French,	1 00
Josiah Lovett, Beverly,	50
Charles Lawrence, fine peaches,	50
Joseph S. Ober, sweetwater grapes,	50
Charles Perry, apples,	50
Eben King, do	50
Silas Noyes, do	50
Jos. H. Ordway, do	50
F. H. Wade, apples and pears,	50
George Thurlow, apples,	50
A. J. Dodge, for specimens of native grapes,	50
Francis Dodge, apples,	50
B. Preston, quinces,	25
Wm. Heard, do	25
	$15 00

For the Committee,

J. S. CABOT,

Chairman.

ON FRUIT TREES.

The Committee on fruit trees ask leave to present the following report :

That the number of Nurseries entered for premium was but three, viz :

George Thurlow,	West Newbury,
Joshua H. Ordway,	do do
Moses Pettingill,	Topsfield,

After examining the different Nurseries the Committee determined to recommend George Thurlow, as deserving of the first premium. They had no difficulty in determining in his case. Joshua H. Ordway received the second premium last year, and by the rules of the Society could compete only for the first premium. It is no disgrace to him to fall short of Mr. Thurlow. The Committee thought that the cultivation of his Nursery was creditable, and in particular the absence of weeds—a remark which will apply to each of the Nurseries visited at West Newbury. If there was any deficiency, it was in what seemed to be a want of system—a very important quality in the opinion of the Committee. In justice to Mr. Ordway we ought to say, that he was not present at the time of the visit, and might have made plain what seemed to be obscure.

The Committee regretted that they could not, consistently with their ideas of the object of premiums, recommend Mr. Pettingill for a premium. They take great pleasure in admitting the thrift and vigor of growth of his peach trees, but as they considered it the effect of a good soil rather than high and careful culture, they could not on that account recommend a premium. We hope this decision will not be considered a reproach upon Mr. Pettingill, for want of skill. The only wonder is, that, conducting the operations upon so large a farm as the one he occupies, with such a variety of products to care for, he should find time to do any thing in the Nursery. The Committee were glad to find, in conversing with various individuals engaged in the growing of trees, that the necessity of high cultivation both in the Nursery

and orchard was admitted. They believe that labor and manure expended in the cultivation of fruit trees will be repaid many fold in the improved quantity and quality of the crops. It has occurred to the Committee that it might not be out of place for them to suggest, that it would be well hereafter to include orchards in the objects for premiums. It is very clear that the number of Nurseries must be limited and will soon be exhausted as subjects for premium.

We annex the statement of Mr. Thurlow, the only one we have received, with only this remark, that the insect which he speaks of as known to nursery-men by the name of the Ant Grub, is probably the Aphis, or green fly—some variety of which attacks the new growth of almost all plants ; and that a very interesting account of this insect is to be found in "Harris' Insects Injurious to Vegetation." A work which should be in the possession of every one who is much engaged in the cultivation of trees or plants.

JOHN C. LEE,
CHAS. LAWRENCE,
ABEL NICHOLS,
PICKERING DODGE. } *Committee.*

GEORGE THURLOW'S STATEMENT.

To the Committee on Fruit Trees:

GENTLEMEN,—As you requested me to give you a more particular statement of the cultivation of my Nursery than I could on the day you visited me, I therefore embrace the first opportunity. The whole Nursery contains I should think about one acre of land, situated on the southerly side of a large hill, unfortunately rather steep, as it is liable to be washed by every heavy rain. The soil is of easy cultivation, being a gravelly loam, some portions of it very dry with a hard sub-soil, containing about twenty thousand trees of all kinds ; consisting of apples, peach, plum, cherry, quince, grapevines and mountain ash ; it being my chief object to raise

fruit trees. But the part more particularly for your consideration is about five thousand inoculated apple trees standing on about eighty rods of land, the same being one year old from the bud. My mode of cultivation is as follows:—In 1841 the land was broken up and planted with potatoes, one shovel full of barn-yard manure put to a hill; in the Autumn of the same year, it was again ploughed and about ten cords of swamp muck and twenty bushels of wood ashes spread on the same, which makes all the manure to the present time. I think the growth of trees does not depend so much upon high manuring as careful cultivation; the ground must be kept perfectly free from weeds. For that purpose I use a cultivator between the rows, and a one hand hoe between the trees, care being taken not to injure roots or the bark. In the Spring of 1842, I took the trees from the seed bed, they being one year old, and set them in rows, four feet apart and eight inches from each other. They were well pruned during the Summer, to give them a smooth surface for budding.

In August, 1843, they were inoculated as follows:—About two thousand five hundred Baldwins, one thousand Hubbardston Nonsuch, five hundred Russets, one hundred Spitzenburg, two hundred Porter, one hundred Gravenstein, two hundred Danvers Winter Sweet, and ten other varieties, making in all upwards of five thousand. In the Spring of 1844, I cut the tops off about one inch above the land; they took very well, having lost not more than five per cent. I have rejected nearly all the old varieties of winter fruit, preferring the Baldwins to any, for its growth in the Nursery, if it is afterwards grafted as a standard. I perform all the budding myself, being careful to select all buds from fruit-bearing trees, the names and situation being entered on a book kept for that purpose; and also, a plan of the Nursery.

About the middle of July the Ant Grub, an insect well known to nursery-men, made its appearance, covering the leaves and young wood of the apple trees and also of the mountain ash. I treated them to a warm bath of strong soap suds, which was more than their

constitutions could bear, and had the desired effect of eradicating them entirely, ants and all. I have also about fifteen hundred peach, plum and cherry, all inoculated with the most approved varieties; those of the peach and plum having borne fruit this season, being but two years from the bud. My trees suffered but little from the winter—the dryness of soil causing them to ripen their wood more perfectly than they otherwise would.

GEORGE THURLOW.

West Newbury, Oct. 15, 1844.

ON MULBERRY TREES AND SILK.

The Committee on mulberry trees and silk report,—That there were no nurseries of mulberry trees, of the description prescribed by the regulations of the Society, entered for premium. Two specimens of silk, however, were entered, as will be seen by the statements annexed, which also give the methods of feeding the worms and reeling the silk. The silk is of a beautiful quality, and evinces the skill and ingenuity of the manufacturers.

The Committee would cordially recommend that a gratuity of ten dollars each, be awarded

To D. M. Dummer, for samples of silk and cocoons, $10 00

To Sophia Ordway, for specimen of manufactured silk, 10 00

All of which is respectfully submitted,

GARDNER B. PERRY,
Chairman.

D. M. DUMMER'S STATEMENT.

Gentlemen,—The samples of silk and cocoons which I send you for examination, were raised by me the past year. I intended to have finished some sewing silk, but was prevented for want of time. I began to reel last Friday without any practical knowledge, having

never seen a reel run until I used one myself, with the assistance of my mother, who is seventy-four years old this month. I began to feed July 19, and wound up in about seven weeks. The worms have done very well—very few dead worms. I fed with white mulberry, with branches—my trees were cut close to the ground last spring—some of the shoots have grown over seven feet the past season. I fed in an out-house well ventilated, and in addition I use large fans. The silk worm is a robust little animal, all he wants is pure air and plenty of good fodder.

Yours, &c.,

D. M. DUMMER.

P. S. I think I shall have six pounds raw silk. The silk is from eight to eighty fibre.

Georgetown, Sept. 24, 1844.

SOPHIA ORDWAY'S STATEMENT.

To the Committee on Manufactured Silk:

GENTLEMEN,—I present for your inspection two specimens of silk, manufactured from the sulphur worm, fed on the white Italian mulberry. Method of manufacturing the smaller parcel:

The cocoons are put into a basin and boiling water poured on them. They are then set over a furnace of coal and the fibres collected by dipping a small corn broom among them. The cocoons are reeled on a clock reel, then placed on a swift and spun on a common wool wheel; spooled from the spindle and twisted from the spool, one spool being set back of another. The cocoons of the larger parcel were put in water over a furnace, in the same manner as the smaller. The thread passed through a ring in a wood fixture, standing at the side of the basin and spun directly, without reeling. When desirous to keep the thread of an uniform size place a ball of silk (wound from cocoons too far spent to be spun alone,) with the cocoons in the basin.—Spooled and twisted as the first, only kept wet while twisting.

The time spent in completing the specimens I am not able to decide, but with the assistance of a little girl at the furnace, after the cocoons are well prepared, I can spin nine knots of forty threads each, on the long reel, in an hour.

Cleansed by boiling in soap suds one hour.

Yours, with respect,

SOPHIA ORDWAY.

West Newbury, Sept. 25, 1844.

ON VEGETABLES.

Your Committee upon vegetables having attended to their duty would respectfully report,—That the following articles were sent in for exhibition:

Large squashes, weighing ninety lbs. from Samuel Jenkins, Bradford; seedling (early) potatoes, from Aaron Wallis, Ipswich; veto potato, resembling the long red, from Isaac Dempsey, North Danvers; blue potato, Theodore Coggeshall, Ipswich; flat turnip, weighing ten lbs. Moody Ordway, West Newbury; handsome kidney potato, long prickly cucumber and turnip blood beet, J. Hammond, Beverly; fine eight rowed yellow corn, Humphrey H. Kimball, Rowley; long prickly cucumber, Reuben Jones, Andover; white Belgian carrots, (large) long orange do., mangel wurtzel, and yellow onions, large and fine, Adam Nesmith, Beverly; white Belgian carrot from seed sown the 14th of June, Benj. Boynton, Andover; yellow corn measuring fifteen inches in the ear, Samuel Putnam, Danvers; mammoth sun-flower, measuring sixteen inches diameter, Leonard Cross, Danvers; early Jefferson corn, mountain sprout water melon, Skilman's netted melon, John M. Ives, Salem; four large hybrid acorn squashes, Sylvester Goodwin, Andover; one large hybrid marrow do., weighing seventy-two lbs., Robert Jewett, Georgetown; large ribbed pumpkin, John Ellery, Gloucester; crook neck squash, weighing forty-five and a half lbs., John Brewer, Ipswich;

hybrid pumpkin, sixty-eight lbs in weight, James Lang, Ipswich; twenty-one large squashes, Lima or Valparaiso, mixed with the autumnal marrow, Robert Kimball, Ipswich.

Your Committee would recommend the following gratuities:

To Adam Nesmith, of Beverly,	$2 00
To Robert Kimball, of Ipswich,	1 50
To John Hammond, of Cherry Hill,	1 00
To Samuel Putnam, of Danvers,	1 00
To Sylvester Goodwin, of Andover,	1 00
To James Lang, of Ipswich,	50
To Aaron Wallis, of Ipswich,	50
To Samuel Jenkins, of Bradford,	50

Respectfully submitted,

JOHN M. IVES,
EBEN KING,
ADONIRAM DODGE. } *Committee.*

ON DOMESTIC MANUFACTURES.

The Committee on domestic manufactures having attended to the duty assigned them now submit their report:

The number of entries in this department is one hundred and eighty-one, from towns in the County, being about thirty more than at the exhibition of the last year. The hearth rugs, as in former years are very numerous. The various specimens of work presented are, as the Committee believe, wrought with as much taste and elegance as those exhibited on any former occasion. The Committee congratulate the Society on the continued interest manifested by the ladies in this exhibition, in which we have seen such an admirable display of the ingenuity and skill of the fair daughters of Essex. The cordial thanks of the Society are due to them for their rich contributions to-day to the pleasure of the eye in such a variety of finely wrought articles, some of which, it is believed, exceed in beauty any that have heretofore been exhibited.

Instead of an hour or two, allowed the Committe to examine so many beautifully wrought articles and determine to which to award the premiums offered, a whole day at least is necessary to enable them to discharge this duty with perfect satisfaction to themselves.

The Committee have unanimously awarded the following premiums and gratuities:

PREMIUMS.

Carpetings.

Mrs. John Pearson,	Newbury,	1st premium,	$5 00
Mary A. B. Smith,	Ipswich,	2d "	3 00
Mrs. D. C. Houghton,	Newburyport,	stair carpeting, a premium,	3 00

Hearth Rugs.

Nancy Burrill,	Beverly,	1st premium,	3 00
Mrs. Springer,	Ipswich,	2d "	2 00

Hose.

Mrs. J. Perkins,	Newbury,	(knit with left hand, being unable to use the right,) first premium,	2 00

Counterpanes.

Mrs. R. A. Gerrish,	Newbury,	1st premium,	4 00
Harriet T. Preston,	Salem,	2d "	2 00

Wrought Lace.

Hannah Ross,	Ipswich,	(in her 74th year,) 1st premium,	3 00

Wrought Work by Children under twelve years old.

Martha E. Stickney,	Beverly,	1st premium,	3 00
Sarah E. Kimball,	Andover,	2d "	2 00

Brogan Shoes.

Daniel Richards,	Newbury,	1st premium,	2 00

Calf Skin Shoes.

John Varell,	Ipswich,	1st premium,	2 00

GRATUITIES.

Hearth Rugs.

Sarah P. Page,	Danvers,	$1 00
Elizabeth D. Burke,	Beverly,	1 00
Mary Hildreth,	Ipswich,	1 00
Anna Cole,	do	1 00
Anna C. Foster,	do	1 00
Martha Porter,	do	1 00
Edith Woodberry,	do	1 00
Hannah R. Low,	Ipswich,	1 00
Mrs. Daniel L. Hodgkins,	do	1 00
Mrs. John Pearson,	Newbury,	1 00
Almira Mason,	Salisbury,	1 00
Mary Ann Dodge,	Wenham,	1 00
Miss Cook,	Newburyport,	1 00
Elizabeth P. Pettingill,	do	1 00
Mrs. D. C. Houghton,	do	1 00
Elizabeth A. Stimpson,	Danvers,	1 00

Wrought Work by Children.

Frances Smith,	Salem,	50
Mary E. Smith,	do	50
Georgianna Leech,	Beverly,	50
Susan Lord,	do	50
Charlotte Woodberry,	do	1 00
Ellen M. Wallis,	do	50
Martha Bray,	Essex,	50
Sarah L. Kimball,	Ipswich,	50
Susan M. Shatswell,	do	50

Various Articles.

Mrs. P. Pillsbury, Andover, table cover,	2 00
Hannah Jacobs, Danvers, frocking, and cotton and wool cloth,	2 00
Frances C. F. Dodge, Ipswich, wrought screen and travelling bag,	1 00
Samuel Hunt, do., knit woolen articles,	1 00
J. & S. Peatfield, do, knit shawls & other articles,	2 00
John Kimball, Georgetown, specimens of leather,	2 00

Daniel Ross, Ipswich, (aged 87,) work table, made since June last,	$1 00
Mrs. A. H. Wildes, Ipswich, chair covers,	1 00
Sarah E. Felt, Salem, chair bottom,	50
Mary A. Caldwell, Ipswich, specimen of painting,	50
Laura S. Atwood, silk gloves,	1 00
Sophia Ordway, West Newbury, sewing silk,	2 00
Mrs. W. Lovett, Beverly, card vase,	50
Elizabeth P. Woodberry, Beverly, basket of wax fruit, and flowers,	1 00
Sophia B. Carter, Andover, (blind from birth,) knit bag,	1 00
Abby B. Carter, Andover, (blind from birth,) card basket,	1 00
Mrs. Springer, Ipswich, fur made of milk-weed,	1 00
Jerome Brown, do, swift made at sea of whalebone	1 00
Lucy Smith, do, wrought bag and ottomans,	1 00
Margaret Parsons, do, traveling bag,	50
Mrs. Israel K. Jewett, do, silk bag,	50
Abigail C. Giddings, do, cape and collar,	1 00
Abial Lovejoy, Andover, (blind from birth,) two pair hose,	1 00
Edward Carter, do, (blind from birth,) pair shoe brushes,	1 00
Eunice L. Putnam, Danvers, a quilt,	1 00
Abigail Staniford, Ipswich, do	1 00
Susan Russell, do do	1 00
Lydia N. Doyle, W. Newbury, do	1 00
Elizabeth P. Paine, Ipswich, wrought flowers,	50
Sarah Farley, do, traveling bag,	50
Hannah Todd, Rowley, (82 yrs old,) braided mats,	50

For the Committee,

CHARLES KIMBALL,
Chairman.

Ipswich, Sept. 25, 1841.

LIST OF

PREMIUMS AND GRATUITIES,

AWARDED IN 1844.

Butter.

George W. Dodge, Wenham, for June butter	1st premium,	$10 00
Mrs. Abi Worcester, Byfield, do do	2d do	8 00
Paul P. Pillsbury, Andover, do do	3d do	6 00
Allen W Dodge, Hamilton, for September, butter,	1st do	10 00
Nathaniel Felton, Danvers, do do	2d do	8 00
Benjamin Boynton, Andover, do do	3d do	6 00

Ploughing—Double Teams.

Micajah Treadwell, Ipswich,	1st premium,	10 00
Benjamin Poore, West Newbury,	2d do	8 00
Ebenezer Jenkins, Andover,	3d do	6 00
George P. Wilkins, Middleton,	4th do	4 00

Single Teams.

Moses Pettingill, Topsfield,	1st premium,	8 00
Ralph H. Chandler, Andover,	2d do	6 00

Ploughing—Horse Teams.

Moses Pettingill, Topsfield,	1st premium,	6 00
Joseph K. Woodman, Haverhill,	2d do	4 00

Working Oxen.

Ebenezer Jenkins, Andover,	1st premium,	10 00
Jacob Brown, Ipswich,	2d do	7 00
William Williams, Rowley,	3d do	5 00

Working Steers.

William Brown, Danvers,	1st premium,	7 00

Steers—Three Years Old.

Martha Chaplin, Georgetown,	1st premium,	7 00

Steer—One Year Old.

Theodore Dodge, Wenham,	1st	premium,	4 00

Fat Cattle.

John and Josiah Lamson, Topsfield,	1st	premium,	10 00
David S. Caldwell, Byfield,	2d	do	8 00

Bulls.

Isaiah Rogers, Ipswich,	1st	premium,	8 00
The Town of Ipswich,	2d	do	6 00
James D. Herrick, Methuen,	3d	do	4 00
John Dole, Rowley, bull calf,		gratuity,	2 00
Daniel Adams, Jr., Newbury, do	do	do	1 00
Adam Nesmith, Beverly, do	do	do	1 00

Milch Cows.

Joseph P. Pond, Salem,	1st	premium,	10 00
William Chase, do	2d	do	7 00
Joseph Horton, Ipswich,	3d	do	5 00

Swine.

Joseph Andrews, Essex, boar,	1st	premium,	5 00
William Williams, Newbury,	2d	do	2 00
William Williams, do sow,	1st	premium,	5 00
Paul D. Patch, Hamilton, do	2d	do	3 00
William Williams, Newbury, weaned pig,	1st	do	6 00
Moses French, E. Salisbury, do do	2d	do	3 00

Fruit and Flowers.

Mary P. and Laura Annable, Hamilton,	gratuity,	1 00
Mrs. George Spofford, Georgetown,	do	50
Charles S. Tenney, do	do	50
E. Cleaves, Beverly,	do	1 00
Andrew Dodge, Wenham,	do	1 00
R. Manning, Salem,	do	1 00
J. M. Ives, do	do	1 00
Benjamin Porter, Danvers,	do	1 00
Moody Ordway, West Newbury,	do	1 00
Moses French, E. Salisbury,	do	1 00
Josiah Lovett, Beverly,	do	50
Charles Lawrence, Danvers,	do	50
Joseph S. Ober, Beverly,	do	50
Charles Perry, do	do	50
Eben'r King, Danvers,	do	50
Silas Noyes, do	do	50
Joshua H. Ordway, West Newbury,	do	50
F. H. Wade, Ipswich,	do	50

George Thurlow, West Newbury,	gratuity,	-	50
Adoniram J. Dodge, Wenham,	do	-	50
Francis Dodge, Danvers,	do	-	50
B. Preston, Beverly,	do	-	25
Wm. Heard, Ipswich,	do	-	25

VEGETABLES.

Adam Nesmith, Beverly,	gratuity,	-	2 00
Robert Kimball, Ipswich,	do	-	1 50
John Hammond, Beverly,	do	-	1 00
Samuel Putnam, Danvers,	do	-	1 00
Sylvester Goodwin, Andover,	do	-	1 00
James Lang, Ipswich,	do	-	50
Aaron Wallis, do	do	-	50
Samuel Jenkins, Bradford,	do	-	50

SILK.

D. M. Dummer, Georgetown,	gratuity,	-	10 00
Sophia Ordway, West Newbury,	do	-	10 00

CARPETING.

Mrs. John Pearson, Newbury,	1st premium,	-	5 00
Mary A. B. Smith, Ipswich	2d do	-	3 00
Mrs. D. C. Houghton, Newburyport,	do	-	3 00

HEARTH RUGS.

Nancy Burrill, Beverly,	1st premium,	-	3 00
Mrs. Springer, Ipswich,	2d do	-	2 00
Sarah P. Page, Danvers,	gratuity,	-	1 00
Elizabeth D. Burke, Beverly,	do	-	1 00
Mary Hildreth, do	do	-	1 00
Anna Cole, do	do	-	1 00
Anna C. Foster, do	do	-	1 00
Martha Porter, do	do	-	1 00
Edeth Woodbury, do	do	-	1 00
Hannah R. Lord, Ipswich,	do	-	1 00
Mrs. D. L. Hodgkins, do	do	-	1 00
Mrs. John Pearson, Newbury,	do	-	1 00
Almira Mason, Salisbury,	do	-	1 00
Mary Ann Dodge, Wenham,	do	-	1 00
Miss Cook, Newburyport,	do	-	1 00
Elizabeth P. Pettingill, do	do	-	1 00
Mrs. D. C. Houghton, do	do	-	1 00
Elizabeth A. Stimpson, Danvers,	do	-	1 00

HOSE.

Mrs. Joseph Perkins, Newburyport,	1st premium,		2 00

COUNTERPANES.

Mrs. R. A. Gerrish, Newbury,	1st premium,	-	4 00
Harriet T. Preston, Salem,	2d do	-	2 00

WROUGHT LACE.

Hannah Ross, Ipswich,	1st premium,	-	3 00

WROUGHT WORK BY CHILDREN.

Martha E. Stickney, Rowley,	1st premium,	-	3 00
Sarah E. Kimball, Andover,	2d do	-	2 00
Frances Smith, Salem,	gratuity,	-	50
Mary E. Smith, do	do	-	50
Georgianna Leech, Beverly,	do	-	50
Susan Lord, do	do	-	50
Charlotte Woodbury, do	do	-	1 00
Ellen M. Wallis, do	do	-	50
Martha Bray, Essex,	do	-	50
Sarah L. Kimball, Ipswich,	do	-	50
Susan M. Shatswell, do	do	-	50

SHOES.

Daniel Richards, Newbury, brogans,	1st premium,	-	2 00
John Varell, Ipswich, calf skin do	1st do	-	2 00

MISCELLANEOUS ARTICLES.

Mrs. P. Pillsbury, Andover,	gratuity,	-	2 00
Hannah Jacobs, Danvers,	do	-	2 00
Frances C. F. Dodge, Ipswich,	do	-	1 00
Samuel Hunt, do	do	-	1 00
James and S. Peatfield, do	do	-	2 00
John Kimball, Georgetown,	do	-	2 00
Daniel Ross, Ipswich,	do	-	1 00
Mrs. A. H. Wilds, do	do	-	1 00
Sarah E. Felt, Salem,	do	-	50
Mary A. Caldwell, Ipswich,	do	-	50
Laura S. Atwood, do	do	-	1 00
Sophia Ordway, West Newbury,	do	-	2 00
Mrs. W. Lovett, Beverly,	do	-	50
Elizabeth P. Woodbury, do	do	-	1 00
Sophia B. Carter, Andover,	do	-	1 00
Abby B. Carter, do	do	-	1 00
Mrs. Springer, Ipswich,	do	-	1 00
Jerome Brown, do	do	-	1 00
Lucy Smith, do	do	-	1 00
Margaret Parsons, do	do	-	50
Mrs Israel K. Jewett, do	do		50
Abigail C. Giddings, do	do		1 00

Abiah Lovejoy, Andover,	gratuity,	-	1 00
Edward Carter, do	do	-	1 00
Eunice L. Putnam, Danvers,	do	-	1 00
Abigail Staniford, Ipswich,	do	-	1 00
Susan Russell, do	do	-	1 00
Lydia N. Dole, West Newbury,	do	-	1 00
Elizabeth P. Paine, Ipswich,	do	-	50
Sarah Farley, do	do	-	50
Hannah Todd, Rowley,	do	-	50
			$358 00

In addition to the premiums and gratuities awarded at the Annual Exhibition, amounting to three hundred and fifty-eight dollars—the following premiums have since been awarded by a vote of the Trustees :

George Thurlow, West Newbury,	fruit trees,	1st	premium,	-	$15 00
Benjamin Poore, do	hassock cutter,		gratuity,	-	3 00
Josiah Crosby, Andover,	heifer,	1st	premium,	-	7 00
William Bartlett, Newburyport,	Indian corn,	1st	do	-	8 00
J. H. Coggeshall, Lynn,	barley,	1st	do	-	8 00
Paul P. Pillsbury, Andover,	oats,	1st	do	-	8 00
					49 00
Amount brought down,	- - - - - -				358 00
					$407 00

Attest, ALLEN W. DODGE, *Secretary*.

Hamilton, Dec. 15, 1844.

Dr. *William Sutton, Treasurer, in account with the Essex Agricultural Society.* *Cr.*

1843.				1843.		
Sept. 29.	To balance of former account,		76 36	Sept.	By Premiums and Gratuities, awarded by Trustees,	671 25
Oct.	To Bank Dividends		162 00	1844.		
1844.				May 1.	By amount invested in one share in Warren Bank,	96 00
Jan. 20.	To State Bounty,		600 00	" 39.	By amount invested in six shares in Danvers Bank,	571 25
April	To Bank Dividends,		159 00		By Expenses, as follows:	
May	To amount received of Lynn Mechanic Bank, proportion of Capital reduced,		480 00		Printing,	162 20
	To amount received of Warren Bank, proportion of Capital reduced,		400 00		Expenses of Exhibition,	116 28
Sept. 25.	To amount received of new members, to this date,		33 00		Secretary's Salary,	50 00
	To Premiums unclaimed,		81 00		H. Colman, for books,	50 00
					Postage,	68
						379 16
				Sept. 25.	By Cash on hand,	273 70
		$1991 36				$1991 36

FUNDS ON HAND.

16	Shares in	Warren Bank,	cost	1596 00	6	Shares in Danvers Bank, cost	571 25
12	" "	Exchange, "	par	800 00	12	" " Lynn M. " "	660 00
11	" "	Commercial, "	"	733 33		Note signed by Benj. Goodridge, et al,	318 59
7	" "	Mercantile, "	"	700 00		" " " John Nutting, and secured by mortgage,	500 00
6	" "	Merchants, "	"	600 00		Cash on hand as above,	273 70
5	" "	Village, "	"	500 00			
3	" "	Salem, "	"	300 00		Funds in 1844,	7552 87
						" " 1843,	7568 28

SALEM, Sept. 25, 1844. (E. E.) WILLIAM SUTTON, TREASURER.

NOVEMBER 27, 1844. We have examined the items of the foregoing account and find them correctly stated and properly vouched. We further find the entire amount of Receipts for the year ending Sept 25, 1844, $1035 00
Expenses for " " " " " $1050 41
Balance against the Society for the year, $15 41

F. HOWES, J. W. PROCTOR } AUDITORS.

PREMIUMS OFFERED

BY THE

ESSEX AGRICULTURAL SOCIETY,

FOR

1845.

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1 MANAGEMENT OF FARMS.

For the most extensive, valuable and economical improvements in the cultivation and management of an entire farm with all its appendages, within the last *five years*.

1st premium	- - - -	twenty-five dollars.
2d premium	- - - -	twenty dollars.
3d premium	- - - -	ten dollars.

☞ The Trustees have varied their statement of premiums offered for *entire farms*, in the hope of increasing the number of competitors. They have also determined to admit as competitors, all farms within the county, whether large or small, for which the *first premium* has not been awarded, within *seven years*. A detailed statement of the management and produce will be expected, by the 15th of November.

Notice of intention to claim these premiums must be given to the Secretary on or before the 20th of June.

The Committee will visit such farms as may be entered, in July and September.

2 DAIRY.

1. For the best produce of butter on any farm within the County of Essex, from the 1st of June to the 9th of July, inclusive, in the present year, a sample, not less than twenty-five pounds, to be exhibited, with a particular statement of the

number of cows, quantity of butter, method of making and preserving it, &c., &c.

1st premium - - - - - - ten dollars and Coleman's European Agriculture.
2d premium - - - - - - eight dollars.
3d premium - - - - - - six dollars.

2. For the best produce of butter on any farm within the County of Essex, in the four months next following the 20th of May, the present year, a sample of not less than twenty-five pounds to be exhibited—*quantity* as well as *quality* to be taken into view; with a full account of the manner of feeding the cows, and the general management of the milk and butter.

1st premium - - - - - - ten dollars, and Coleman's European Agriculture.
2d premium - - - - - - eight dollars.
3d premium - - - - - - six dollars.

NOTE. It will be observed that these premiums are offered for the *best produce on the farms*, and not simply for the best specimen exhibited. Claimants will therefore be required to be particular in keeping an account, and preparing a statement of the entire produce, within the times mentioned.

3 TURNING IN CROPS AS A MANURE.

For the most satisfactory experiment of turning in crops as a manure, either *green* or *dry*, on not less than one acre of land, a detailed account of the whole process to be given in writing.

1st premium - - - - twenty dollars.
2d premium - - - - ten dollars.

4 FOREST TREES.

1. For the best plantation of either of the following species of forest trees, viz:—white oak, yellow oak, locust, birch, white ash, maple or walnut, not less than three years old, and not less than one thousand trees, - - twenty dollars.

2. For the best do. do. do. not less than six hundred trees, - - - - - - ten dollars.

NOTE. For an explanation of these premiums, see remarks in former years.

5 CULTIVATION OF MULBERRY TREES, SILK, &c.

For the best plantation of Mulberry trees, for which no premium has been awarded, containing at least one hundred trees, of three years growth or more, from which the greatest quantity of silk has been manufactured, taking into view the number of trees, - - - - - fifteen dollars.

For the second best, - - - - ten dollars.

6 IRRIGATION.

For the most satisfactory experiment for increasing the crops, upon not less than one acre of land, by irrigation, with a detailed account of the manner, expense, and benefits produced, - - - - - twelve dollars.

For the second best - - - ten dollars.

7 IMPROVING WET MEADOW OR SWAMP LANDS.

For the best conducted experiment in reclaiming wet meadow or swamp lands, on not less than one acre, the course of management and the produce, &c., for a period of two years, at least, to be detailed, with a statement of all incidental expense, - - - - - fifteen dollars, and Coleman's European Agriculture.

For the second best - - - ten dollars.

8 PLOUGHING.

1. Double Teams. For the best performance in ploughing, at least one sixth of an acre, *seven* inches deep, ten dollars.

For the second best - - - eight dollars.
For the third best - - - six dollars.
For the fourth best - - - four dollars.

2. Single Teams. For the best performance in ploughing, at least one eighth of an acre, *six* inches deep, eight dollars.

For the second best - - - six dollars.
For the third best - - - four dollars.
For the fourth best - - - two dollars.

3. Horse Teams. For the best performance in ploughing, with horses - - - - eight dollars.

For the second best - - - six dollars.
For the third best - - - four dollars.

4. Sub-soil Ploughing. For the best performance in Sub-soil ploughing, - - - - ten dollars.

For the second best - - - eight dollars.

Note. A team consisting of a horse and one pair of oxen will be considered a double team. No team or plough which has taken a premium of this Society will be entitled to another, except of a higher grade. The competitors for these premiums, must be the owners of the team, and the same must be entered in the name of the owner. Those who intend to be competitors, must give notice to the Secretary, or his agent, on or before the Monday next previous to the Exhibition. Teams that come more than ten miles, will be fed the night previous to the exhibition, at the expense of the Society.

9 IMPROVEMENT OF AGRICULTURAL IMPLEMENTS.

To the person who shall exhibit at the show any new or improved agricultural implement except ploughs, the invention being his own, which shall, in the opinion of the trustees, merit a reward, a premium shall be given, not exceeding ten dollars.

In all cases, proof must be given of the work done by the implement before it is exhibited, and of its having been used and approved by some practical farmer.

10 COMPARATIVE VALUE OF CROPS AS FOOD FOR CATTLE.

1. For the most satisfactory experiment upon a stock of cattle, not less than four in number, in ascertaining the relative value of the different kinds of fodder used, with a statement in detail of the quantity and value of the same, as compared with English hay, the experiment to be made in the three winter months,

1st premium - - - fifteen dollars.

2d premium - - - ten dollars.

2. For the most satisfactory experiment proving the comparative value of the crop of cultivated grasses, cut at different periods of their growth, whether they be worth more or less for feeding or fattening cattle, cut in the blossom, or when the seed is fully formed, or when fully ripe, taking into view the effect of cutting these grasses at the different periods above mentioned, on the land itself and on subsequent crops, fifteen dollars.

These premiums are offered to be paid, whenever a meritorious claim is presented; and will be continued until awarded

11 EXPERIMENTS ON MANURES.

1. For an exact and satisfactory experiment in the preparation and application of manures, either animal, vegetable or mineral,

1st premium - - - fifteen dollars, and Coleman's European Agriculture.

2d premium - - - ten dollars.

12 FATTENING CATTLE AND SWINE.

For the most satisfactory experiment in feeding cattle or swine, with a statement in detail, of the process and the result.

1st premium - - - ten dollars.

2d premium - - - five dollars.

13 CULTIVATION OF WHEAT, RYE, OATS, BARLEY, AND INDIAN CORN.

1. For the best conducted experiment of *Wheat*, not less than twenty bushels to the acre, on not less than one acre, eight dollars.

2. For the best conducted experiment of *Rye*, not less than thirty bushels to the acre, on not less than one acre of land, eight dollars.

3. For the best conducted experiment of *Oats*, not less than fifty bushels to the acre, on not less than one acre of land, eight dollars.

4. For the best conducted experiment of *Barley*, not less than forty bushels to the acre, on not less than one acre of land, eight dollars.

5. For the best conducted experiment of *Indian Corn*, not less than eighty bushels to the acre, on not less than one acre of land, eight dollars.

6. For the best conducted experiment in raising a mixed crop of *Corn* and *Potatoes*, or mixed grain, and not less in value than eighty bushels of corn, on not less than one acre of land, eight dollars.

14 ROOT CULTURE.

For the best conducted experiment in raising Sugar Beets, six dollars.

For the best conducted experiment in raising Carrots, six dollars.

For the best conducted experiment in raising Ruta Baga, six dollars.

For the best conducted experiment in raising Mangel Wurtzel, six dollars.

For the best conducted experiment in raising Onions, six dollars.

Raised on not less than one half acre of land, and the quantity of the crops to be ascertained by weight.

☞ Claimants for all the above premiums, will be required to give a statement of the previous condition of the land, the comparative value of the land, the value of labor and manure applied, the produce, the manner of preparing the ground, the seed used, the harvesting, &c., including all the details in relation to the crops; the same to be forwarded to the Secretary, prevous to the 15th of November.

15 ANIMALS TO BE PRODUCED AT THE EXHIBITION, ON WEDNESDAY, SEPT. 24, 1845.

TO BE ENTERED IN THE NAME OF THEIR PROPER OWNERS—WHO MUST HAVE HAD THEM SIX MONTHS BEFORE EXHIBITION.

For the best ox, fatted within the County, regard being had to the manner of feeding, and the expense thereof, ten dollars, and Coleman's European Agriculture.

For the second best, - - - eight dollars.

For the third best, - - - five dollars.

For the best bull, not less than one year old, on satisfactory assurance being given that he shall be kept for use in the County, at least nine months from the day of exhibition, eight dollars.

For the second best, - - - six dollars.

For the third best, - - - four dollars.

For the best milch cow, not less than three, nor more than ten years old, with satisfactory evidence as to the quantity and quality of her milk and the manner in which she has been fed, ten dollars and Coleman's European Agriculture.

For the second best, - - - seven dollars.

For the third best, - - - five dollars.

For the best heifer that has been in milk three months or

more, with satisfactory evidence as to the quantity and quality of her milk, - - - - seven dollars.

For the second best, - - - five dollars.

For the best pair of working oxen, not over seven years old, taking into view their size, power, and training, ten dollars.

For the second best, - - - seven dollars.

For the third best, - - - five dollars.

For the best pair of three year old steers, do seven dollars.

For the second best, - - - five dollars.

For the best pair of two year old steers, six dollars.

For the second best, - - - four dollars.

For the best pair of yearling steers, do - four dollars.

For the second best, - - - two dollars.

For the best boar, - - - five dollars.

For the second best, - - - two dollars.

For the best breeding sow - - five dollars.

For the second best, - - - three dollars.

For the best litter of weaned pigs, not less than *four*, from two to six months old, - - - six dollars.

For the second best, - - - three dollars.

NOTE. In testing the power of working cattle, four years old, or more, the load is not to exceed *two tons;* under four years old, it is to be *one ton.*

16 FRUIT TREES.

For the best nursery of fruit trees, not less than five hundred in number, raised from the seed, and one or more years old from the bud or graft,

1st premium, - - - ten dollars, and Coleman's European Agriculture.

2d premium, - - - ten dollars.

17 LIVE FENCES.

For the best cultivated hedge or live fence of any kind, of not less than five years growth from the seed, and at least twenty rods in length, well trimmed and filled,

1st premium, - - - twenty dollars.

2d premium, - - - ten dollars.

18 DOMESTIC MANUFACTURES.

For the best piece of carpeting, a yard wide, and not less than twenty yards to be exhibited, - - five dollars.

For the second best, do - - three dollars.

For the best piece of stair carpeting, not less than twenty yards to be exhibited, - - - three dollars.

For the best straw or grass bonnet, - five dollars.

Nor the second best, do - - three dollars.

For the best wrought hearth rug, having regard both to the quality of the work and expense of the material, three dollars.

For the second best do. - - two dollars.

For the best piece of woolen cloth, 7-8ths of a yard wide, and twenty yards in quantity, - five dollars.

For the second best do. - - three dollars.

For the best piece of flannel, a yard wide, and twenty yards in quantity, - - - four dollars.

For the second best do. - - two dollars.

For the best wrought woolen hose, not less than four pair, two dollars.

For the second best do. - - one dollar.

For men's best half hose, not less than four pair, one dollar.

For the best silk hose, not less than three pair, two dollars.

For the best piece of linen cloth, not less than twenty yards, four dollars.

For the second best do. - - two dollars.

For the best piece of linen diaper, not less than twenty yards, - - - - three dollars.

For the second best do. - - two dollars.

For the best wrought counterpane, having regard to the quality and expense of the materials, four dollars.

For the second best do. - - two dollars.

For the best specimen of wrought lace, three dollars.

For the second best do. - - two dollars.

For the best specimen of work performed by a child under twelve years of age, exhibiting industry and ingenuity, three dollars.

For the second best do. - - two dollars.
For the best pair of thick boots, - three dollars.
For the second best do. - - two dollars.
For the best pair of calf-skin thin boots, four dollars.
For the second best do. - - two dollars.
For the best pair thick brogan shoes, two dollars.
For the best pair calf-skin shoes, - two dollars.
For the best specimen of shell combs, not less than one dozen, - - - five dollars.
For the best specimen of horn combs, not less than one dozen. - - - three dollars.

And should any other article of domestic manufacture be exhibited, worthy of attention, a proper notice will be taken of them, and suitable premiums awarded. The whole amount not to exceed one hundred dollars.

"19 FRUITS, FLOWERS, AND VEGETABLES.

Convenient rooms will be provided for the exhibition of fruits, flowers and vegetables, and committees will be appointed to examine and report on such as may be presented. Whoever may present, is requested to furnish a minute in writing, of the name of the owner, and description of the article presented. The committees will be instructed to recommend such gratuities as the articles may seem to merit, not exceeding in amount the sum of thirty dollars by the committee on fruits and flowers, and ten dollars by the committee on vegetables;—the fruits and flowers to be used at the annual dinner of the society.

GENERAL REMARKS.

All claims for premiums, to be awarded on the day of exhibition, must be entered with the Secretary of the Society, or his agent, on or before 9 o'clock, A.M. of that day.

All other claims for premiums, must be handed or forwarded to the Secretary, in writing.

All premiums awarded, the payment of which is not demanded of the Treasurer within *one year* from the day of the exhibition, will be considered as given to increase the funds of the Society.

No animal or object for which a premium has heretofore been awarded by the Society, will be entitled to another premium, unless it be of a higher order, or for qualities different from those for which the former premiums were awarded.

No person will be entitled to receive a premium, unless he complies with the conditions on which the premiums are offered; and *gives notice as required*, of his intention to claim the same.

No *gratuities* will be awarded except for Domestic Manufactures, and for Fruits, Flowers and Vegetables.

In regard to all subjects for which premiums are offered, it is to be distinctly understood, that the Trustees reserve to themselves the right of judging of the QUALITY of the animal or article offered; and that no premiums will be awarded, unless the objects of them are of a decidedly SUPERIOR QUALITY.

By order of the Trustees,

ALLEN W. DODGE, *Secretary.*

JANUARY, 1845.

OFFICERS OF THE SOCIETY,

CHOSEN SEPTEMBER 25, 1844.

LEVERETT SALTONSTALL, of Salem, *President.*

DANIEL ADAMS, 3d, of Newbury,
JOHN W. PROCTOR, " Danvers,
SOLOMON LOW, " Boxford,
ASA T. NEWHALL, " Lynnfield.
} *Vice Presidents.*

WILLIAM SUTTON, of Salem, *Treasurer.*
ALLEN W. DODGE, " Hamilton, *Secretary.*

TRUSTEES.

Jedediah H. Barker,	Andover.	Josiah Kimball,	Boxford.
Andrew Nichols,	Danvers.	Joseph Kittredge,	Andover.
Jeremiah Colman,	Newburyport.	Royal A. Merriam,	Topsfield.
George Hood,	Lynn.	Moses Newhall,	W. Newbury.
Moses French,	E. Salisbury.	Dean Robinson,	" "
Andrew Dodge,	Wenham.	Asa Nelson,	Georgetown.
James H. Duncan,	Haverhill.	Ira Worcester,	Ipswich.
Nathaniel Felton,	Danvers.	Hobart Clark,	Andover.
Nathan W. Hazen,	Andover.	Horace Ware,	Marblehead.
Joseph How,	Methuen.	Daniel P. King,	Danvers.
Frederick Howes,	Salem.	Josiah Newhall,	Lynnfield.
Asahel Huntington,	Salem.	John Marland,	Andover.

MEMBERS ADMITTED IN 1844.

Perley King,	Danvers.	George Thurlow,	W Newbury.
Otis King,	Lynn.	Josiah Little,	" "
John Newell,	"	Caleb Peirce,	Salem.
Frederick Mitchell,	Ipswich.	James D. Herrick,	Methuen.
Jacob Brown,	"	Paul D. Patch,	Hamilton.

Any citizen of the County may become a member of the Society by paying to the Treasurer three dollars. Members are not liable to any assessment.

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TRANSACTIONS

OF THE

ESSEX AGRICULTURAL SOCIETY,

FOR

1845.

VOLUME III.—NUMBER VI.

PUBLISHED BY ORDER OF THE SOCIETY,

JANUARY, 1846.

SALEM:

PRINTED AT THE GAZETTE OFFICE.

1846.

MR. STONE'S ADDRESS.

Gentlemen:

You are met, on this 28th anniversary of the Essex Agricultural Society, to exhibit the results of your toil and skill, and to lay before each other, for mutual benefit, your individual experience. This "Farmer's Jubilee" is a proud and beautiful spectacle—a day of extended and extending interest in this county. Prompted by a laudable desire to advance the prosperity of your calling, you are thus come together. In these becoming exercises,—and as the friends of order, virtue and religion,—you gratefully acknowledge the benignant Providence, and implore the continued smiles of him, "who crowneth the year with his goodness," and without whose blessing all prosperity is a curse; while, by fraternal intercourse, you impart and receive influences that perpetuate good will, strengthen the ties of the civil and social compact, and make "a fair day in the affections, from the storm and tempest." Nor is it the least gratifying circumstance of the occasion, that we greet so numerous a representation of the gentler sex, without whose presence Paradise itself had been a cheerless home for man, and the rich harvest fields of Boaz had failed to satisfy their owner. It were time well spent in celebrating this anniversary, were it but to weave this garland of Essex's fairest flowers,—to chasten and dignify our festive enjoyments by the charms and restraints of woman,—and to find, as we do to-day, in the specimens of feminine industry, invention and taste, incentives to our own.

Honored with an invitation to address you, I stand here, not,

indeed, claiming to be a "practical farmer," but as one whose years of minority were familiar with the occupations of a farm —with a love of rural pursuits increased by many years residence in the midst of a rural population, and with a heart that yields to none other in its respect for the cultivators of the soil, or in its sympathy for the cause of agriculture. I congratulate you, gentlemen, on the success that has annually crowned the operations of your association, and the impetus it has imparted to agricultural improvements in this county. The exhibitions of this day are the best witnesses to its utility, as they are to the patriotism and wise forecast of its founders.*

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*The following persons have addressed the Essex Agricultural Society.

1819. Hon. Timothy Pickering, Salem.
1820. " " " " Feb.
1820. Andrew Nichols, M. D. Danvers.
1821. Rev. Abiel Abbott, D. D. Beverly.
1822. Rev. Peter Eaton, D. D. Boxford.
1823. Frederic Howes, Esq., Salem.

In 1824, 5, 6, 7, and 9, it does not appear that any addresses were delivered.

1828. Hon. Timothy Pickering, Salem.
1829. "Brief notice of Hon. T. Pickering," read by F. Howes, Esq
1830. Hon. James H. Duncan, Haverhill.
1831. Rev. Henry Colman, Salem.
1832 Rev. Gardner B. Perry, Bradford.
1833. Hon. Jeremiah Spofford, Bradford.
1834. Ebenezer Moseley, Esq., Newburyport.
1835. Hon. Daniel P. King, Danvers.
1836. Nathan W. Hazen, Esq., Andover.
1837. Rev. Nathaniel Gage, Haverhill.
1838. Rev. Leonard Withington, Newbury.
1839. Rev. Allen Putnam, Danvers.
1840. Asahel Huntington, Esq. Salem.
1841. Alonzo Gray, A. M., Andover.
1842. Hon. Allen W. Dodge, Hamilton.
1843. Hon. Leverett Saltonstall, Salem.
1844. John W. Proctor, Esq., Danvers.
1845. Edwin M. Stone, Beverly.

For the years 1821, '5 and '7, the publications of this Society were made in the N. E Farmer.

For the years 1826 and '9, pamphlets were published that do not contain addresses.

The following persons have been Presidents of the Society, viz:

Timothy Pickering,	10 years.	James H. Duncan,	3 years.
Frederic Howes,	3 "	Joseph Kittredge,	2 "
Ebenezer Moseley,	4 "	Leverett Saltonstall,	3 "

Agriculture is the offspring of God. It was the first employment of man. On the authority of these two facts, as well as from the illustrious names it has in every age enrolled as its votaries, I may, without disparagement to other pursuits, pronounce it the most important, as it certainly is among the most honorable descriptions of labor.

Agriculture is the basis of National prosperity. Revolution or change, though they may affect, and for a time depress, cannot destroy it. Napoleon spoke as a profound statesman, and uttered a merited compliment, when he said, "Finances founded upon a skillful agriculture, can never be destroyed."—Though Manufactures and Commerce add to the wealth of a nation, and from the employ they give to capital and labor, are blessings to the world,—neither could flourish without the aid of agriculture. They are, in fact, her legitimate offspring. She establishes them in business. She supplies them with subsistence for their operatives and seamen, and with materials for their industry and enterprize. They, in return, stimulated by generous and necessary protection, to healthy activity, impart to agriculture a vital nourishment. Every factory put in operation, increases the consumption of farm products, and contributes to absorb the surplus in its vicinity. The farmer sells his pork, butter, cheese, milk, eggs, etc. at home, at better prices than he can be certain of realizing in the principal cities, and saves the expense of transportation. In this country, the interests of Agriculture, Manufactures and Commerce, are now so blended, that a blow cannot be struck at the prosperity of the two former, that will not be felt by the latter. It is a favorable augury for our country, that this relation is becoming better understood and more widely recognized, tending, as it does, to unite the friends of these several interests in the policy of protection, as well as to settle the policy of our government on the same point.

The advantages of Agricultural Associations were warmly

The following persons have been Secretaries of the Society, viz.

David Cummins,	1 year.	Daniel P. King,	2 years.
Frederic Howes,	1 "	Allen W. Dodge,	2 "
John W. Proctor,	20 "		

appreciated by the Father of his Country, who amidst the fatigues and excitements of the Camp, and the cares of State, cherished an ardent interest in this branch of industry. It was his desire to see established, a National Board of Agriculture, "composed of proper characters, charged with collecting and diffusing information, and enabled by premiums, and small pecuniary aid, to encourage and assist a spirit of discovery and improvement." Among the last acts of his public life, was the recommendation of such an Institution to the notice of Congress, as calculated "doubly to the increase of improvement, by stimulating to enterprize and experiment, and by drawing to a common centre the results every where of individual skill and observation, and spreading them thence over the whole nation."* The subject, though favorably regarded, was not definitely acted upon, owing to limited time and the pressure of important business.†

The Patent Office is, I believe, the only department of our National organization that bears any direct relation to Agriculture, and this, under the efficient management of Hon. H. L. Ellsworth, (lately retired,) has rendered valuable service to the farming interest. Mr. E. was indefatigable in collecting information concerning the agriculture of this country, and his Reports are among the most useful documents printed and distributed by Congress. State and County Associations are now doing the work of a National Institution, and by the concentration of local interests, are probably quite as advantageous. They have stimulated mechanical ingenuity, under the influence of which, the cultivator, horse rake, roller, and many other useful implements have been invented, while important improvements have been made in those previously in use. The scythe, rake, fork, spade and hoe, have all received the magic touch of genius, and appear to us in more graceful forms. But in nothing is change for the better more visible, than in that vital agent of agriculture—the plough. History furnishes no description of that used by Elisha, when, as the Messenger and Prophet of God, he left the field to discharge those high and

*Speech on opening of Congress, Dec. 5, 1796. †Letters to Sir John Sinclair, p. 42.

holy functions,—nor can we form any tolerable idea of the ploughs used in Ireland, when it became necessary, by act of parliament to prohibit "ploughing by the tayle,"—but the heavy, uncouth instruments, shod with broken cart tire and cast-off ox shoes, seen on every farm thirty years ago, are familiar to our juvenile recollections, and point a contrast most favorable to the beautiful and scientifically constructed ploughs now manufactured, which execute better work with fifty per cent less team. The sub-soil plough, invented in Scotland about twenty years ago, and now considered an essential implement of good husbandry in Great Britain, has been, by Yankee skill, brought within the means of every farmer.*

This Society was the first in the Commonwealth, to publish in detail its transactions, and thus led the way to an excellent system of diffusing useful knowledge, now generally adopted. In recently examining these publications, I was struck with the sterling value of their contents. The addresses, delivered in every instance by members of the society, are characterized by profoundness of thought and depth of research; and the numerous communications, detailing experiments and their results, in the various departments of Husbandry, evince uncommon practical skill, and a laudable ambition to advance agricultural science. Indeed, I hazard nothing in pronouncing them among the most important agricultural documents that have ever been presented to the American Public.

A wide diffusion of the valuable information annually accu-

*There is a beautiful connection between the progress of the mechanic arts and the development of the natural productions of the soil. The genius which puts into the hands of the agriculturists the machine by which he may plough, mow, reap, thrash or *shell out* ten times the usual amount performed by the same number of individuals,—of course gives him increased power of turning his labor to advantage, provided the market keeps pace with such advance of product. The farmer should recollect, that for his plough, his harrow, rake, spade, and scythe, his reaping, thrashing and winnowing machines, &c., he is indebted to the mechanic;—and just in the degree in which these instruments of his toil are improved, may he find additional ease and comfort in his method of conducting his business. By the use of these various tools, which are such interesting exhibitions of inventive talent, too, his own mind may be expanded as he learns to observe their operation, and so obtains knowledge of the practical laws of the forces in action, and thus quickened to invent for himself, may be able, by suggestions of his own, to derive increased advantage from what he reads or hears."—*Ellsworth's Report*, 1845, *p.* 14.

mulated by each Agricultural Society in the State, has long been a desideratum, for which the legislature of last winter generously provided. By an act of March 7th, 1845, it is made the duty of every Agricultural Society entitled to receive money from the Commonwealth, under penalty of forfeiting the same, to make full returns of their doings into the office of the Secretary of State, "embracing all reports of committees, and all statements of experiments and cultivation, deemed by the officers of the several societies worthy of publication." From these returns, the Secretary is required to cause as full an abstract "to be made and published each year, for distribution, as in his judgment will prove useful." This act promises to be very serviceable, as by its provisions the most important experiments and best methods of husbandry within the bounds of each Society, will be made accessible to thousands in every part of the Commonwealth, to whom they are now sealed books.

From the first settlement of this country, agriculture engaged a large share of attention, and the products of the soil supplied, at an early day a portion, of the domestic exports. For ten years preceeding 1709, twenty-eight millions 858,666 lbs. of tobacco were exported from the North American Colonies into Great Britain. In 1724, 18,000 bbls. rice were exported, and in the year ending Sept. 1761, 100,000 bbls. Among the exports of 1770, were 751,250 bushels wheat, valued at £131,-467; 48,868 tons of flour and bread, valued at £504,553, 6s. 1d; 578,349 bushels Indian meal, valued at about $194,000; 167,613 lbs. butter, and 55,997 lbs. cheese.

The exports from the peace of 1783 to the organization of the Federal government, cannot be accurately ascertained, but from 1791 to 1802, inclusive, there were among the exports, 9,391,557 bbls. flour, 4,778,795 bush. wheat, 4,321,114 bush. Indian meal, 17,826,373 bush. corn. The average export of oats for 20 years preceding 1816, was about 70,000 bush. per ann., peas 90,000, beans between 30 and 40,000. The export of rye was trifling, it being mostly used for food and distillation.*

*In 1801, the quantity of spirits, distilled from grain and fruit, in the U. States, was estimated at ten millions of gallons. In 1810, it exceeded twenty millions. Probably

From 1803 to 1814, inclusive, the agricultural exports of the U. S. amounted to $315,729,000, or about three-fourths of all the domestic exports. In 1812, of $30,032,109 domestic exports, $24,555,000, were the products of agriculture. The gross products of agriculture in the U. S. last year, were 828,448,000 bushels vegetable food, with proportionate crops of hay, cotton, tobacco, rice, sugar, silk, flax and hemp—employing the labor of about four millions of persons.*

The entire domestic exports of the U. S. for the year ending June 30th, 1844, were $99,715,179. Of these, $3,350,501 were products of the sea; of the forest, $5,808,712; of manufactures, $10,617,556; of agriculture, $79,938,410, leaving but $19,777,169 *for all other descriptions of labor, and exceeding the export of manufactures nearly seven fold.* Of these agricultural exports, $11,239,437 were vegetable food. Massachusetts, though extensively engaged in manufactures, employs not less than 90,000 persons in the cultivation of the soil, and last year produced 9,678,000 bushels vegetable food, 706,000 tons hay, 103,000 lbs. tobacco, 425,000 lbs. sugar, and 37,000 lbs. silk.†

The agriculture of Essex County gives employ to about 8,000 persons, and in 1840 yielded 658,555 bushels vegetable

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more than three quarters of this was from grain. In 1810, therefore, between five and six millions of bushels of rye and corn must have been made into spirits. In Pennsylvania alone, in that year, there were three thousand three hundred and thirty four distilleries, producing no less than six millions five hundred fifty two thousand two hundred and eighty four gallons of spirits, principally from grain. Add to this, the quantity distilled from molasses and that imported and consumed here, and we find that the annual consumption of spirits in the United States amounted to thirty one millions seven hundred and twenty-five thousand four hundred and seventeen gallons, or about four and a half gallons for each person. *Pitkin's View, p.* 101.

*Wheat,	95,607,000.	Hay,	17,715,000 tons.
Barley,	3,627,000.	Flax and Hemp,	22,000 lbs.
Oats,	172,247,000.	Tobacco,	166,705,000 "
Rye,	26,450,000.	Cotton,	872,107,000 "
Buckwheat,	9,071,000.	Rice,	111,759,000 "
Indian Corn,	421,953,000.	Sugar,	201,107,000 "
Potatoes,	99,493,000.	Silk,	796,000 "

†The different items, are, wheat, 210,000 bushels; barley 141,060 do; oats 1,687,000 do; rye 660,000 do; buckwheat 114,000 do; indian corn 2,816,000 do; potatoes 4,050,000 do; hay 706,000 tons; tobacco 103,000 lbs; sugar 425,000 do; silk 37,000 do.

food, 48,503 tons hay, and dairy, orchard, nursery, and garden products to the value of $289,457.* These statistics give you a bird's eye view of the extent of the agricultural operations of our country, though its resources are not a twentieth part developed,—and justify the exalted position I have claimed for rural pursuits.

It will be impossible, on an occasion like the present, to consider all the topics connected with the great subject of agriculture, and in which every enlightened farmer is presumed to be interested. From the mass, I shall select only a few, and these I must necessarily treat with brevity. I begin with MANURE. This is a vital element of good farming. Our soils in these Northern regions, are too sterile to return a fair remuneration for labor without it; and yet it is too costly, to warrant, under ordinary circumstances, extensive purchase. The farmer's policy, then, is, to manufacture it. This may be done in two ways—by the aid of stock, and by the compost heap. One error of many farmers in this county is, that they do not keep stock enough, and unwilling or unable to buy manure, they sell more matter off their farms than they bring on—a process that in a few years impoverishes the land, and diminishes the crops. Another is, that they neglect, very extensively, (though there has been of late years a decided improvement in this regard) to use the materials easily accessible, to increase their store. I venture to affirm, that with properly constructed barns, such as may be found on many excellent farms in this county, a just proportion of stock, and due care to keep the barn-yard and piggery well supplied with materials, that the sink, out-houses, bog-meadow, forest, sea shore, clay bank, corners of the field, and the roadside afford, every farmer may double the quantity of his manure without materially increasing the cash expenses of his farm. Where it is practicable, the wash of the road should be turned into the field, to enrich the soil. I have been shown a piece of mowing, laid down fifty

*The census of 1810 gives the following returns:—3,281 bush. wheat; 28,044 barley; 19,309 rye; 3,268 buckwheat; 166,861 corn; 437,790 potatoes; 61,882 oats; 48,503 tons hay; 12 tons flax and hemp; 17,726 lbs. wool; 12 lbs. silk; Dairy products $193,808; orchards $63,642; market gardens $10,216; nurseries $21,791

years ago, that has never received any other dressing, and now yields a heavy burden of grass.

Ashes, leached or unleached, are a valuable manure, especially on light soils. They also make an excellent dressing for fruit trees. Fish, where they can be readily obtained, and in sufficient quantities, are highly serviceable, either as a top-dressing for mowing fields, or for ploughing in. Hon. Daniel Webster, who uses fish freely on his farm in Marshfield, considers one load equal in value, to three loads of stable manure.—Salt is another useful article for the compost heap, and is destined to be extensively employed in agriculture. Sown broadcast on grass lands, it has proved permanently beneficial, particularly at some distance from the ocean. Sown in the same manner on a cornfield, immediately after planting, at the rate of two bushels to the acre, it has afforded effectual protection against worms and birds. A table spoonful spread in the potato hill, before covering, has preserved the crop from insect ravages. A fork full of sea weed in each hill would be still better.

Within a few years, Guano, or the manure of sea-fowls, has attracted much attention. In England, the humid climate of which is particularly favorable to its use, the results of experiments have been so remarkable as to induce extensive importations. An immense number of vessels are engaged in the trade, and numerous islands of the Pacific Ocean are literally disappearing. In this country, guano has many ardent advocates, and has been applied with various success. In some instances, it has realized sanguine expectations, and in others fallen in the rear of common manures. It is unquestionably one of the most powerful stimulants to vegetable growth, and is reputed to be of permanent value to the soil. Success in the use of this article, however, depends on the exercise of judgment. The same is true of lime, (an excellent neutralizer of acids,) crushed bones, poudrette, etc. But after all, a Farmer's chief reliance should be on his barn yard and cellar, hog yard, and compost heap.*

*In the "Farmers' Library," for September 1845, Mr. Teschemacher, of Boston, says: "In no soil but a stiff clay, can guano fail to produce its effects: in no soil but one amply

To the aid of agriculture, the animal creation, the treasures of the earth, and the riches of the ocean have been made tributary. But not contented with these resources, man has grasped the fiery element of the skies, and pressed it into the same service. Science has now demonstrated that electricity is intimately connected with vegetable life, and that its application to plants greatly accelerates their growth. "Many observing farmers will, no doubt, have noticed, that vegetation proceeds more rapidly after a thunder storm, than after one which shows no electrical phenomena; and we find, on examining the various formations of the parts of plants, that they are well adapted for the passage of electricity through them, either from the *earth* or the *atmosphere*. Witness the points and serratings, as well as the hairs and down on the leaves, all good conductors, and calculated for affording it a silent and easy passage.*"

For the discovery of this use of electricity, the world is indebted to a lady. With the aid of a common electrical machine to which was affixed a wire conductor, she supplied a certain portion of her garden with a constant flow of electricity. "The effect was, that vegetation did not cease in the winter on the spot under the influence of this wonderful power, and that what snow fell during the continuance of the experiment never remained, as it did on the rest of the garden around."†

Interesting experiments have recently been made, both in this country and in England. By electricity collected from

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provided already with phosphate of lime, can its effects fail to be permanent. In arid soils, it is, if properly applied, of great value, as it infuses that strength and solidity into the juices which enable the plant to withstand the drought. To this object, one of my experiments has been devoted with perfect success. On a southern bank my peas were green and fresh, while those of my neighbors, with manure, were brown and burnt up. This, and every other efficient action of guano, is produced by reflecting on the growth and position of the roots of plants, and placing the guano in such a situation that they may reach it when they are of pretty good strength, and the moisture of the soil has sufficiently decomposed the manure; but sowing the seed in contact with guano, or placing it where the young sprouting root touches it immediately, is sure to cause a failure. The same is sure to ensue when the guano is spread on the surface, so that ammoniacal virtues escape into the atmosphere."

*N. Y. Farmer and Mechanic.

†London Spectator, Oct. 26, 1844.

the air, by wires suspended on poles and connecting with the earth, barley, on a given quantity of land, grew faster, and produced a greater number of stooks, than the unelectrified land adjoining. The ears from one grain of seed were more numerous and longer, and the corn was also larger and harder. An experiment on potatoes greatly increased the crop. Cucumbers 5 inches long and 1 1-2 in diameter, have been produced in 37 days after planting, when electricity by a Leyden jar has been applied, and a dahlia cutting that received two charges, grew nearly five feet in 20 days after it was set out.

These results are as astonishing as those produced by the application of Guano. But many experiments are still necessary, before we can pronounce with certainty on the practical utility of this mysterious fire as an element of common husbandry.

Another point I would press, is the importance of improving our native breed of neat cattle. On this subject, I confess myself thoroughly "Native American." It has always seemed to me a reproach to the farming interests of this country, that it should depend on foreign supplies of improved stock, when it could easily be supplied at home. I hold it to be unsound policy to send a dollar out of the country for what can be produced here. In saying this, I mean no disrespect to the Durhams, Ayrshires, and other bloods that have been introduced into the United States from Europe, and that have benefitted both the dairy and the shambles. But I believe, that in our native breed, we have the elements of a superior stock, which it is the duty of enterprising farmers to develope; and that if they will raise their most promising calves instead of selling them for slaughter, we may, in a few years, have an improved race of neat cattle, that will in every respect equal, if not surpass, any now imported.

Another consideration in favor of native cattle, is the superiority of their hides for leather. Mr. Ellsworth, in his last annual Report to Congress, says that "some hides are actually worth twice as much as others for their wear after being tanned. The hides of the Durham cattle, for instance, are more open and porous than the hides of the native cattle," and

will be inferior for leather when manufactured—a fact of no little pecuniary importance to the consumer.

A subject intimately allied to the foregoing, is Pasturage.—Good pasture is as essential to the best results of the Dairy, as it is to the best appearance of stock. "Short commons" will make "lean kine" and "thin skimmings," and an inquiry into the method by which the largest number of cattle may be kept in good flesh on the smallest number of acres, can never be regarded as idle. There are, in Essex County, more than 100,000 acres of pasturage. Much of this is poor—so bound-out, that a ten acre lot in midsummer, will scarcely afford a cow her fill, though she feeds from "dawn to dewy eve." Such lands may be renovated, without loss of the spring feed, by breaking up in August, and sowing grass seed with rye. The rye will afford ample feed the following spring, while the grass is obtaining further root. If but half the field is broken up at a time, it need not be vacated a single season.* Pastures mossed over, that cannot be ploughed, may be benefitted by harrowing and a dressing of salt.

Time may be saved to farmers, in renovating their mowing lands, by sowing grass seed among corn at the last weeding, and covering it with a light harrow, fitted to pass between the rows. Experience has proved that hilling is not necessary to the support of corn, and if, when taken off, the stalks are cut close to the ground, and the land rolled, the stubble will present no impediment to the scythe. Two advantages are secured by seeding a cornfield. First, an effectual protection against drought, a point not always gained when grass seed is sown with barley or rye; and secondly, the grass shares the benefit of the manure, without perceptible injury to the corn, and a more luxuriant growth is obtained. Land broken up in the autumn, and planted the next season with corn, may be treated in the same way. This plan has the approbation of many of our most judicious farmers, and from the success I have witnessed in the practice, I feel confidence in recommending it.

* This method has lately been brought to public notice, by Wm. Buckminster, Esq., editor of the Massachusetts Ploughman. It is said to have been practised thirty years ago, by a farmer south of Boston, whose name I do not remember.

Soiling, or feeding milch cows on green fodder, though highly approved by many, is not practised to the most useful extent in this county. Usually, every season, the dairy suffers several weeks, in consequence of "parched pastures." The loss of income following, may be effectually prevented by soiling in the barnyard or stall, and a large quantity of manure saved, that, dropped in the field, will be in a measure wasted. An Essex farmer, by this process, kept up the milk of his cows during the most trying period of the past summer, and found ample remuneration for the trouble, in the extra receipts of the dairy. The product of a single acre will suffice for ten or fifteen cows, and "give them their fill."* Farmers who are deficient in pasture, may, by resorting to green fodder, profitably increase their dairy stock.

If farmers, who have easy access to market, were to raise larger quatities of carrots, and other roots for their milk stock, with *a view to a* winter dairy, I am confident they would obtain a profitable return for their labor. With a sufficiency of such food, and a pint of indian meal to each cow per day, cows that come in in the autumn, (which they should do for a winter dairy) will give a rich supply of milk all winter, and the cream, under the management of a skillful dairy woman, will produce butter of fine appearance and flavor. Fresh made butter, of this character, will always secure a quick sale, and a higher price than the best quality laid down in June or September.

It is gratifying to notice the increasing attention, in all parts of our country, to the cultivation of fruit. I well recollect when the common doctrine was, let each generation provide its own fruit, and many farmers refused to replenish decaying orchards, because, as they said, their old trees would afford a sufficient supply for their own use while they lived, and those who came after them must take care of themselves. They seemed to have forgotten that those old trees were planted by *their* fathers, who, had they acted on this selfish principle,

*An acre of land will yield from twelve to twenty tons of green corn fodder. It is stated in an agricultural paper, that George Randall, Esq., of New Bedford, has, this season raised thirty-one tons and eighty pounds to the acre.

would have left their farms barren of trees. But worthier sentiments are now prevailing. The agricultural community are becoming more conscious of the duty they owe to posterity to leave the world better than they found it, and acting upon this principle they erect the worthiest monument to the memory of their ancestors, and evince a commendable regard for those who will one day succeed them.

Formerly, much of the fruit cultivated, was of an inferior quality. But orchardists have discovered that the best kinds can be produced without enhancing the cost, while the demand and price in the market are greatly increased. Essex County now produces as fine apples, pears, quinces, plums, &c., as can be found in the Commonwealth, and the contributions to the annual exhibition of the Massachusetts Horticultural Society in Boston, by gentlemen resident in Salem, Beverly, and the adjoining towns, are highly creditable to their pomological taste and skill. Much praise is due to the Essex County Natural History Society, for the service it is rendering to the Fruit interest, by the weekly exhibitions gratuitously opened to the public from Spring to Autumn. The annual exhibition, just closed, has not been surpassed, in the quality of its fruit, by any show I have elsewhere witnessed.*

For common cultivation, the apple is doubtless the most lucrative, and therefore deserves the first place in a farmer's estimation. Beside the increasing domestic consumption, foreign markets are constantly opening, promising a sure demand for the surplus that the most favorable seasons bestow. In the year ending 30th June, 1844, apples to the value of $51,465, were exported from this country. Winter fruit will always sell at fair prices. A farmer, with a thrifty orchard of Baldwins, Roxbury Russets, Rhode Island Greenings, and other choice varieties, will derive more income from its cultivation than he can from the same amount of labor employed in any other way. The "Black Pear of Worcester," and the "Iron" or

*The late Robert Manning, Esq., of Salem, "the great Pomologist of America," gathered into his own collection nearly 2000 varieties of fruit. From that collection 240 varieties of the pear were presented at the recent annual exhibition of the Massachusetts Horticultural Society.

"Pound Pear" are also valuable fruits for winter use. They are prolific bearers, keep remarkably well, and always command a good price in the market.

In some parts of the Commonwealth, the cultivation of Cranberries is beginning to engage attention as a source of revenue. The demand for this fruit is extensive, the supply limited, and the price consequently high. There is much land suited to their culture, which at present yields little or no income.—Strawberries will also handsomely remunerate labor in the vicinity of cities and large towns. The purple grape of our woods, which makes a delicious conserve, may be reared with advantage.

More attention should be paid to garden fruit culture. Every individual possessing a garden, can, in a few years, supply his family with all the summer and autumn fruits in rich abundance, with little expense beyond the leisure moments that may be employed for such purpose.* In the cultivation of fruit, luxury and health are for once united.

For ten years past, this society has, with commendable spirit, encouraged the cultivation of Flowers. This is at once a delightful and innocent recreation, and I never pass a farmhouse, graced with the gaudy marigold, showy peony, or splendid dahlia, nor the humble cottage window, with its pot of modest daisies, without an awakening sympathy for their inmates. Nor is the *moral* influence of floriculture to be overlooked. It brings the mind so immediately in contact with the Infinite One, by whom the numerous orders of the floral world were formed and received their varied hues, and so exhibits wisdom and design in their structure, that he who "has considered the lily," the fabled love of Juno, so beautiful in its texture, and so admira-

*Mr. John M. Ives, of Salem, one of our most skillful Pomologists, in his enlarged edition of Manning's New England Fruit Book, recommends the following selection of pears for garden culture:

Summer Fruit. Madaleine, Bloodgood, Dearborn's Seedling, Early Rousalette, Summer Franc Real. *Autumn Fruit.* Belle Lucrative, Bartlett, Flemish Beauty, Urbaniste, Cushing, Duchesse d'Angouleme, Andrews, Long Green, Beurre Bosc, Louisa Bonne de Jersey, Golden Beurre of Bilboa, Washington, Seckel, Bon Chretien Fondante. *Winter Fruit.* Beurre d'Aremberg, Winter Nelis, Lewis, Easter Beurre, Vicar of Wakefield *Cooking Fruit.* Catillac, Black Pear of Worcester, Dr. Hunt's Winter.

ble for the study of the young botanist, or has reared the rose

> "Full lipp'd and warm,
> Round about whose riper form
> Her slender virgin train are seen
> In their close-fit caps of green,"

cannot remain insensible to the Divine Presence in his works. There is beauty and instruction in flowers, and their cultivation is no unfit employment for either sex.

Though the Agriculture of Essex County has made advances highly creditable to the enterprize of its farming population, and is, perhaps, in as prosperous a condition as in any other section of the Commonwealth, it has by no means reached the highest point of excellence. Many improvements remain to be adopted that will prove as beneficial as those already reduced to practice. Agriculture, in this country, is comparatively in its infancy, and while the motto of Essex Farmers is, "prove all things, hold fast that which is good," they will doubtless continue as they have hitherto done, to make experiments on a small scale, and contribute their share to the advancement of the science. For their general benefit, I would recommend the holding of agricultural meetings in each town during the winter months, similar to those held in Boston during the sitting of the legislature. In these meetings may be discussed all the topics of interest to farmers. Reports of experiments may be made, and such other information communicated, as will be of practical service. It seems to me, one evening in a week cannot be more pleasantly or usefully occupied than in an assembly of neighbors, where, without irksome formality, each adds, as he is able, to the common fund of knowledge. It will not only serve to expand the fraternal element of man's nature, but to create a desirable *esprit du corps.*

The Agricultural capabilities of Essex county are far from being exhausted. Not only do large quantities af unimproved land remain to be recliamed and rendered among the most valuable, but the crops on that already under cultivation may be greatly increased, with larger profits on the outlay than are now realized. Indian corn and potatoes are among our principal crops. But neither of these does justice to the quantity of

ground cultivated. Owing to some erroneous principle in cultivation, shallow ploughing, and spreading the manure on two acres that ought to be put on one, for example, the corn crop often does not "pay well,"—at least farmers *say* so—while the complaint is not less frequent, of "small potatoes and few in a hill."

I do not suppose we can raise the large crops of corn, per acre, that are produced in the west—nor do I think we can vie with the Green Mountain State in the culture of potatoes, where some of the best farmers consider 1000 or 1200 bushels per acre an ordinary crop. But that these crops can be made more prolific, and consequently more profitable, than they now are, I do believe. The late Agricultural Commissioner of Massachusetts, in his survey of this county, presents instances in which 105, 110, 113 1-2, 115 and 117 1-4 bushels of corn have been harvested from an acre, and 400, 484 and 518 1-2 bushels of potatoes. These were extraordinary yields, and not specimens of what may be commonly expected under the most improved systems of husbandry; but I entirely coincide with that gentleman, that "with less than 50 bushels of corn to the acre, and 300 bushels of potatoes, no farmer ought to rest contented."

An alarming phenomenon in the potato culture, at the present moment, is the disease that has proved so destructive, and which appears to be annually extending the sphere of its ravages. Many and contradictory causes have been assigned for this disease; but after perusing the various theories published on the subject, I confess myself still in doubt. I can only say, in the language of Gov. Lincoln, "*it is death to the potato.*"—Though we may not now penetrate the mysteries of this disease, we may, at least, learn from it our dependence on the "God of the Harvest." Happy for us, if we receive the lesson.

The selection of seed corn deserves consideration. This should be made in the field, before harvesting, from the fairest and most forward ears. This process, constantly practised, will, in a few years, advance the ripening of the crop a fortnight. Of this fact, the exhibition of to-day, is a satisfactory evidence. By thus obtaining seed that will mature two weeks earlier than

corn is usually harvested, the crop will be secured from the injurious effects of a backward spring and early frosts, as well as from the storms of October, which often beat it down and render the butt stalks comparatively worthless for fodder, while in fields partly in grass, the fall feed will be made available at the most serviceable time.

Much may be done to increase the value, and beautify the appearance of our barren hills and sterile fields, by planting them with forest trees. This topic has been more than once presented to your notice, but can never lose its intrinsic importance by repetition. Besides the pine, cedar, elm, ash, oak, birch, larch and locust, I would recommend the cultivation of the chestnut. This tree is a native of Massachusetts, and will thrive well on our poorest soils. It grows rapidly, and often to a large size. The timber, in exposed situations, is said to be more durable than the oak, and the tree, besides being ornamental as a shade, produces a fruit that always commands a ready market.

There is a beautiful story of Ulysses, who, returning from Troy after ten years absence, found his venerable father employed in planting trees. On asking him, why, being so old, he put himself to the fatigue and labor of planting that of which he was never likely to enjoy the fruits, answered, supposing himself addressing a stranger, "I plant them against my son Ulysses come home." And there is another, of touching interest, told of the Natick Indians, who, in affection to Mr. Peabody, the successor of the "Apostle Elliot," planted two "friendship trees" before his door. For ninety years, they paid homage to exalted worth, "when one was riven by lightning, and the other seemed to perish through sympathy." A similar token of regard was offered to Rev. Mr. Badger, in 1753. "These trees are still in full vigor, and remain beautiful monuments of affections which have gone out on earth, but are destined to be rekindled with a purer flame."*

These, gentlemen, are examples worthy of imitation. If gain does not prompt you to plant the forest, let love move you

*Fourth Mass. Ag. Rep. p. 394.

to plant the "friendship tree" for each Ulysses,—aye—for each "beauteous Helen" of your blood. Let groves spring up in your fields, to speak to coming generations of the best sympathies of the human heart.

One of the most striking features of the Agricultural population of this county, is its essential equality. Here are none of the broad lines, that, as in England, mark the several ranks of land proprietors, land lessees, and land laborers—castes maintained with a strictness that would delight a Brahmin.—Here, one man is esteemed better than another, only as he is more industrious, prudent, virtuous,—and more ready to relieve suffering humanity. In the mutual dependence of the employer and the employed, and in the mutual respect with which each treats the other, they approach as nearly, perhaps, the Ideal of Republicanism, as the imperfection of human nature will permit. This arises, in part, from the general prevalence of *free-holding*. Here are no plethoric land-holders, and half-famished land-workers. Few farms cover 400 acres, and the average not more than 100. The advantage of this state of things is in too striking contrast with the exhibitions of the old world, where the laborer is doomed for life to the condition in which he commences it, to escape attention, or to require argument in its favor on the score of competency and happiness.

I might cite an hundred instances within my personal observation, to prove that large farms are not necessary to agricultural success. I have in my mind at this moment, an individual, whose entire landed estate has never exceeded twenty acres. Yet he has maintained, reputably, a family of eight sons and daughters, added something annually to his capital, contributed liberally to the support of christian institutions, and found time to enjoy, with christian sobriety, the pleasures of social life. What he has done, all may do.

There are, perhaps, few topics of more anxious interest to a young man, than the choice of occupations, and on this I would offer a few remarks. It is not easy for a youth to select a future pursuit of life, in which he may best succeed, far in advance of the period at which apprenticeship usually commen-

ces, though the subject may engross much of childhood thought. Nor can specific rules for selection be laid down, that may invariably be adopted. The circumstances, capacity and inclination of each individual, will do something to determine the choice. I may say, however, that while the learned professions, the mechanic arts and trade hold out many inducements to the inventive and enterprising mind, the attractions of Agriculture are certainly not less substantial.

If a young man of good understanding, industrious habits, natural inclination for rural occupations, and capacity for a good farmer, were to ask me why I advised him to till the soil, I should answer,

1. Because God has endowed you with talents to *excel* in this business, and by following the indications of his Providence, you will best fulfil your mission. If you embark in other enterprises, that seem to hold out more flattering pecuniary emoluments, yet for which you have no decided predilection, you may fail, or meet with indifferent success, and your disappointed hopes will embitter every enjoyment of life.

2. Because it is a *safe* business. There is none that incurs so little risk, or that yields more certain returns. If large fortunes are not realized, a comfortable and honest living is at least obtained,—income enough to support a family, pay taxes and other necessary expenses,—and that is more than is accomplished by a majority of those who crowd into cities and large towns, to engage in trade. An old and observing merchant in Boston, remarked a few years ago, that he had, for forty years, kept his eye on the young men who commenced business in a certain street, and that to his knowledge, but *one* in *twenty* succeeded. Nineteen out of twenty, or ninety five out of a hundred, failed, and compounded with their creditors for a few shillings on a dollar, making a total loss of capital in the aggregate, sufficient, perhaps, to have purchased a snug farm for each, on which they could have lived in competency.

Gen. Dearborn, in a speech before an Agricultural meeting in Boston, in 1840, said, "after a pretty extensive acquaintance with business men, and no limited observation of the com-

mon course of things, he was satisfied that among one hundred merchants and tradesmen, not more than three in the city ever acquired independence. It was with great distrust that he came to this conclusion, but upon consultation with an experienced merchant, *he* fully admitted the truth."

Do not understand me, by these remarks, as undervaluing trade. No one respects it more. It benefits the farmer, and enriches the country, and I rejoice that there are those whose tact and talent qualify them to succeed in it. But observation has taught me something of its reverses as well as of its charms; and if a farmer's son prefers safe employ and moderate compensation, to a business with as many chances of bankruptcy as there are snags and sawyers in the Mississippi,—if he would escape the torment of professional "shoppers"—the vexation of delinquent debtors—the incubus of fluctuating markets, and the horrible spectres of refused discounts, "two per cent. a month," and protested paper,—let him accept his father's proposition, and keep to the homestead, or invest his first earnings in a small farm.

But there are other and still more important reasons for choosing agricultural pursuits. These are health, social enjoyment, and the improvement of the moral affections. I believe health is more general, and the average of life is longer, in rural districts, where due attention is paid to the laws of physiology, than is found elsewhere, owing, probably, to simpler habits of living, comparative freedom from anxiety incidental to trade, and the diversity of exercise, that gives more uniform action to all the muscles. And as for rational enjoyment, a farmer with a grateful heart, a generous soul, a neighborly spirit, and a will to use life as his Creator intended, may have all that can be realized on earth. And then, how suggestive of better thoughts, of filial reverence, of holy aspirations, is his occupation! At every step, and in all the wide Universe around, he beholds the traces of a benignant Providence, the manifestations of a Merciful Father. The corn that springs up to bless his toil,—the verdure that yields to the pressure of his feet,—the flowers that challenge his admiration, as they mingle their ambrosial fra-

grance with the zephyr's breath—the forest's green perspective, and the soothing murmurs of the brook,—all, are to him witnesses of a Maker's love, and teachers of Man's duty to his race. And all he sees of wisdom and goodness in the works of God, inspires his heart with trust, confidence, and "loving gratitude." If any man has reason to rejoice in his condition, it is an American Farmer. Eating in quietness the bread of industry, he knows nothing of the anxiety, envy and unprincipled ambition, that rankle in the breasts of "trading politicians," and he looks upon their struggles for "place and spoils" with unutterable disgust. "Lord of the soil" he cultivates, an independence unknown to other pursuits, stamps him

> "Nature's own Nobleman, friendly and frank,
> A man with his heart in his hand."

Leaving this theme, I pass to consider a want of our times. This is an attractive agricultural reading for the young. Man is to no small extent, the creature of early impressions; and the reading of childhood often gives complexion to the character, and directs the aims, of manhood. Many a lad, not remarkable for the preponderance of a particular propensity, has been led to the choice of after pursuits, by the books he has perused. The life of "Jack Sheppard" has made many a villain—of Howard, many a philanthropist. One reads the life of Franklin, and aspires to the honors of a Philosopher, or to lead public sentiment through the press. Another peruses the life of Washington, and makes him the model of his public career. Art, Science, Law, Medicine and Theology, are indebted to the reading of childhood for many of their brightest ornaments.

Now what I wish, is, to make this exercise auxiliary to Agriculture—through it, to awaken and deepen a love of the beautiful in the works of creation—and by it, to wed many an ambitious spirit to the cultivation of the soil. I wish to see the subject of Agriculture hold a place in our school books, as prominent, at least, as that of War. If the spirit of the latter is to be fostered where young ideas bud, and often fruit, by the charms of poetry, it cannot be asking too much that the praises of peaceful Agriculture be said in sober prose. The relation which the latter holds to the former, in some of our school

books, affords little hope for an improved public sentiment while they continue in popular use. I was induced, not long ago, to examine a reading book for the upper class in schools—read daily by tens of thousands of youth—with a view to ascertain how far its pages contributed to win the young heart to your honorable calling. I found eloquent thoughts on the landing of the Pilgrim Fathers, and a humorous account of The fat Actor and the Rustic. There were mirth stirring pieces, and pieces of sober devotion. There were the Battle of Hohenlinden, and Voices in the Church Yard—Lochiel's Warning, and a Soliloquy on the immortality of the soul—the Battle of Flodden Field, and Dr. Slop meeting Obadiah—the Pleasures of a cultivated imagination, and A new mode of fishing—all excellent in their way; but the only piece I discovered that could be properly placed in the category of Agriculture, was Irving's burlesque on a Yankee Farmer, who builds a palace of pine boards large enough for a parish church, which he never finishes,—"soon grows tired of a spot where there is no longer room for improvement, sells his farm, his air castle, petticoat windows and all, re-loads his cart, shoulders his axe, puts himself at the head of his family, and wanders away in search of new lands, again to fell trees, again to clear cornfields, again to build shingle palaces, and again to sell off and wander."

This description may doubtless afford amusement to the young tyro, when his self-invented resources fail. It may form an agreeable relief to the puzzles of the black-board, or the conjugations of Lindley Murray, but that it will inspire a farmer's son with respect for farming, or create in him a preference for his father's business, I do not believe. To counteract, then, the unfavorable influences of the school room, in this particular, our school books should contain a reasonable proportion of reading on agricultural and kindred topics. Every farmer should take an agricultural newspaper, that his sons, as well as himself, may become familiar with the most improved methods of husbandry in every part of the world. And books, in poetry and in prose, descriptive of rural scenes, of the advantages, the moral influences, and the social pleasures of agricul-

tural life, should be multiplied. In this way, would I have every farmer's son, and every other man's son, receive with the first rudiments of education, worthy impressions of this branch of industry—impressions that will deepen with his years, and that will secure a due share of the muscle and mind of the rising generation to a pursuit so rich in its resources of enjoyment, and so certain in its results.

There is frequent complaint among farmers, that their sons early manifest a distaste for Agriculture—that as soon as they are of an age to be useful, they seek other employments, and leave them to manage the homestead under the disadvantage of hired assistance. I do not suppose that every farmer's son will make, or that it is necessary that every farmer's son should become, a farmer. The trades, arts, sciences and learned professions have a claim on youth. There are "diversities of operations" that require a division of labor. But still, I believe, by the process I have suggested, and another I shall now speak of, the evil of which farmers complain would be in a great measure obviated.

Besides, then, furnishing our youth with "Rollo" and "Lucy Books" of agriculture—besides enriching their minds with the beauties of Bloomfield, Gay, Thompson, Cowper, Burns, and other gems of verse, I would have every farmer educate that son that discovers the best natural taste and capacity for farming, for a farmer. That is, the conversation and counsel of the fireside, the instructions of the field, and the studies of the school, should all be directed with reference to qualifying him for the practical duties of the farm. Why not? Youth are educated for lawyers, physicians and merchants. Why not, then, educate them for farmers, when the influences of education do so much to develope or create attachments to particular pursuits? If, as was suggested in the able address before you last year, the elements of agriculture were made a branch of study in our common schools, the best results might be confidently anticipated. Possibly some may consider this a useless appendage to the studies now pursued. They may think that a boy can learn enough of agriculture on the farm, without the study of books. But if I have rightly estimated

the influence of books on the choice of pursuits, then this study, so far from being useless, will be found an important auxiliary to an interest from which other interests are annually abstracting much of the best talent.

And now that I have entered the school-room, permit me to say, that notwithstanding the changes for the better we every where witness, public opinion on the subject of common school education, is susceptible of further improvement. A noble spirit has been awakened in Massachusetts. A glorious work has been successfully begun. Under the operation of our present school system, the advance of the last eight years has been equal to the twenty preceding. The annual Abstracts of School Returns, and the eight annual Reports of the Secretary of the Board of Education, have thrown a flood of light upon the condition of common schools throughout the Commonwealth. They show that what has been so well done, is, in a sense, preliminary—that much remains to be done to give our schools entire efficiency—and that popular sentiment is still to be disabused of hurtful prejudices.

I rejoice in our educational elevation. Still, I must say, the standard is too low. As a community, we have not yet apprehended the true idea. The indifference of thousands, who hold the responsible relations of parents and guardians, is yet to be overcome.* The eyes of many are to be unsealed, who are blind to the bearing of education on the physical, social

*The Secretary of the Board of Education, in his eighth annual report, states that "thousands and thousands of our children, between the ages of 4 and 16 years, attend no school whatever, from the beginning to the end of the year." This is an outright loss of "thousands and thousands" of dollars, raised by taxes, for the education of these absentees. Another evil to which I wish to invite the attention of parents and guardians, (for they alone can remedy it,) is, irregularity of attendance. The average attendance in all the public schools of the commonwealth, of children between 4 and 16, is *less than two thirds* of the whole number between these ages. In Essex County, the fifth in educational rank, the whole number of children between 4 and 16 years is 25,848. The highest number of scholars of all ages in all the schools, including 458 under 4 years, and 847 over 16, is 18,210, or 7,738 less than the number of children between 4 and 16. The highest average attendance is 12,800, or 5,410 less than the number of scholars in all the public schools. The amount of money appropriated by this county for the education of children between 4 and 16, is $66,952 73, or $2 59 per head. Of this sum, more than $14,000 are practically wasted, by irregularity of attendance! Though Massachusetts is in advance of all other states in the Union, these facts show that perfection belongs to the future.

and moral condition of the rising generation. And many have still to learn, that to read, write and cypher, is not education enough for a mechanic or a farmer. If, indeed, we listen to some European "patron" of the laboring classes, we shall be told that it is "quite enough of general knowledge for the children to know their prayers and the catechism, and of geography, for them to find their way from their house to their work." We shall be assured that no importance is to be attached "to intellectual improvement amongst the agriculturists," and that no attempts should be made to "raise these people out of the condition which Providence has assigned them."* This may be a popular doctrine in the "sea girt Isle," *where more than a million and a half of children of a suitable age to attend school are left in a condition of complete ignorance,*† *and where field laborers, of both sexes, herd promiscuously at night in cattle stalls and stables;*‡ but it is not a doctrine to be received by the farmers of Massachusetts. It is no doctrine for the farmers of Essex County, and in their name, and for myself, I repudiate it now and forever.

It is Mind that gives man his supremacy. It is developed intellect that lifts one man above another, and procures for the individual unblest with this world's abundance, respect, honor, influence and consideration that wealth can never purchase. I would have the humblest farmer's boy, by education, raised to a level with his more favored fellow. I would give him a fair start in the world—a fair chance to be *felt*, through the influence of his talents, in the assembly of his townsmen, or in the halls of legislation. I would have every farmer's son know enough of chemistry, to analyze soils, and prepare composts§—enough of geology, to understand the origin and nature of soils—enough of botany, to understand the structure of

*Colman's European Ag. p. 191, 195.

†Mann's seventh Ed. Report, p. 40.

‡Colman's European Ag. p. 51.

§Chemistry, by unfolding to us the effects of heat and mixture, enlarges our acquaintance with the wonders of nature and the mysteries of art. In a young country, where improvements in agriculture and manufactures are so much to be desired, the cultivation of this science, which explains the principles of both of them, should be considered as an object of the utmost importance.—*Dr. Rush, on the mode of education proper in a Republic.*

plants and flowers, and to classify them—enough of natural history, to know the habits of the animal, feathered and insect tribes—and enough of physiology, to recognize the laws of health, and the secret of prolonged life. In a word, I would have him a perfect master of his noble calling, so far as depends on education. And it is for this reason, that I desire to see our Common Schools, where the majority of our children, and nearly every farmer's son receives his entire education, fostered with increasing care, and made equal to the highest intellectual cultivation that stops short of the University. I insist upon this high standard, because intelligent labor is better and cheaper for those who hire, than ignorant,—because I wish to see agriculture placed in its true position before the world, and dignified in the eyes of its own sons—because I would banish forever the false notion, that physical toil is incompatible with intellectual culture—and because I would not have withdrawn from the plough, one ray of the glory that encircled it, when Cincinnatus quitted it to command the Roman Armies, or our own Washington, to be the Saviour of his Country.

In the remarks now offered, I have made no reference to farmer's daughters. I would not, from this cause, be supposed to cherish indifference to their intellectual improvement. Far from it. The advantages I demand for the son, I claim for the daughter. When, in the olden time, a prayer was offered, "that our sons may be as plants grown up in their youth," it was added, "that our daughters may be as corner stones, *polished* after the similitude of a palace." In my plea for education, I can make no distinction in the sexes that God has not made. I believe the best education, and the fullest developement of their intellectual powers, that circumstances will permit, is the right of both,—of the sister as much as the brother. If knowledge is a blessing to the latter, it can be nothing less to the former. The purpose of female education, as is justly remarked by a successful female educator,* is to lead the sex "in the path of duty—to make better daughters, wives

*Mrs. Phelps.

and mothers,—and better to qualify them for usefulness in every path within the sphere of their exertions. The true object of education, is not to lead woman from her own proper sphere, but to qualify her for the better discharge of those duties which lie within it. By being enabled to see more clearly the peculiar obligations which devolve upon them in their various relations, and to discern the boundary between their duties and those of the other sex, they will be restrained from indelicately passing the barrier which the Almighty himself, in the peculiarities of physical as well as mental constitution, has established between them. Females are not called upon to lead armies, make and execute laws, or to preside over public safety." But they may be called to equally important and responsible duties. They "may be called upon to preside over the domestic circle,—to regulate families by their wisdom, and to guide and enlighten the youthful mind. In the proper performance of these duties, they will need all that clearness of reason, and solidity of judgment, to which a thorough and well conducted education may conduce. No law, human or divine, forbids that the female mind should seek to penetrate science," or that she should be accomplished in any of the arts that constitute a polite education.

Mr. Colman, in his "European Agriculture," has described an English lady of highly cultivated intellect and rare accomplishments, who, living in the midst of gilded halls and hosts of liveried servants, was as familiar with the dairy and the entire system of husbandry, as she was with the elegant luxuries of life, and whose visits to the barn and piggery were as unrestrained as to the library. Now this beautiful Ideal may, to a certain extent, be realized by every farmer's wife and daughter. I maintain, there is entire congruity between a cultivated intellect and polished manners, and the performance of the commonest duties of domestic life—between, if you please, a knowledge of the Latin classics and making a cheese—of the piano and the spinning wheel—of embroidery and making a pudding—of algebra and darning a stocking. That woman is worthy of admiration, as she will always command it, who combines a thorough knowledge of the details of house-keeping

with the charm of intellectual and personal accomplishments. It is these last that dignify labor, and impart to domestic life a true zest, and where we see them in this combination, we are prompted to apply the compliment paid by Dr. Johnson to Mrs. M'Kenzie: "She is the most accomplished lady I found in the Highlands; she knows French, music and drawing; sews neatly; makes shell-work; *and can milk cows.*"

There is one other topic kindred to this, which I should like to treat at length, but to which my limits will permit only a brief reference. I mean the more exact attention that is due to the *Rights of the intellectual nature, and to the laws of physical existence.* The careful observer will not have failed to discover, that even in New England, these points have not commanded the consideration they deserve. As a people, we are every year more and more departing from a sound principle of health and happiness, by overtaxing the physical powers, and withholding what is justly due to the intellect. We push the former to the extreme verge of ability, and leave the other to amble on at leisure. Life is hurried and excited, and a constant war is waged upon the restorative powers of nature.—These statements may seem strange, but they are true, and therefore, should be exhibited. Shakspeare makes one of his characters say,

> "So many hours must I tend my flock;
> So many hours must I take my rest;
> So many hours must I *contemplate;*
> So many hours must I sport myself."

The soundness of the principles unfolded in this quotation is self-evident. In man's present state, labor is necessary. It is an axiom of inspired authority, that *if any will not work, neither shall they eat.* Under the restraints which Christianity imposes, the eating of one's bread in the sweat of his brow, is a blessing. But man needs time to wind up the machinery of animal life—to re-gather the dissipated energies. His higher nature needs the indulgence of intellectual pursuits. Toil, rest, recreation and reading or meditation, in proper combination, are essential to healthy and happy living—to the perfect developement of the true man.

But where, at the present day, do we see any approximation to this division of time, among wha tare technically denominated "the laboring classes?" If we examine the condition of the thousands of unmarried females and widowed mothers, who ply their needles in our cities and large towns for a livelihood, we find it is

"Work— work—work!
Till the brain begins to swim;
Work—work—work!
Till the eyes are heavy and dim!
Seam and gusset and band,
Band, and gusset and seam,
Till over the buttons they fall asleep,
And sew them on in a dream."

And how is it with the agricultural population? A large proportion of this class toil sixteen hours out of the twenty-four—a longer period of continuous exertion than is required of the slave, with whose brutalized condition we so justly sympathize, leaving not a single hour, (if eight be given to repose) for recreation, social intercourse, or self-culture. Even the winter,—nature's restorative,—no longer, as formerly, brings relaxation to the farmer. "He works," it has been said, "as hard as he can in the summer, and in the winter, a great deal harder." And the good old fashioned neighborhood parties of our childhood, so promotive of fraternal sympathies, have been banished from the circle of rural life, and find a place only in the "pleasant memories" of other days.

But more than this. We "laboring people" of New England, do not take time even to eat. We are the only people, I believe, on the face of the earth, blessed with a sufficiency of food, that are so parsimonious of minutes in this respect. Our food is *bolted*, not masticated, to the manifest injury of the digestive organs,—and when we have thus replenished the stomach, we hasten to our toil, to recover, if possible, the moments wasted in this exercise. And what is the result of these and collateral abuses of the compound nature? An enfeebled race of men and women. We look in vain, among the rising generation, for the robust constitutions, and promise of the health and long life that blessed our ancestors; and we shall con-

time to look in vain while the work of two years is crowded into one. In placing man here, it was no part of the Divine Plan, that he should thus overreach himself—that he should commit moral, intellectual and physical suicide. If God gave him broad acres to cultivate, he also gave him a mind and body to improve, and he gave him time enough, when properly allotted, to do both.

Of all active employments, farming is, perhaps, most congenial to self-culture. In some mechanical pursuits, success often depends on the concentration of the mind to a single point. The nice calculations that enter into a new invention, or an improvement of an old one, forbid attention to any subject out of that particular line. But it is otherwise with the farmer.—There are many hours in which he may reflect and meditate on topics foreign to his business, without impeding it. He can carry into the field, and digest the contents of a valuable book, while turning the furrow or cultivating the crop, and feel refreshed by the exercise. And if, as 'tis said, "an empty brain is the devil's workshop," where all sorts of mischief are forged, he is the wisest man, and in the safest condition, who goes to his daily employ, well provided with matter for profitable thought.

Why, then, should not this truth be kept constantly in view? Why should not every farmer and every farmer's wife, have time for moral and intellectual improvement? Why should they not have a choice collection of books, small though it may be, and time to peruse them? Why should not the one be familiar with the best works on Agriculture and Political Economy, and the other with the productions of Moore, Edgeworth, Sigourney and Beecher? Nay, why should not the great truths of Revelation, those that unveil eternity, and impart lustre to the soul's destiny, occupy an occasional hour of undistracted meditation,—of inspection as anxious as was ever devoted to "the contents of a rich man's last will and testament?"

Industry and enterprise, I profoundly venerate, and feel myself bound to say and do what I can to give them healthy stimulus. But I cannot close my eyes to the evils of their *abuse*. All excess is hurtful, and to be deplored. And when I

hear men say, as I frequently do, that they should be glad to read, but cannot find time—when I hear mothers speak with deep feeling of maternal responsibilities, and mourn that they are debared, by the stern demands of toil, the aids of deliberate reading and calm thinking, in discharging the noblest and holiest duties of life, my heart is pained, and I cannot escape the conviction that something wrong is mingled with the present order of things. And when I see both sexes deeply and prematurely marked with the lines of excessive care, debasing their better natures with the grossness of earth—when, in all parts of our glorious Commonwealth, I see men, and women too, neglecting the Sabbath—absenting themselves from the House of Worship—because, as they *say*, they are prostrated by the toils of the week, my soul is grieved beyond expression. I tremble in view of the consequences they are accumulating to themselves, the injurious influence of their example on their offspring, and the disease they are engendering in the morals of the community.

The causes of this condition of things have been variously assigned. The evil is attributed to avarice—an excessive haste to be rich—a finical love of show—a passion for dress that ordinary labor cannot support—extravagant indulgence of artificial wants—envious emulation of the rich—ignoble competition in business—making wealth the only standard of worth—and the *selfishness* that either, or all of these causes combined, have nurtured in the human breast. But from whatever source the evil has sprung, the necessity of its reform is obvious. The best interests of our community demand it.

I am aware that it is often easier to point out an evil, than it is to suggest an effectual remedy. Fortunately, however, a specific is at hand—not, indeed, in the re-organization of Society, but in the universal application of Christian principles to society as it now exists. I perceive no occasion for finding fault with the social institutions of which God is the founder, though man may be justly censured for his abuse of them.—Nor has necessity arisen for their destruction, that the evils which sin and ignorance have forced into them, may be reached. If the temple is defiled, let it be purified, not razed to the

ground. If false notions and wrong practices exist in society, let them be met and removed by the correct views and right practices of Christianity. Practical Christianity, divested of mysticism and superstition, is the true remedy for all the ills of the social state. If men look into its pure ethics, they will learn that avarice is sin, and selfishness antagonism with God. They will learn that true living consists in subordinating the passions —moderating the desires—abjuring the servitude and idolatry of fashion—cultivating the social relations—and esteeming Mind of more worth than Matter, and Heaven more desirable than Earth. Let these truths be reduced to practice by both sexes, and justice will be done to the moral, physical and intellectual natures. Time will be so rightly divided, that labor, rest, recreation and intellectual culture will each occupy its due proportion, and a healthy equilibrium be maintained.

There is one view, gentlemen, in which your profession assumes an immense importance—greater, even, than that arising from the capacity of our soil to produce food for the whole world. I mean its ability to control the destiny of our country. Agriculture is essentially conservative. Its interests are so blended with all other productive interests of this Nation, that it can never encourage sudden and radical changes of policy, calculated to injure them. If the time ever was, it has gone by, when Agriculture can be severed from Manufactures and Commerce—the parent from the children—or be arrayed in opposition to them. It must, in the nature of things, if true to itself, sympathize with what is American in principle and policy.

There are three evils to which agriculture is exposed, the suppression or prevention of which is essential to its prosperity. I mean Intemperance, Slavery, and War. Humanity weeps over the degradation and crime, of which inebriation has been the prolific cause. Sir Matthew Hale, in speaking of twenty years judicial experience, says, that "if all the murders and manslaughters, burglaries, rapes, robberies, riots, tumults, and other great enormities, commited within that time, were divided into five parts, four of them would be found to have been the result of intemperance." The criminal calendar of our own country exhibits equally appalling results. And

then, the pecuniary tax intemperance has imposed on its unhappy subjects, who can estimate? What an accumulation of public and private woes does its history present! What a host of victims, from the learned professions, the workshop and the field, has it immolated! How many are the hopes it has crushed, and the fair prospects it has blighted! Who can number the farms it has dissipated, or describe the domestic and social misery it has created!

But amidst all that is heart-rending in the ravages of the intoxicating cup, multiplied causes exist, of gratitude to Him, through whose "loving-kindness," Abbott, Dane, Worcester, Wadsworth, Torrey, and a goodly company of kindred spirits, were raised up to stay the tide that threatened to overwhelm the Commonwealth with drunkenness, and to commence the regeneration of public sentiment and practice.* It is a gratify-

* In 1811, at a clerical Convention held in Salem, a Committee of eight was appointed, to consider what could be done to arrest the alarming progress of intemperance. This committee consisted of Rev. Samuel Worcester, D.D., Salem, Rev. Abiel Abbott, D.D., Beverly, Rev. B. Wadsworth, D.D., Danvers, Rev. Jedediah Morse, D.D., Charlestown, Jeremiah Evarts, Esq., and ——— Thurston, Esq., Boston, R. D. Mussey, M.D., and Joseph Torrey, M.D., Salem. The Committee, at their first meeting, did little more than agree to bring some thoughts, on paper, to an adjourned meeting. The second meeting was held at the house of Rev. Dr. Morse. Rev. Dr. Wadsworth wrote elaborately on the formidable nature of the malady. Dr. Torrey wrote the following remedial prescription:

1. Let each reformer set a wholesome example of abstinence, so that the proverb, "*physician, heal thyself,*" *may not apply to him.*
2. Let hospitality be shown in better ways, than by applying the bottle to our neighbor's mouth, endeavoring to render it as unfashionable to offer, as it has been to withhold, the liquid fires.
3. Furnish no spirit, but a better equivalent, to the laborers employed.
4. Let associations be instituted on the above principles, and lectures, addresses and discussions be encouraged, to enlighten the public mind.

Mr. Evarts recommended vigilant attention to the license laws. At the third meeting, held in the autumn of 1812, at the house of Dr. Torrey, in Salem, Messrs Abbott, Worcester, Morse and Evarts, were appointed a Committee to obtain names and form societies. A sub-committee, consisting of Messrs Worcester, Wadsworth and Torrey, was also appointed, to draft a constitution for the Massachusetts Temperance Society. In the winter of 1813, a meeting, by invitation of the Committee, was held in the hall of the Union Bank, in Boston, at which time the constitution was read, discussed, amended and adopted. The second annual address before the society, was delivered in 1815, by Rev. Dr. Abbott, and the fourth, in 1817, by Rev. Dr. Worcester. Hon. Nathan Dane, and Dr. Joshua Fisher, of Beverly, were members of the society, at its formation. The former succeeded Hon. Samuel Dexter, as its second President. Gratitude and duty prompts an "honorable mention" of those who were among the earliest to take an active part in "an enterprise which looked to the greatest good of the individual, and the truest happiness of the state."

ing fact, in the history of a Reform the most extraordinary and extensive ever witnessed in this union, that as early as 1827, your Society set a noble example to all public bodies, by discarding the use of ardent spirits and wine at its annual dinner. And not less pleasing is it to learn, as I do from a reliable source, that a large proportion of the farmers of this county have ceased to furnish an intoxicating beverage to their workmen, even in "haying time." They have found, by delightful experience, that by substituting other drinks for ardent spirits, more work is done and better executed, fewer tools are broken and lost, less profanity is heard, disputes are not so frequent, and the character of laborers is generally improved. But intemperance is still busy in its work of ruin. Fathers are mourning over their fallen sons, and wives are weeping over besotted husbands. Eternity alone can unfold the agony caused daily by this pestilence; and of woe visited upon man reckless of right, his will be the fullest measure, who tempts the penitent inebriate to swerve from his purpose of reform.

No class, perhaps, is capable of doing more at this time, to promote temperance, than farmers. In a pecuniary view, they have weighty reasons for giving their united influence to the cause. In a moral view, the claims upon them are of the most solemn and binding character. May they every where appreciate the opportunities that Providence has opened to them for blessing their age. And may the convictions of responsibility, enlist them as one man in this work of philanthropy and mercy.

I have not time, and this is not the occasion, for considering in detail, the physical, social and moral wrongs of slavery. I cannot stop to speak, as I should like, of its subversion of the most sacred relations—its paralysis on intelligence—its license of impurity—nor its malign influence on the councils of the nation. I may, however, and as an American citizen, I do, enter my individual, solemn protest against an institution which converts "a Person into a Thing, an object merely passive, without any attributes of Human Nature, and stamps him that character not acknowledged as a man"*—and which,

*Whewell's Elements of Morality.

in the language of Mr. Marshall, of Virginia, "is ruinous to the whites—retards improvement—roots out an industrious population—banishes the yeomanry of the country—deprives the spinner, the weaver, the smith, the shoemaker, the carpenter, of employment and support."* I but repeat the sentiment of the best minds in the North and South, when I pronounce Slavery a blighting reproach to our country. Scenes of recent occurrence, are proofs added to volumes before existing, of its utter repugnance to the spirit of our republican Institutions, and to the noble declaration of Jefferson, that all men are endowed by their Creator with the *inalienable rights* of "life, *liberty*, and the pursuit of happiness." Slavery is an evil to Southern agriculture, because it curses the soil with sterility. The experience of two hundred years in one of the principal slave States, confirms these statements.†

*Debate in the Virginia Legislature of 1831 and '32.

†The following corroborative paragraphs, are from a pamphlet published in Richmond, Va. in 1833, entitled "Review of the Slave Question, by a Virginian." It appeared originally in the American Quarterly Review, and is the calm testimony of a credible witness.

"It is the office of Agriculture as an art, not to impoverish, but to fertilize the soil and make it more useful than in its natural state. Such is the effect of every species of agriculture which can aspire to the name of an art. It is a truth that an *improving* system of agriculture cannot be carried on by slaves. The negligent, wasteful habits of slaves who are not interested in the estate, and the exacting cupidity of transient overseers who are interested in extorting from the earth the greatest amount of production, render all slave agriculture invariably exhausting. How many plantations worked by slaves are there in Virginia which are not perceptibly suffering the sure process of exhaustion? Perhaps not one, except a few on the water courses, composed of the alluvial soils which are virtually inexhaustible. The uncertainty of the profits of a crop generally deters the planters in Virginia from giving standing wages to their overseers—indeed, it has too often happened that the salary of the overseer has absorbed all the proceeds. Hence it is usual to give him, instead of salary, a share of the crop. The murderous effects of this on the fertility of the soil may well be conceived. An estate submitted to overseers entitled to a share of the crop, (who are changed of course, almost yearly) suffers a thousandfold more than would English farms put out on leases of one or two years to fresh lessees. Twenty-one years is thought too short a term there. It is a fact that no soil but the richest, and that in effect inexhaustible, can be profitably cultivated by slaves. In the Legislature of Virginia it was repeatedly said that her lands were poor, and for that reason none but slaves could be brought to work them well. On the contrary, poor lands and those of moderate fertility can never repay the expense of slave labor, or bear up under the vices of that slovenly system. In modern times, in most cases where slave labor prevails, it has been found in plantation states and colonies. There are many obvious reasons why, if profitable any where, it must only be there. Now, if this be the case, it would appear that slavery to be profitable is essentially incompatible with a dense population—at all

The degradation of white labor, is another evil that slavery inflicts on southern agriculture. A farmer who cannot afford to own a slave, and therefore holds his own plough, and handles his own hoe, rake and fork, is placed, by the common law of public opinion, in an inferior rank, from which, if he would rise, he must go where field labor is reputable. If he possesses the honorable ambition of a man, he seeks a new home in a free state, and his small farm is annexed to the plantation whose owner boasts his scores of bondmen. The tendency of this false standard of respectability is, to banish the "small farmers," and to accumulate landed property in a few hands—an effectual method of depreciating its value. But for this impediment to free labor, Kentucky, for example, (where are some of the best lands in the United States, and where farming may be pursued with the most desirable success,) would fast fill up with an enterprising agricultural population, and her prosperity keep pace with her sister confederates on the northern shore of the Ohio.

Slavery is an evil to Northern agriculture, because it wages war upon those pursuits with which farming is vitally connected. Independent of the sentiments of humanity and

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events, with a relatively dense population of freemen. But it may boldly be said that *Virginia possesses scarcely a single requisite to make a prosperous slave labor state. She has not the inexhaustible rich soils:* her earth originally yielded fair returns to hard labor judiciously directed, but all such soils, as she has learned by bitter experience, are fated, under the hands of slaves, to deterioration down to utter barrenness.

We state as the result of extensive inquiry, embracing the last fifteen years, that a very great proportion of the larger plantations, with from fifty to one hundred slaves, actually bring their proprietors in debt at the end of a short term of years, notwithstanding what would once in Virginia have been deemed very sheer economy; that much the larger part of the considerable landholders are content, if they barely meet their plantation expenses without a loss of capital; and that, of those who make any profit, it will in none but rare instances average more than one to one and a half per cent. on the capital invested. Labor of every species is disreputable, because performed mostly by slaves. If cultivated by free labor, the soil of Virginia is capable of sustaining a dense population, among whom labor would be honorable, and where "the busy hum of men" would tell that all were happy, and that all were free. Where slave labor prevails, it is scarcely practicable for free labor to coexist with it to any great extent. Freedom being itself regarded as a privilege in a nation that has slaves, there is a natural tendency to consider exemption from manual labor as the chief mark of elevation above the class of slaves."

patriotism, the farmers of the whole Union have an interest in seeing this blot wiped from our national escutcheon.

To War, the agriculturists of this country can never be indifferent. It is the direst calamity that can befal a nation—the most pestilential scourge to its morals and prosperity. "Peace," says General Scott, "is the first want of every civilized community." "Universal and permanent peace," says Ex-President J. Q. Adams, "belongs to the laws of nature and of nature's God—to the genius and vital spirit of Christianity—to the liberty, justice and prosperity of nations." Under no circumstances can war benefit the farmer. If, for a time, it may create an extraordinary demand for his products, and secure for them an exorbitant price, the prostration of business that is sure to follow its close, will make this process of accumulating wealth a fearful failure. Peace is the friend of Production—War its enemy. The safety of property, a steady prosperity, as well as the higher motives of christianity, should influence farmers to cherish and diffuse a pacific spirit, and to maintain an inflexible resistance of all measures that will needlessly involve their country in a conflict of blood.

The four millions of your brotherhood in the United States, gentlemen, are endowed with a mighty moral power, and upon them a momentous responsibility rests. Let them realize and meet it faithfully, and they will become the conservators of Freedom and Perpetual Peace. Inspiration itself, points to them, as among the chief almoners of these blessings. Their implements of husbandry are to supplant "the gleaming steel, and the flash and thunder of artillery." Indeed, let them now "set their faces as flint," against a method of settling National disputes, with which, the conqueror of Napoleon has said, "men who have *nice* notions about religion have no business," and all the forests of Oregon and Texas will be insufficient to kindle the fire of war.*

* War is an enormously expensive method of settling national disputes. A large proportion of the burden is borne by farmers. In seven wars, of 65 years duration, Great Britain expended $8,982,120,000. France, Austria, and Great Brirain, from 1793 to 1815, expended $7,330,000,000. The sacrifice of life by wars, beginning with the Jewish and closing with Napoleon's, has been estimated at 683,000,000 human beings! Dr. Dick estimates the number of those who have perished directly and indirectly by war,

I have thus, gentlemen touched upon various topics connected with agriculture and agricultural life, omitting many of perhaps equal importance, which it were impossible to consider without taxing your patience to an unreasonable extent. I have not aimed so much to unfold new truths, as to deepen in your minds truths none the less vital or valuable because old. If in this I have remotely succeeded, my ambition will be satisfied.

As I close, a thought of painful interest presses upon me. One year ago this day, I participated in the pleasures of your annual exhibition. With a large concourse, I came into this house, and united in the solemnities of the occasion. As I look around upon this numerous audience, I recognize many who were then here. But one manly form, one familiar countenance, I miss. He whose presence shed a cheerful influence upon the meetings of your society, and who that day presided, with characteristic dignity, over your deliberations, has gone from your midst, to return no more. Leverett Saltonstall is numbered with the dead, and we, by a dispensation that has saddened many hearts, are taught in solemn emphasis, that "the most active and expanded intellect, and the most eminent virtue, have as little power against the invasion of disease and the law of dissolution, as the feeblest spark of mind and the faintest ray of moral goodness." It is not needful that I pronounce his eulogy. This has been done by the Press, the Pulpit, the Bar, and at a recent meeting of the Trustees of your Society, by one of your own members,* with an eloquence, truth and beauty, worthy its honored subject. Yet the occa-

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at *fourteen thousand millions*, or about *one-tenth* of the human race. Edmund Burke placed the number at THIRTY-FIVE THOUSAND MILLIONS. Taking the estimate of Dr. Dick, and assuming the average quantity of blood in a common sized person, the veins of those fourteen thousand millions would fill a circular lake of more than *seventeen miles in circumference—ten feet deep*; in which all the navies of the world might float! Supposing these slaughtered millions to average, each 4 feet in length, if placed in a row, they would reach nearly 442 times around the earth, and four times around the sun. Supposing the average 130 lbs. each, then they would form a globe of human flesh of nearly a mile in diameter, weighing 1,820,000,000,000 lbs., fourteen times more than all the human beings now living on the globe.—*Advocate of Peace, p.* 98.

* Hon. Daniel P. King.

sion, as well as my own deep feeling, prompts me to offer a brief tribute to the memory of one, endeared almost beyond any now living, to the citizens of his native county. I knew Mr. Saltonstall well. I have seen him in public and in private, under circumstances most favorable to the study of his character. For honor in his profession, fidelity to his friends, conscientiousness in the discharge of public and private trusts, and for qualities that charm the intellect and win the heart, he was excelled by no man I ever knew. Acting from the loftiest principles, he made his professional opportunities subservient to the noblest ends. Often and successfully was his influence employed to prevent litigation, and many now live to bless his disinterestedness. To him, in its complete sense, applied the beatitude, "blessed are the peace makers;" and his repeated calls to public service, are the best proofs of the confidence of his fellow citizens in his ability and integrity as a statesman. He was thoroughly republican in his sympathies and preferences. The spirit of the "Old Charter," brought to this country by his noble ancestor and the patriot Winthrop, securing to the colonists of Massachusetts Bay the rights and powers of self-government, mingled with every thought, and influenced every act for his country.

Mr. Saltonstall was warmly interested in the objects of this society. He spoke of agriculture as "the basis of all other interests, and essential not only to the comfort but to the very existence of society." And he honored it, not only for its peaceful spirit, but for its purifying and elevating influence on the heart and mind. "Who that has a heart," he exclaimed, with the fervid eloquence that imparted a charm to all his public addresses,—"who that has a heart in his bosom, can look abroad on our hills, crowned with trees,—our pastures covered with flocks, on our valleys and plains, laden with 'food for man and beast,' and not think and feel how good God is?—Who can behold the meadows ornamented with flowers, and reflect that the wide spread prairies, the solitary wilderness, nay, that the whole earth is strewn with an infinite variety of those most lovely objects arrayed with more beauty than was Solomon in all his glory, and his heart not be softened into a

sense of that boundless love which has made such provision for our enjoyment, and for the gratification of a pure and refined taste? Who can see the sun rising in his glory, as all good farmers are wont to do,—or can behold him sinking in his gorgeous pavilion—who can look upon the magnificent heavens, which only can be seen in the country, and not feel awed into reverence before Him who made them all, and exclaim, as did the shepherd of Israel,—'When I consider thy heavens, the work of thy hand,—the moon and stars which thou hast ordained, what is man that thou art mindful of him, or the son of man, that thou visitest him!' Who can listen to the 'charm of the earliest birds,' as they dart from their nests and mount to the topmost sprays at dawn, and not join their notes of grateful praise to him who notices the sparrow's fall, and whose providential care extends to all his works?—And where shall we learn our dependence on divine Providence so effectually, as in an occupation where his visible presence seems manifest, in his imparting the influences of the sun and of showers in such succession as to crown with success the labors of our hands—who withholds the needful blessings only so long as is necessary to make us feel, that 'it is God who giveth the increase?'"*

It was this devout spirit, which makes the works of God the medium of communion with him, that imparted the brightest lustre to the character of Mr. Saltonstall. The religious sentiment was deeply seated in his soul. His reverence for God, Christ, the Holy Scriptures, and the institutions of Christianity, was of the profoundest kind. He was, as his pastor has testified, "a good parishioner, and one of the best of good hearers—a whole-hearted, devoted, sincere, pre-eminent christian. He was a christian everywhere, and in all the relations of life." He made, indeed, no display of his religion; his piety was too humble to seek notoriety; but the closing scene of his life, which for moral sublimity has scarcely had a parallel since the death of Addison, was the truest exponent of the christian's *walk*, as it was the noblest vindication of the christian's *faith*.

* Address at Andover, 1843.

In the death of Mr. Saltonstall, the Essex Agricultural Society mourns the bereavement of one of its earliest and most influential members—the Legal Profession, one of its brightest ornaments—the Commonwealth and Country, an enlightened legislator—the Church, a valued member—the Poor, a sympathising, open-handed friend—and the family circle, a devoted husband and father.

> "O 'tis well
> With him. But who knows what the coming hour
> Veiled in thick darkness, brings for us."

May the mantle of his virtues fall on each member of the Society over which he so usefully presided, and his example lead them to look upward with hope. And while they sorrow for the breach death has made, may they be consoled with the promise, that "they that sow in tears shall reap in joy," and that "he that goeth forth and weepeth, bearing precious seed, shall doubtless come again with rejoicing, bringing his sheaves with him."

HON. MR. SALTONSTALL.

At a meeting of the Board of Trustees of the Essex Agricultural Society, held at Ipswich, on Wednesday, June 25th. the Hon. Daniel P. King introduced the subject of the death of Hon. Leverett Saltonstall, with the following remarks, and moved the Resolutions subjoined, which were unanimously adopted :

Mr. President.—Since the last meeting of the Trustees of the Essex Agricultural Society, we have sustained a great and irreparable loss in the lamented decease of our worthy President, the Hon. Leverett Saltonstall. Other gentlemen, connected with him in the various associations for the advancement of good learning, morality and religion, have rendered appropriate tributes to his memory. It is proper that we too should notice this melancholy event, by the adoption of resolutions expressive of our deep sorrow for his death, of our gratitude for his services, and of our heartfelt sympathy with his bereaved family.

Mr. Saltonstall was not a practical farmer, but he was active in the formation of our society, was one of its earliest members, and was always warmly engaged in its success. He felt, in his own words, "a deep sense of the importance of the agricultural interests above all others as a source of individual happiness, and of national prosperity." It is not strange that, with

his high character and endowments, the members of our Society should have unanimously elected him their President, and that in their undiminished confidence, he should have been three times re-elected. The prompt and able discharge of the duties of his office, and his devotion to our interests, have shown the wisdom of their choice. The ease and dignity of his conduct in the chair, the uniform cheerfulness and courtesy of his deportment, and his well-timed and excellent addresses will be long remembered. As farmers we sincerely lament the death of one so able and well-disposed to advance the honor and usefulness of our association. Timothy Pickering was our first President, Leverett Saltonstall the last; Pickering and Saltonstall, worthy names, worthily associated: no encomium of ours can add one green leaf to their ever fresh chaplet; their deeds, their talents, and their virtues, have secured for them an enduring fame.

Mr. Saltonstall's life was full of active benevolence and usefulness. At the bar, he was an ornament to his profession, and an illustrious example of what a lawyer should be, the defender of the oppressed, the guide of the ignorant, and the advocate of justice and good order. In the halls of our state legislature, and in the councils of the nation, he was distinguished for his diligence, his honesty, and his independence. With no desire to mislead or corrupt others, he was too intelligent and too virtuous, to be himself misled or corrupted. With a prudent cautiousness, and wise forecast, he looked to the end, and judged of measures by their probable results and consequences; he might sometimes ask, is it expedient? he always diligently inquired, is it right? He loved the approbation of others, but he loved more the approbation of his own judgment and conscience; he did not eagerly covet the flitting breath of popular applause, for he knew how often the full bloom of its promise withers and cheats; he chose rather to wait for the ripe fruit,

and he gathered a rich and abundant harvest in the esteem and love of the wise and good. Many have admired the fluent and silver-toned eloquence of his tongue, more have admired the noble generosity and warmth of his heart. Intercourse with a sordid world did not make him selfish; in the bustle of political strife, and in the noisy turmoil of party conflict he never lost his equanimity, or his self-respect. Envy and jealousy found no resting place in his pure bosom. His opponents were never his enemies; if they would not adopt his opinions, they could not withhold their respect and esteem for the man. The broad mantle of his charity, so seldom needed by himself, he was ever ready to throw over the errors and faults of others. He loved good men of every party and sect, and did homage to virtue and sincerity, wherever he found their shrine. In his own loved Commonwealth and in distant States, he had many warmly attached friends, many lovers of liberty and their country who esteemed him worthy of higher honors, and who will lament his death as a public loss.

But this is not the place and I have not the ability to do full justice to his memory. Descended from a puritan family, Mr. Saltonstall made an honored name, more honorable; of New England stock, he was worthy to represent the stern virtues of New England; they were his pride and his only boast. Truth, honor, and virtue, he worshipped always, not because of the sure and adequate reward which they pay, nor because it is fashionable occasionally to make a pilgrimage to their altars, but because for their own sakes, he loved truth, and honor, and virtue. The beautiful language applied by President Kirkland to Fisher Ames, is no less true and beautiful when applied to Mr. Saltonstall; "happily he did not need the smart of guilt to make him virtuous, nor the regret of folly to make him wise." Liberty, religion, and holiness he loved, and his reverence for God was habitual and controlling.

The end of the good man is peace. His amiable and excellent qualities could not avert the shaft of the destroyer; he is removed from this stage of his usefulness and enjoyments.—We shall no more here be cheered by his presence, animated by his eloquence, or counselled by his wisdom; we shall no more meet him in this world, but if faithful to our trusts and duties, we shall meet him in happier regions, where are no agonies of severed friendship, and where all sorrow will forever cease.

Mr. King then proposed the following resolutions:

Resolved, That we are deeply sensible of the loss which our Society has sustained in the lamented death of our late worthy President, the Hon. Leverett Saltonstall.

Resolved, That we entertain a high sense of respect for his character and talents, and of gratitude for his services.

Resolved, That we tender to his bereaved family, the expression of our sincere condolence.

The resolutions were unanimously adopted, and with the remarks of Mr. King, were ordered to be placed on the records of the Society, and to be published.

REPORTS, &c.

ON PLOUGHING WITH DOUBLE TEAMS.

The Committee on Ploughing with Double Teams, consisting of Messrs. Dodge, of Wenham, Brown, of Ipswich, Carr, of West Newbury, Osborn, of Saugus, and Sutton, of Salem, REPORT:

That there were thirteen competitors, to whom lots of one quarter of an acre each were assigned by lot, to be ploughed not less than seven inches deep, viz:

No. 1.	Aaron Kinsman,	of Ipswich,
" 2.	Jedediah H. Barker,	of Andover,
" 3.	S. B. Swan,	of Danvers,
" 4.	Amos Poor,	of West Newbury,
" 5.	Allen W. Dodge,	of Hamilton,
" 6.	Nehemiah Dodge,	of Essex,
" 7.	Barzillai Gould,	of Middleton,
" 8.	Joseph Goodrich,	of West Newbury,
" 9.	Micajah Treadwell,	of Ipswich,
" 10.	Benjamin Poore,	of West Newbury,
" 11.	Benjamin Holt,	of Danvers,
" 12.	George Hodgedon,	of Ipswich,
" 13.	Thomas Low,	of Ipswich.

The several teams were promptly on the ground, at the time appointed, and started precisely at 10 o'clock. They all finished their work before 11 o'clock. The time varied from thirty-five to forty-four minutes; but as all of them did it in a sufficiently short time, we do not think it necessary to state the

time of each precisely. Nearly all the ploughs used were manufactured by Ruggles, Nourse & Mason, and were of their most approved patterns. The work was so well done that the Committee would have awarded premiums to all, had it been allowed by the Society. We unanimously recommend that the premiums be awarded as follows, viz:

To Aaron Kinsman, of Ipswich,	1st premium,		$10 00
" Joseph Goodrich, of W. Newbury,	2d	"	8 00
" Benjamin Poore, of W. Newbury,	3d	"	6 00
" Allen W. Dodge, of Hamilton,	4th	"	4 00

and to S. B. Swan, of Danvers, and Thomas Low, of Ipswich, a gratuity of Washington's Letters on Agriculture, one copy each.

The Committee were highly gratified to find so many competitors in this most interesting trial of skill. Notwithstanding these trials have been so often repeated, they are still received with increasing interest, and every succeeding year brings to notice some valuable improvements. The Committee are strongly impressed with the superior value of those ploughs which lay the furrow slice flat and even, especially in the cultivation of grass. Care should be taken by the ploughman that he does not cut a wider furrow than the plough was intended to cut, and then it will be entirely smooth in appearance, and we know of none superior for this purpose to those manufactured by Ruggles, Nourse & Mason.

For the Committee,
W. SUTTON.

Ipswich, Sept. 24th, 1845.

WITH SINGLE TEAMS.

The Committee on Ploughing with Single Teams (present Messrs. Howes, of Salem, Northend, of Byfield, Follansbee, of West Newbury, and Pilsbury, of Newbury,) have attended to that duty, and REPORT:

That seven teams were entered for the premiums offered on this subject. One quarter of an acre of land, two rods by twen-

ty, was allotted to each. The field was adjacent to that ploughed by the double teams, and similar in character,—tough swarded grass land, that had been pastured a number of years,—tolerably free of stones, rather hard to be turned. The lots were assigned and the work done as follows, viz:

No. 1. To George Daniels, of Middleton; plough made by Prouty & Co. No. 26. The team was withdrawn after turning a few furrows, the cattle not being equal to the performance of the work.

No. 2. To Joseph C. Putnam, of Danvers; plough made by Ruggles & Co., Eagle, No. 2. Work was done by 30 furrows, in 47 minutes. The furrow slice was cut straight and even, and laid perfectly flat and true. The cattle worked apparently without fatigue.

No. 3. To Randall Andrews, of Ipswich; plough of same description as the last. Work was done by 28 furrows, in 60 minutes. It was very well done.

No. 4. To Jonathan Berry, jr. of Middleton; plough made by Ruggles & Co., No. 25. Work was done by 26 furrows, in 60 minutes. The cattle were young, and the ploughman was young. The plough appeared to be rather large for the team. The furrow slice was well laid, and the work was finished in a satisfactory manner.

No. 5. To Jacob Brown, of Ipswich; plough made by Ruggles & Co., Sward C. Work was done by 28 furrows, in 65 minutes.

No. 6. To James Putnam, of Danvers; team managed by Moses H. Pettengill; plough made by Ruggles & Co., No. 25. Work done by 28 furrows, in 47 minutes. Mr. Pettengill showed himself on this, as on former occasions, to be master of his business.

No. 7. To Charles Foster, of Andover; plough made by Ruggles & Co., Sward C. Work was done by 28 furrows, in 50 minutes. It only differed from the other best work by the furrow slice being set on edge, or made to lap a little. In the opinion of some of the committee, for some purposes, this mode of laying the furrow would be preferred. The team was well disciplined, and the work well done.

The committee were entirely satisfied with the work as performed by five of the teams. Considering the hardness of the work, they have rarely known it to be better done. After a careful comparison of the several lots, taking into view all the circumstances, and the condition in which the work was finished, they agreed to recommend that the premiums be awarded as follows:

To Joseph C. Putnam, No. 2, 1st premium,		$8 00
" James Putnam,	" 6, 2d "	6 00
" Jona. Berry, jr.	" 4, 3d "	4 00
" Charles Foster,	" 7, 4th "	2 00

From these experiments, we learn that an acre of land may be ploughed by a single pair of cattle and one man in four hours, and probably nearly two acres in a single day. When we take into view the expense of operating a team of this description, compared with those usually employed in this business, it will be quite well for our farmers to consider whether most of their work cannot be done with one pair of cattle, and if two pair are to be used, would it not be better to cut the first furrow of less depth, and apply the power of the second pair to a SUBSOIL plough, to follow directly after. If we do not entirely mistake the signs of the times, our modes of preparing land for culture will ere long be essentially modified by the use of the *sub-soil plough*. In the County of Worcester, where the management of land and teams is understood as well as in any part of the Commonwealth, the premiums are limited to *one pair of cattle without a driver*.

For the Committee,

Ipswich, Sept. 24, 1845. J. W. PROCTOR.

WITH HORSE TEAMS.

The Committee on Ploughing with Horse Teams, ask leave to REPORT:

That there were eight horse teams entered for premiums; viz: One by David S. Wilkins, of Danvers.

" Amos P. Swinerton, "

One by John C. Putnam, of Danvers.
" Jacob Brown, of Ipswich,
" John Dore, "
" Seth Holden, of Salem.
" Philip Storm, of Marblehead.
" Joseph Woodman, of Haverhill.

Six only appeared on the field. Each team struck out its own land, containing the usual quantity, and ploughed as follows; viz:

John Dore, of Ipswich, ploughed	34	furrows,	in	35	minutes.
Philip Storm, of Marblehead, "	30	"		37	"
A. P. Swinerton, of Danvers, "	30	"		46	"
Jos. Woodman, of Haverhill, "	34	"		53	"
Seth Holden, of Salem, "	28	"		50	"
John C. Putnam's team, "	37	"		65	"

Mr. Pettingill, ploughman.

All the ploughs used were of Ruggles, Nourse & Mason's make.

Your Committee, after a careful examination of the ploughing and the discipline of the horses, would have cheerfully recommended premiums to be given to all the competitors, but as only three were at their disposal, no more than this number could with propriety be awarded. Your Committee award the premiums as follows, viz:

To John Dore of Ipswich, 1st premium of	$8 00
" Seth Holden, of Salem, 2d "	6 00
" Philip Storm, of Marblehead, 3d "	4 00

All which is respectfully submitted.

SOLOMON LOWE,
RUFUS SLOCUM,
GIDEON R. LUCY,
EBENEZER HARRIS.

Ipswich, Sept. 24th, 1845.

ON WORKING OXEN.

The Committee on Working Oxen, REPORT:—

Twenty entries were made by the following persons, viz:

Barzillai Gould, of Middleton,		5	years old,
George Daniels,	"	6	"
Jonathan Berry, jr.,	"	5	"
S. B. Swan, of Danvers,		6	"
James Putnam,	" did not appear.		
Joseph C. Putnam,	"	7	"
Moses Pettingill, Topsfield,		7	"
Ezra Dodge, of Wenham,		5	"
Allen W. Dodge, of Hamilton,		5	"
Jedediah H. Barker, Andover,		5	"
Charles Foster,	"	6	"
William Williams, Rowley,		7	"
Randall Andrews, Ipswich,		6	"
Levi Lord,	"	7	"
Manasseh Brown,	"	6	"
Aaron Kinsman,	"		
George Hodgedon,	"	6	"
Micajah Treadwell,	"	6	"
Thomas Low,	"	6	"
Joseph Low, Essex,		7	"

The Committee consider that there are more difficulties in the way of deciding correctly upon the merits of Working Oxen, than in any other department of the exhibition.

The Committee on ploughing, can examine the work done over and again.

On the Dairy, they can bring specimens in immediate contact.

The important points in Animals can be placed side by side.

So with Domestic Manufactures, with Fruits and Flowers.

Not so with Working Oxen. Each pair goes its round, and when twenty teams have followed in succession, the decision must be made from the recollection of impressions made on the Committee's minds at the time of drawing. If differences

of impressions exist as to certain trials, *recollection* and not actual inspection must decide the issue.

The ages to be brought under the notice of the Committee, range from four to seven years; and in making up their award they are required to take into view the size, power and training of the teams.

The power and training with a load of any given weight, are matters which must be left to judgment and fancy. But size can be brought to a surer standard. And the Committee would here recommend that in future all cattle entered as Working Oxen should be weighed on the day of trial.

As to age, cattle frequently pass from one to another, as being younger than they really are, and as many of the Working Oxen in this County came by purchase to their present owners, their true age may not be well defined. And thus cattle may be entered as seven years old, without any certainty that they are not more.

In order that the rule should effectually bar all entries of cattle over seven years old, some evidence should be required more than simply, they are called no more.

The Committee will name a few pair of cattle they consider prominent among those to which no premium was awarded.

A pair belonging to Barzillai Gould, of Middleton—the first pair entered and the last pair which drawed. Small red cattle, reported five years old. They drawed the last load up the hill as well as any pair, considering their size, and were well matched as to temper, which could be said of but few pair exhibited.

A pair belonging to Jedediah H. Barker, of Andover. Age five years ten months. One of them, the near one, a fine ox, surpassed by a very few, if by more than one.

A pair belonging to Randall Andrews, of Ipswich, reported six years old. Not fancy cattle, but worked finely.

A pair belonging to Manasseh Brown, of Ipswich, a pair of twins, reported six years old, fine red cattle, said to be handy both ways: they worked in a short yoke, and drawed well. The near ox crowded, it might be he was foot sore as they

were not shod, it may be he would work fairer on the off side.

A pair owned by Allen W. Dodge, of Hamilton, five years old. The near ox with proper training and in a suitable yoke, may hereafter do as well as the best.

A pair owned by Ezra Dodge, of Wenham, reported five years old, red cattle of medium size and appeared well trained for cattle of that age.

William Williams, of Rowley, entered a pair of oxen seven years old, large cattle. The near one seemed disposed to stop when he pleased, rather than when his driver wished to have him.

The Committee award to Jonathan Berry, jr., of Middleton, the first premium of ten dollars, for his speckled face cattle, five years old. They were large of the age, well formed, not full in flesh, well matched as to strength and temper, and well trained for cattle of that age.

They award to S. B. Swan, of Danvers, the second premium of seven dollars, for his red oxen, six years old. They worked well. The near ox was by the Committee considered the best working ox exhibited this day.

They awarded to Josiah Low, of Essex, the third premium of five dollars, for his red oxen, reported seven years old. They were probably the largest and strongest pair of cattle among the whole entered—still the Committee did not think they worked as even and true as some others.

We can say in making up the above award, we endeavored to refresh our recollections, as to the defects and good qualities of every pair of cattle brought under our notice, and the foregoing is the result of our observations at the time of drawing—and not from any knowledge how the several pairs of cattle might work when not surrounded by a crowd of spectators.

In behalf of the Committee.

MOSES NEWELL.

Ipswich, Sept. 24, 1845.

ON STEERS.

The Committee on Steers would respectfully Report:

That seven pair were entered for premium; six pair were considered, by the Committee, worthy of premiums. One pair, offered by William H. Story, of Essex, although a very promising pair of three years old steers, did not, in the opinion of the Committee, come within their province, there being no person present at the pens to give any account of the steers, and the steers themselves having the marks of drove cattle upon them.

The Committee, unanimously, recommend the following premiums, viz:

To David S. Caldwell, of Newbury, for his three years old steers, first premium, 7 00

George Hodgedon, of Ipswich, three years old steers, second premium, 5 00

William Williams, of Rowley, two years old steers, first premium, 6 00

Jedediah H. Barker, of Andover, two years old steers, second premium, 4 00

Jedediah H. Barker, of Andover, one year old steer, first premium, 4 00

Ammi Smith, of Ipswich, one year old steer, second premium, 2 00

Respectfully submitted,

R. A. MERRIAM,
ROBERT KIMBALL,
JOHN WHITREDGE,
WILLIAM FOSTER.

Ipswich, Sept. 24th, 1845.

ON BULLS.

The Committee on Bulls, REPORT:

That nine animals of this class were entered for premium, viz:

One by George Dane, of Hamilton, half Durham, two and a half years old.

Two by Isaiah Rogers, of Ipswich, one Ayrshire, and one Durham, each four years old.

One by John Dole, of Rowley, half Durham, one year and five months old.

One by James D. Herrick, of Methuen, of the Ayrshire and native breed, two years and three months old.

One by Manasseh Brown, of Ipswich, two and a half years old.

One by Jesse Sheldon, of Beverly, two years old.

One by Adam Nesmith, of Newbury, and one by Benjamin Moore, of Hamilton.

A fine Bull calf, five and a half months old, was presented by Nathaniel L. Ordway, of Newbury, weighing 575 lbs.

The Committee have directed me to report the

1st premium of $8 00, to John Dole, of Rowley,
2d " of 6 00, to James D. Herrick, of Methuen,
3d " of 4 00, to Jesse Sheldon, of Beverly.

They recommend as a gratuity to Nathaniel L. Ordway for his Bull calf, a copy of Washington's letters on agriculture.

J. NEWHALL, Chairman.

Ipswich, Sept. 24th, 1845.

ON FAT CATTLE.

The Committee on Fat Cattle, REPORT:

That there were four entries for premium on stock of this description. One pair by Tristram Brown, of Ipswich, with a statement describing their treatment as to labor and keeping, for the two last years, with their present live weight. They

are now in good condition for labor. What their condition was two years ago, or how much they have increased in weight during that time, we did not ascertain; as at the time of examination no one was in attendance to give any information on those points, and the written statement does not furnish it.

One ox, by William Williams, of Rowley. A statement accompanying the entry describes the manner of feeding, &c., for three years. This ox like the last pair, was in good working order, and was entered with his mate for working oxen.

One pair by Josiah Low, Essex. The same pair were also entered as working cattle. No statement in writing or otherwise came to the Committee, of the amount of labor they had performed or how they had been fed. They were large cattle and in the opinion of the Committee should be improved in flesh before they are slaughtered.

One pair by Philip K. Rogers, of Byfield. No statement in writing was put in by the claimant; but we ascertained from him that he purchased the cattle about two months since for slaughter, and the weather being warm, he had kept them to this time.

They had run in an old pasture and had been fed once a day with barn grass, cut daily. They were now in about the same condition as when he purchased them.

The Committee consider them as good grass fed cattle for a dry season; and if the rules of the society permit of premiums being awarded to the owners of cattle purchased as above stated, we would award for the red ox the second premium of eight dollars.

In behlf of the Committee.

MOSES NEWELL.

Ipswich, Sept. 24, 1845.

TRISTRAM BROWN'S STATEMENT.

To the Committee on Fat Cattle:

GENTLEMEN,—I present for premium my yoke of fat oxen, seven years old, which have done the work on my farm of one hundred

and ninety acres, for the last two years. They had nothing but salt hay last Winter, and ran in a common pasture the last Summer. In the Spring, during ploughing, they had English hay and stalks, and have not taken a bushel of corn for twelve months, to my knowledge. They weigh now three thousand pounds, alive.

TRISTRAM BROWN.

Ipswich, Sept. 20, 1845.

WILLIAM WILLIAMS'S STATEMENT.

To the Committee on Fat Cattle :

GENTLEMEN,—I present for a premium, one fat ox, seven years old, which, with his mate, has done the work on the farm of one hundred and ten acres for three years past, on ordinary keeping. They had nothing but salt hay till the twentieth of April last ; then they had English hay morning and noon, and salt hay at night. They have never had any grain or roots of any kind, and nothing but a dry pasture this Summer.

WILLIAM WILLIAMS.

Rowley, Sept. 23, 1845.

ON COWS AND HEIFERS.

The Committee on Milch Cows and Heifers, REPORT :

They recommend that the 1st premium, of ten dollars and Coleman's Agricultural Report, be awarded to Henry Creesy, of Salem, for the best cow, six years old.

2d premium, of six dollars, to Warren Averill, of Ipswich, for second best cow, seven years old.

3d premium, of four dollars, to William Williams, of Rowley, for third best cow, seven years old.

Only five cows were entered for premium. Although all that were entered were of the native breed, they were excellent cows ; and taking into view the small expense of their keeping, must have produced a large net profit.

No heifers that have been in milk were entered. Robert Kimball, of Ipswich, presented a noble heifer calf, from a native cow, and sired by the Ayrshire bull of George W. Heard, Esq., kept in Ipswich. The Committee having no authority to award a premium, would only state, that it was a very fine calf, of extraordinary size, and they recommend that a gratuity be given Mr. Kimball of a copy of Washington's Letters on Agriculture.

Statements of the manner of keeping and quantities of milk and butter each produced, accompany this report.

For the Committee,

T. CUTLER.

Ipswich, Sept. 24th, 1845.

HENRY CREESY'S STATEMENT.

To the Committee on Cows and Heifers:

GENTLEMEN,—The cow which I offer for exhibition and premium, is six years old. She calved the 21st of May, and has given milk as follows:

From	May 21st to June 21st,	1,469 lbs. 4 oz.
"	June 21st to July 21st,	1,264 lbs.
"	July 21st to August 21st,	1,127 lbs. 8 oz.
"	August 21st to September 21st,	956 lbs. 8 oz.
	Total,	4,817 lbs. 4 oz.

We sell most of the milk, but in order to ascertain the quality of her milk, we have made butter from it, and find that it takes nineteen pounds of milk to one pound of butter. Her keeping has been good grass feed, with the exception of seven weeks, when she had two quarts of shorts per day. The said cow was raised by John Bartlett, of Marblehead, and has been owned by me two years and six months.

HENRY CREESY.

Salem, September 24th, 1845.

The above statement is correct.

CHARLES CREESY.

WARREN AVERILL'S STATEMENT.

To the Committee on Cows and Heifers :

GENTLEMEN,—I offer for your inspection my cow Flora, of native breed, six years old. The said cow calved on the 21st of last April. The calf was kept to her until the 13th day of May. With what milk the calf left, and all after taking the calf from her until the 20th of May, we made 20 lbs. 3 oz. of butter. Beginning at the 20th of May, we kept an account of the milk by weight, morning and night, for the four months following, which is 4,375 lbs. Butter from said milk, 211 lbs. 2 ounces. From the 20th of May to the last day of June, inclusive, 84 lbs. 2 ounces. In July, 52 lbs. In August 43 lbs. Twenty days in September, 32 lbs. 2 ounces. Said cow would have risen 35 lbs. in September, had she not met with an accident by getting one of her teats jammed on the 14th, in consequence of which we did not use the milk from that quarter of the bag for butter. The first fourteen days in September she made 24 lbs. From the 20th of May to the last day of June, she gave 1,597 lbs. of milk ; in July, 1,115 lbs. ; August, 987 lbs. ; twenty days in September, 676 lbs. Average through the four months per day, 35 lbs. 105-122. To July, 39 lbs. 37-40 ; July 36 lbs. ; August 32 lbs. ; September 33 16-20. Average on the butter to July, 19 lbs. In July 21 23-52 ; August, 22 41-43 ; Sept. 21 lbs. 4-32. Through the season, four months, 20 lbs. 155-211.

Manner of keeping said cow. After she calved, I commenced giving her two quarts of meal per day, until the last day of May. The 20th day of May, I put her to pasture by herself. Her pasture was good through June ; the first week in July it failed, so I took her out and put her in an old pasture with other cows for three weeks, to let my pasture grow. I then put her back again in my pasture and kept her until the 24th day of August, when I put her with another cow in new feed. I commenced giving her, the 30th of August, one quart of Indian meal and one quart of rye meal every night. She had no meal, roots or any thing, only what the pasture afforded, from the first day of June until the thirtieth day of August.

WARREN AVERILL.

Ipswich, September 23, 1845.

We, the undersigned, certify that the foregoing statement is true.

ELIZABETH J. AVERILL,
ELIZABETH AVERILL,
ADAH KNOX.

WILLIAM WILLIAMS'S STATEMENT.

To the Committee on Cows and Heifers:

GENTLEMEN,—The cow offered for a premium is seven years old and of native breed. She calved, Feb. 6, 1845, the calf sucked till he was six weeks and three days old and then sold to a butcher for ten dollars. During these six weeks I sold fifty-two quarts of milk from her and made seven pounds and a half of butter. The calf had nothing but what he got from the cow. She gave from the time the calf was taken from her till the first of August, from fourteen to fifteen quarts per day, which was a few days over four months. She gives now eight quarts per day. She had nothing but salt hay till she calved, then she had for two months, one foddering of English hay at noon and half of a bushel of carrots per day. After the two months she did not have the carrots, but had one foddering of English hay at noon and salt hay night and morning till pasture time. She has had nothing but what she has got in the pasture since, and that is very short as it has been so dry. The first two weeks after she calved, she gave ten quarts of milk per day more than the calf could suck.

P. S. She made nine pounds of butter per week till pasture time, then the milk was put with the rest of my cows.

WILLIAM WILLIAMS.

Rowley, Sept. 23d, 1845.

ON THE DAIRY.

The Committee on the Dairy, REPORT:

That at no former Show has so much and so good butter been exhibited. The season has not been favorable for making large quantities, but the samples offered were in fine order, were of excellent taste and color, and very free from butter milk.

Mr. Lane's September butter was in tin boxes, so constructed as to contain pound lumps in each of the apartments, with a reservoir in the centre for ice, which keeps the butter cool and hard in its passage to market in the hottest weather. This appears to be an improvement.

The Committee consider the quantity made, as well as the quality: for this they must depend upon the statements of the competitors, some of which were exceedingly vague and indefinite. For example—

"27 lbs, Butter made by the daughter of Mr. —— ——, of ——, from nine cows in five days in common pasture feed."

The butter which accompanied this very brief statement was of excellent quality; some of the samples, which certainly deserved better treatment, had no statement of any kind.

The Committee regret that they have not a premium or gratuity to give to the several producers of so much excellent butter, but they have their reward in the good prices such butter always commands when it is brought fairly into competition with that of an ordinary quality. Nineteen samples of September butter and seven of June, were exhibited. It is recommended that the statements of the successful competitors be published, and that the premiums be awarded as follows:

For June Butter.

To George W. Dodge, Wenham, first premium, ten dollars and Coleman's Report of European Agriculture.

To Benjamin T. Lane, Danvers, second premium, eight dollars.

To Allen W. Dodge, Hamilton, third premium, six dollars.

For the best produce of September butter, quantity and quality considered:

To Warren Averill, Ipswich, first premium, ten dollars and Coleman's Report on European Agriculture.

To George W. Dodge, Wenham, second premium, eight dollars.

For the Committee,

DANIEL P. KING.

Ipswich, Sept. 24th, 1845.

GEORGE DODGE'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN,—I present for your inspection, one box of June butter, containing 25 lbs., being a specimen of 132 lbs. made between the 1st of June and 9th of July, from 5 cows; also, 2 boxes of September butter, containing 27 lbs., being a specimen of 405 lbs. made between the 20th of May and 20th of September, from the same cows. Their feed has been common pasture until August; since then, the pasture being very poor and dry, we have fed them night and morning with green corn fodder, which was raised for the purpose.

Process of Making. The milk is strained into tin pans, where it stands from 36 to 48 hours. It is them skimmed, and the cream put into tin pails, standing on the bottom of the cellar; a little salt is put into the pails before putting in the cream, which at the times of addition is stirred. We churn twice a week. The butter-milk is thoroughly worked out by hand, no water being used for that purpose. In warm weather the cream is lowered into the well the night before churning. Immediately after the butter-milk is worked out, the butter is salted with an ounce of ground rock salt to the pound, and in about 24 hours it is again worked over.

N. B. The June butter is packed down in layers of five pounds each, and salt sprinkled between, the top is covered with salt, and the pot is set on the bottom of the cellar.

Yours, respectfully,

G. W. DODGE.

Wenham, Sept. 24th, 1845.

BENJAMIN T. LANE'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN,—I offer for your judgment one pot of June butter, containing 25 lbs, and two boxes of September butter, containing 34 lbs, being a specimen of 475 lbs, made between the 20th of May and the 20th September, from the milk of eight cows, one of them commencing the middle of July. We have sold, in addition to this, 291 gallons of milk, and 12 quarts of cream, besides using milk for

a family of seven persons. The cows came from the barn in the spring, in good condition, since which time they have run in a common pasture, and since the first of August have been served with a foddering of corn at night, planted for that purpose.

In the process of making, the milk is strained into tin pans, and placed in a cool stone dairy cellar; and, after standing from 36 to 48 hours, it is skimmed, and the cream put into stone pots, where it remains, standing on the brick floor of the cellar, till it is ready for churning. We churn twice a week. When the butter is formed the butter-milk is drawn off, and the butter washed twice with cold water. We use rock salt, and in preparing it for use, we mix thoroughly together one quarter of a pound of loaf sugar and three quarters of a pound of salt. One ounce of this mixture is used for a pound of butter. After 24 hours the butter is again well worked, and weighed in pound lumps. The tin boxes, in which our butter is marketed, have reservoirs in the middle to contain ice, by means of which, the butter reaches the customers perfectly cool and hard in the hottest weather.

BENJAMIN T. LANE.

Danvers, Sept. 23d, 1845.

ALLEN W. DODGE'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN,—I offer for your inspection a pot of June butter, of 25 lbs. I also offer as a specimen of September butter two boxes containing 30 lbs, churned on the 20th inst. Up to that time, we have made the present season 1180 lbs. The following statement I send in compliance with the rules of the Society.

1. The number of cows kept is thirteen—all of native breed.

2. Their feed in winter was hay of good quality, so that they came from the barn in the spring in good condition. Their pasture has been very short, owing to the excessive drought. Since the middle of July, they have been fed at night with green corn fodder.

3. *Treatment of Milk and Cream before Churning:*—The milk is strained into tin pans and placed in a cool cellar for the cream to rise, which will be according to the weather. The day previous to churning, the cream is, in hot weather, lowered into the well, in tin

pails or cans, in order to become cool. The butter thus comes of a hard consistency and no difficulty is experienced in making it free of butter-milk.

4. Mode of churning. Soak the churn with cold water over night. We have used the present season, Kendall's Cylinder Churn, which we think a decided improvement. It has many advantages over any we have heretofore used. Churn once a week, two days before the butter is taken to market.

5. The method of freeing the butter from milk, is by working it thoroughly with the hands. It is never rinsed in water. The day after being worked over it is put into lumps of one pound each, for market.

6. Salting of the butter. Use the ground rock salt, and salt to suit the taste, generally about three quarters of an ounce to the pound. The sample of June butter had added to it a small quantity of loaf sugar and saltpetre, to aid in preserving it.

Besides making the above quantity of butter, we have used milk for eight in the family. Respectfully yours,

ALLEN W. DODGE.

Hamilton, Sept. 22, 1845.

WARREN AVERILL'S STATEMENT.

To the Committee on the Dairy.

GENTLEMEN,—I offer for your inspection one pot and box of September butter, containing 32 lbs., being a specimen of 211 lbs. 2 oz. made from one cow since the 20th day of May, until the 20th day of September, inclusive.

Process of Making. The milk is strained into tin pans, and stands from 24 to 36 hours in a cellar, when the cream is taken off and put into a tin pail. We churn the first part of the season once in four days; the latter part, once a week. The cream is brought from the cellar in the morning, and strained through a cloth into the churn. After it is churned, (which has taken on an average, seven minutes,) the butter is taken out of the churn, put into an earthen pan, and water put with it. This is repeated until the buttermilk is thoroughly rinsed from the butter, so that there is scarcely any color in the water. The butter is then worked over. Then it is put into

an earthen pan and salted with one ounce of salt to a pound of butter. It is then worked over again thoroughly, piece by piece, then made into balls and put into the cellar, fit for market.

I keep two cows, Flora and Kendall. Flora I keep for butter, Kendall I keep for milk to sell and use in the family. Flora has made 211 lbs. 2 ounces of butter since the 20th day of May, to the 20th day of September, inclusive. She calved on the 21st day of April, and I kept the calf to her until the 13th day of May. From the milk the calf left after sucking and all she gave until the 19th, inclusive, we made 20 lbs. 8 ounces of butter, making in all 231 lbs. 10 ounces since she calved. Milk given to make the 211 lbs. 2 oz., 122 days, 4,375 lbs.

Butter made from the 20th May to last of June, 84 lbs. 2 ounces. In July, 52 lbs.; August, 43 lbs.; and in twenty days in September, 32 lbs. 2 ounces. Flora would have made rising 35 lbs. in the twenty days, had she not met with an accident by jamming one of her teats on the 14th, in consequence of which we did not use the milk in that quarter of her bag for the last six days. She made 24 lbs. the first fourteen days.

Manner of keeping the Cow. After she calved, I commenced giving her two quarts of meal per day, and hay, until the last day of May. The 20th of May she went to pasture in a pasture by herself. The pasture was good through June; the first part of July it began to fail, and I took her out and put her into an old pasture with other cows for three weeks; then put her back into her pasture, where I kept her until the 24th of August, when I put her with another cow in new feed. I commenced giving her two quarts of meal the 30th day of August, one of rye and one of Indian, every night, but none in the morning. She had no meal nor roots, nor any thing else, except what the pasture afforded, from the first day of June to the 30th day of August.

WARREN AVERILL.

Ipswich, September 23, 1845.

We, the undersigned, certify that the foregoing statement is true.

ELIZABETH J. AVERILL,
ELIZABETH AVERILL,
ADAH KNOX.

DANIEL PUTNAM'S STATEMENT.

To the Committee on the Dairy :

GENTLEMEN,—I offer for your inspection, two boxes of September butter, containing 26 lbs., being a sample of 615 lbs., made between the 20th of May and the 20th of September, from the milk of eight cows, some of which have been nearly dry a part of the season, having calved last autumn. The milk of more than one cow, has been sold and used in the family, so that it would not be more than the average milk of six cows. Their feed has been a poor pasture, one quart of meal per day, with some mown grass, or corn stalks.

Process of making the butter:—The milk is kept in tin pans. After standing from 36 to 48 hours, the cream is taken off, and put into tin pails. We churn twice a week. When the butter-milk is drawn from it, we thoroughly rinse it in cold water; it is then taken from the churn, worked in part, salted, an ounce of salt and one fourth of an ounce of loaf sugar to the pound. In about 24 hours it is worked the second time.

DANIEL PUTNAM.

North Danvers, Sept. 24, 1845.

ON SWINE.

The Committee on Swine, having attended to the duty assigned them, as carefully as the limited time allowed would permit, REPORT:

The exhibition of swine was, if not as large, in the opinion of your Committee, as deserving the encouragement of the Society as at any previous meeting. There were presented for premium,

By William Williams, of Rowley, one breeding sow, 16 months old; four weaned pigs, 5 months and four days old; and one boar, 5 months and 4 days old.

By D. S. Caldwell, of Newbury, one sow, 2 years old; and four pigs, 4 months and 28 days old.

By Joseph Andrews, of Essex, one boar pig, 5½ months old, weighing 208 lbs.

By Allen W. Dodge, of Hamilton, seven pigs, 4 months old.

By Jacob Brown, of Ipswich, two sows, 18 months old; and nineteen pigs, 3 months old.

By Levi Willet, one hog, 1½ year old, weighing 558 lbs.

The Committee unanimously recommend the following premiums, viz:

To William Williams, of Rowley, for his boar pig, the first premium of five dollars.

To Joseph Andrews, of Essex, for his boar pig, the second premium of two dollars.

To D. S. Caldwell, of Newbury, for his breeding sow, the first premium of five dollars.

To Jacob Brown, of Ipswich, for his breeding sow, the second premium of three dollars.

To William Williams, of Rowley, for his litter of weaned pigs, the second premium of six dollars.

To D. S. Caldwell, of Newbury, for his pigs, the second premium of three dollars.

All which is respectfully submitted,

GEORGE W. ADAMS,
JOHN ALLEY, 3d,
DANIEL S. COLMAN.

Ipswich, Sept. 24, 1845.

ON IMPROVED AGRICULTURAL IMPLEMENTS.

The Committee on Improved Agricultural Implements, respectfully REPORT:

That a small machine, called a Corn and Cob Grinder, was presented by Hiram A. Pitts, of Winthrop, in Maine, of which he claims to be the inventor, and has obtained for it a patent.

The machine appeared to the Committee to be very ingeniously constructed. It would require water or steam or horse power. The Committee saw it in operation a short time, by

water power, and the work was done in a rapid and satisfactory manner, at the rate of perhaps eight or ten bushels of ears of corn an hour. It is said to be the same machine which obtained a premium of ten dollars at Utica, from the New York State Agricultural Society.

But as there was no proof given to the Committee of the work done by the machine before it was exhibited, and no evidence of its having been used and approved by some practical farmer, the Committee were not authorized to recommend a premium, and further trial seems necessary to establish its merits for the use of the practical farmer.

An ox yoke, said to have been made by a youth of fourteen years of age, was creditable to his ingenuity, but not of sufficient merit for a premium.

Respectfully submitted,

FREDERICK HOWES, Jr.

Ipswich, Sep. 24, 1845.

ON MEADOW AND SWAMP LAND.

The Committee on Meadow and Swamp Land, respectfully Report:

That they have received but one application for premium. That entry was made by David Gray, of Andover, whose statement is handed in with this report. The Committee will simply observe that upon examination of the meadow referred to, they found the statement of Mr. Gray well sustained by the appearance of the land and the crop standing upon it. They hope that his success will encourage many others to commence similar improvements, though they may be restricted at first to small fields. There is probably no way in which those who have meadow land can so easily increase the produce of their farms as by draining and cultivating their meadows. Your Committee recommend that a premium be given him of fifteen dollars and Coleman's European Agriculture.

Your Committee would observe that it is their deep impres-

sion that one of the best efforts that the Essex County Agricultural Society could make would be to secure a scientific and practical survey of the meadows of the county. In this way great and important principles might be developed, much useless labor saved, many disappointments avoided, successful enterprises accomplished with less expense, and the whole labor bestowed on this part of farming be followed by much more encouraging reward. To give a single illustration :—

Some meadows in this county are flooded with water which comes in the form of springs from the high lands in the vicinity, and can be easily drained by cutting ditches in the borders.

Others receive their water from springs rising up underneath, and require therefore a different process.

Many are simple basins, having a hard and impervious bottom. They hold the water which is rained upon them, and the little that runs in upon the surface of land around, as water runs into tubs from the roofs of buildings.

Some swamps no doubt are watered by a combination of all these sources.

Now, how obvious it is that in draining these swamps a regard must be had to these circumstances. And how few, comparatively, are as fully informed, and at present have it in their power to be as fully informed, as would be good and profitable for them to be. How could the Society do better than to investigate the subject and inform the County ? A few hundred dollars laid out in such a survey, would be followed by manifold more advantages than all the premiums that are likely to be given on reclaimed lands for many years.

For the Committee.

G. B. PERRY.

Danvers, Nov. 17, 1845.

DAVID GRAY'S STATEMENT.

To the Committee on Meadow and Swamp Land :

GENTLEMEN,—I commenced operations on my meadow in the autumn of 1842, with no practical experience in the business,

by digging a ditch through the lowest part of the land, but the next year I found it did not clear it of superabundant water. I then ditched it on the shores, which effectually drained it. It was a peaty bottom, varying from twelve to thirty inches in depth, with a stratum of about three inches of clay, mixed with sand, immediately under which was a deep quicksand. In ditching I cut through the clay into the sand, which effectually drained it. In the spring of 1844 I found it in a proper state to plant with potatoes, but too soft for ploughing. I then dug it with a spade, or what the Irish call a loy, laying it in ridges about four and a half feet wide, with ditches between, from twelve to twenty inches in width. Before digging I covered the ridges with gravel, two or three inches deep. I then spread my manure on the gravel, and covered it by turning a sod each way, making it into ridges in the same manner that back furrows with a plough would do. A part of it I manured with common winter manure from the barn, and a part I manured with ashes made of peat cut from between the ridges. The early kinds of potatoes did well, but the later kinds were destroyed by rust, when about half grown; still my crop averaged about four hundred bushels to the acre.

In the summer of 1844, I undertook to plough a portion which had not been cultivated, but did not succeed, it being too soft for oxen to travel on. I then dug it over with the Irish loy, laying it perfectly flat, as a plough would turn it without ridging it. I then covered it with a mixture of sand, gravel, and loam, about three inches deep, applying about twenty cart loads of compost manure to the acre. I then sowed it with herds grass and red top the first week in September. It promised well when winter set in; but in the spring of 1845 I found some of it killed with frost, and the land in appearance somewhat spongy, to remedy which I sowed more grass seed.

The produce, this year, of 162 rods, is as follows:

73 rods planted with chenangoes in April, 110 bush.	$80 00
53 do. planted with blues in June, 125 bush.	50 00
Amount carried over,	$130 00

Amount brought over,	$130 00
36 do. oats, on which no application of manure had been made, except a few ashes last year, 1500 wt.	9 00
The 73 rods of land planted with chenango potatoes, was sowed with oats on the 5th and 7th of August, and there is now, Sept. 4, by estimation, 3000 wt. to the acre,	15 00
	154 00
Deduct 10 dollars for rotten potatoes,	10 00
	$144 00

The potatoes were planted by perforating the sod after it was turned, and the potatoes dropped in and then covered with a slight poke with the stick one foot asunder each way, making four rows on a ridge.

DAVID GRAY.

Andover, Oct. 1845.

ON GRAIN CROPS.

The Committee on Grain Crops, REPORT:

That they have examined the claims presented to them :— One by Dr. Ingalls Kittredge, of Beverly, on a crop of Indian corn. The quantity was only about sixty-four bushels per acre, and as the premium offered by the Society was for not less than eighty bushels per acre, the Committee do not feel authorized to award him the premium.

The other two claims were for Rye. The Committee have examined the statements, and find that of Mr. Alfred Newton's, of Ipswich, to be a fraction short of the quantity required, though a good crop. The statement of Mr. Thomas McMahon, of Ipswich, so far as your Committee can judge, appears correct, and as the quantity of his crop, being about thirty-five

bushels per acre, exceeds the amount required by the society, your Committee award to him the premium of $8 00.

JEDEDIAH BARKER,
J. HAMMOND COGGESHALL,
A. T. NEWHALL.

Danvers, Nov. 17, 1845.

INGALLS KITTREDGE'S STATEMENT.

To the Committee on Grain Crops :

GENTLEMEN,—I herein enclose a certificate from A. N. Clark, of the quantity of land, also a certificate from Stephen Cree and James Leon, of the corn that grew thereon. I also send a couple of ears for a sample of the corn. The piece of land is bounded on Chapman street, about four hundred feet west of my house, where I now live, which being high gravelly land, had not been under any cultivation except for a cow pasture for over forty years, to my knowledge. Last fall I carted on to it about fifty horse cart loads of brick lime and ashes from the ruins of my house, spread on about one half of the same, and the residue mixed with about three cords of manure. On the 26th of last April, I had the land ploughed and harrowed, which took about one day of two hands and a light team. From the 7th to 10th of May, it was furrowed, manured with the above named compost, and planted about four feet apart. From the last of May to the last of July, the ground was hoed over three times without much hill. On the 17th day of October, gathered ; on the 21st and 22d, husked ; and measured it on the 23d, as you will see by the certificate.

INGALLS KITTREDGE.

Beverly, Nov. 15th, 1845.

I hereby certify, that I assisted in measuring a certain piece of land, belonging to Dr. Ingalls Kittredge, senior, situated on Chapman street, in the town of Beverly, and said piece of land measured in the whole rather more than an acre ; which after deducting three rows of potatoes around the field, left one hundred and fifty-one square rods, or an acre less nine rods, of said field, planted with

corn ; the same having been harvested, husked and measured, by Stephen Cree and James Leon, as per certificate.

Witness my hand, at Beverly aforesaid, this 15th day of November, in the year eighteen hundred and forty-five.

A. N. CLARK.

Essex, ss. Nov. 15th, A. D. 1845. Then, A. N. Clark, aforesaid, signed the foregoing certificate, and acknowledged the same to be true. Before

JOHN I. BAKER, *Justice of the Peace.*

We, the undersigned, do hereby certify to the Committee of the Cattle Show, of the County of Essex, that we did harvest, husk and measure one hundred and twenty-two bushels of sound corn, that grew on about one acre of land belonging to Ingalls Kittredge, of Beverly, the present year, or sixty-one bushels of shelled corn.

STEPHEN CREE,
JAMES LEON.

In presence of John I. Baker.
Beverly, Nov. 15th, 1845.

ALDRED NEWTON'S STATEMENT.

To the Committee on Grain Crops :

Gentlemen,—I offer for premium a crop of rye, fifty-three bushels, the product of one acre and one hundred and twenty-four rods, as per certificate annexed. The soil in which it grew is a dark sandy loam, with a sandy sub-soil. In the spring of 1844, the land was broken up and planted with potatoes, manured with about seven cords of barn and hog-pen manure, spread and harrowed in before planting the potatoes. The yield of potatoes was good, being four hundred and six bushels, and of a good quality. About the middle of December, the land was ploughed and the rye sowed and harrowed ; no manure was put on at the time of sowing the rye. I sowed two bushels of seed. ALDRED NEWTON.

Ipswich, Sept. 19th, 1845.

This may certify, that I measured the forementioned crop of rye, taken from the said ground, and that the above statement is true.

HORACE SEARLES.

Ipswich, Sept. 19th, 1845.

This may certify, that at the request of Mr. Aldred Newton, I have surveyed a piece of land, a rye stubble, situated in Ipswich, and find the contents to be, one acre and one hundred and twenty-four rods. AARON COGSWELL, Jr., *Surveyor.*

Ipswich, Sept. 19th, 1845.

THOMAS MCMAHON'S STATEMENT.

To the Committee on Grain Crops:

Gentlemen,—I offer for premium a crop of rye, forty-nine bushels and five quarts, the produce of one acre and sixty-five rods of land, sown in October last. It had a light dressing of fine manure on the furrow of a part of the land, and a corn crop the previous year. THOMAS M'MAHON.

Ipswich, Sept. 23, 1845.

The undersigned measured the grain as above, and found the same as stated, forty-nine bushels and five quarts.

AARON WALLIS,
DAVID ANDREWS.

Ipswich, Sept. 23, 1845.

This may certify, that I have this day surveyed a piece of land, a rye stubble, for Mr. Thomas McMahon, of Ipswich, and find the contents one acre, sixty-five and a quarter rods.

AARON COGSWELL, Jr., *Surveyor.*

Ipswich, Sept. 22d, 1845.

ON FARMS.

The Committee of the Essex Agricultural Society on Farms, Report:

That although the Society, from its earliest period, has offered liberal premiums for the best cultivated farms, still the far-

mers of the county have, with a very few exceptions, been unwilling to present their farms, with their mode of management, to the notice of the Society. This is to be regretted, inasmuch as the Society is thereby deprived of presenting, through their transactions, the method pursued by the best farmers in conducting their farms. During the last seven years, not an applicant for the premiums of the Society, on Farms, has been found. Agriculture, lying at the foundation of all successful industry, should by this, and every other means, receive all the light which its most devoted friends may be able to shed upon it.

During the current year, three farms have been offered for the inspection of your Committee, by Messrs. Daniel P. King, of Danvers, Christopher How, of Methuen, Jonas Holt, of Andover.

The farms of these gentlemen were visited in July and September.

The farm of Mr. King consists of one hundred and fifty acres, exclusive of his woodlands. Much of the soil of his cultivated grounds is a gravelly loam, the other portion is peat meadow, several acres of which have been reclaimed and made valuable. During the past unusually warm and dry summer, Mr. King has been able to grow very handsome crops of Indian corn, hay, &c., upon gravelly loam, inclining to be dry, by the use of compost manure, the basis of which was peat mud.

Mr. King considers a compost made of three or four parts of peat, to one part of stable manure, well mixed and fermented in the heap, to be better for gravelly or sandy loams, than the same quantity of stable manure. The good condition of his crops during the dryest part of the season, was evidence of the value of this compost for such lands. Indeed, so highly does he value peat for this purpose, that he assured us he could not farm without it. Peat, as a valuable ingredient in the formation of compost manure, has, hitherto, been much neglected by the farmers of this country. In Scotland, a pamphlet was published some time since, by the late Lord Meadowbanks, calling the attention of the Scotch farmers to peat as the basis for compost; three parts of peat to be used to one of barn yard

manure, and fermented in the heap. Since its extensive use there, the agriculture of the country has been greatly improved. In Mid Lothian a compost so prepared is said to stand cropping, whether by grain, of all sorts, hay, pasture, and potatoes; and whether on loams, thin clays, sand or gravel, at least equally well with farmyard manure, and at the same time it alters and amends the texture of the soil.

Mr. King has made experiments with guano, salt, saltpetre, and ashes. On one acre of meadow upon which 300 lbs. of guano were spread in April, and sown with oats and grass seed, the crop of oats was heavy, and the grass seed has taken well. Indian corn grown upon guano, was not as good as some grown beside it upon his compost manure. This, as the season has proved, was better than any fertilizer with which he experimented. Your Committee were pleased with the clean culture of his hoed crops, with the smooth and workmanlike manner of inverting the sod and re-seeding his grass lands after haying, and with the good condition of his working oxen and farm stock.

Without further remark we would refer to Mr. King's statement, which is annexed, and which will be read with interest,—for his manner of making and using compost manure,—the use of the horse rake in securing his hay crop,—for his method of re-seeding his grass land,—and especially to that part of his statement which relates to the keeping of a diary.

The farm of Mr. How is in Methuen, and consists of one hundred and seventeen acres; the soil, a gravelly loam, intermixed with stone, and good for grass. Some parts of the farm rise into large swells of considerable height, affording good pasture, and good crops when under cultivation. The ground at the base of these hills is too moist in the spring to admit of hoed crops, but produces large crops of English hay, and is kept in good condition for grass by an occasional top dressing.

Since 1819, when Mr. Howe came in possession of his farm, it has been increased from about fifty acres to its present extent, and from that time when the place kept but six head of cattle, such has been his addition of uncultivated lands, and his improvement upon the whole, that he is now able to win-

ter from twenty to thirty head of cattle, and to sell hay the last year to the amount of six hundred dollars.

The cultivation of fruit is attended to, and there are many fine young trees upon the farm, the soil of which is well suited to their growth.

During the last year Mr. How has built a neat and substantial dwelling house. His barn, 110 feet in length, is well whitewashed, and has a cellar under the whole of it.

Ashes, both dry and leached, have been used upon the farm, but not always successfully. Gypsum has been found to be useful upon pasture lands.

The addition which Mr. How has made to his farm, and the great improvement, upon it, is the result of well directed and persevering industry.

Your Committee regret that so good a farmer as Mr. How should be unable to give a precise statement of the expense of conducting his farm; but one thing he is certain of, that no claims are allowed to stand against him unsettled.

For an account of Mr. How's farm stock, the product of his dairy, the amount of his crops, and of his method of farming, your Committee refer to his statement, which accompanies this report.

The farm of Mr. Holt is situated in the South Parish in Andover, and contains about sixty acres. The soil stony and hard to cultivate, but on some parts of the farm susceptible of producing good crops. Mr. Holt has been engaged in subduing some very rough and stony ground, which may repay him for his labor, if the expense incurred be not too great. It was a question with your Committee, whether Mr. Holt would not derive greater profit from his farm by giving more attention to his field land, now under cultivation. It is not always good policy to bestow much labor on subduing very rough ground, when less expense applied to the increasing of the produce of the land already under cultivation, might add very much to the income of the farm. Mr. Holt has recently dug a cellar under his barn, for the purpose of increasing and preserving his manure.

In Mr. Holt's farming, your Committee do not observe any

thing differing materially from that of many other farmers of the County, either as to crops or income; but in consideration of his laborious efforts to bring under cultivation land very stony and rough, your Committee recommend that a gratuity be paid him of eight dollars. Mr. Holt's statement is annexed.

Your Committee recommend an award of the first premium of twenty-five dollars to Christopher How, of Methuen, and the second premium of twenty dollars, to Daniel P. King, of Danvers.

JOSIAH NEWHALL,
JEREMIAH COLEMAN,
DEAN ROBINSON.

November, 1845.

CHRISTOPHER HOW'S STATEMENT.

To the Committee on Farms:

GENTLEMEN,—The farm that I offer for premium contains one hundred and seventeen acres; sixty-two acres of pasturing, and the remainder mowing and tillage. The soil, a gravelly loam, and most of it was quite stony. I this year had five acres of winter rye, which yielded 111 bushels; five acres of oats, 245 bushels; two and a half acres of corn, 143 bushels; one and a half acre of potatoes, 275 bushels; hay, I think, about 75 tons. In consequence of the drought, my hay I think fell short of my usual crop about 15 tons; my corn and potatoes were also considerably injured by the drought. My crop of apples was also very light. I had only about 30 barrels of winter apples. This season I have kept ten cows, and have made 769 pounds of butter and 348 pounds of cheese. I usually winter from twenty to thirty head of cattle, as circumstances seem to require, and sell the remainder of my hay. I usually keep a considerable number of swine for the purpose of increasing my manure. I usually hire two hands through the farming season, and my son through the year; and about forty dollars for additional help in haying. I cannot give you an exact account

of my previous expenses in managing my farm, as I have not been accustomed to keep an account.

I came on the farm in 1819. It then contained about fifty acres ; and kept six head of cattle. All the addition that has since been made to the farm, was pasture land.

For planting, I usually plough soon after haying, and in the spring spread from thirty to forty loads of compost manure and plough it in. I have, to some extent, practised ploughing grass ground in the spring, and harrow in the manure, but prefer fall ploughing. I plant one year, and sow it down (usually,) with oats and hay seed. As to rye, we have not been accustomed to raise it, as it has been considered an uncertain crop.

I top dress my land that is too wet for cultivation. I have purchased considerable manure, and have recently purchased a meadow about one and a quarter mile from home, from whence I have hauled considerable peat mud. I have to some extent used dry and leached ashes ; sometimes they have done well, at other times very little or no benefit has been derived from them. I have also used gypsum, and it has done well, especially on pasture land.

CHRISTOPHER HOW.

Methuen, Nov. 3d, 1845.

DANIEL P. KING'S STATEMENT.

To the Committee on Farms :

GENTLEMEN,—Before the first of July I had no intention of inviting you to visit my farm, but then learning that there had been no entry which would secure a report from you, I was unwilling that the Society should lose the benefit of a report, for I think farmers derive their best hints from the observations and experience of practical farmers embodied in such reports.

I am far from thinking my management the best, or among the best, but as it has fully answered my reasonable expectations, I will as briefly as possible, state it.

My farm has great variety of soil, but the cultivated lands are mostly a gravelly loam. I have about fifty acres in mowing, tillage and orchard, twenty-five acres in meadow, one fourth of which is peat, seventy-five acres in pasture, and several tracts of wood land.

I formerly planted from seven to ten acres each year, but I have found it more profitable to raise hay than corn or potatoes: this last June from thirty cwt. hay delivered in the barn, I received in my grain bins forty bushels of good yellow flat corn: the hay cost me in labor and all fair charges twelve dollars; to raise the corn would have cost me twenty-five dollars at least.

By recurring to my journal,* (for I have long kept a sort of diary in which I have noted the employments of each day, the time of planting, hoeing and harvesting, the amount of crops, the cost of animals, current receipts and expenditures, &c.,) I find that since the 1st of April I have expended for labor two-hundred and five dollars, and one third of this has been in making walls, ditches and permanent improvements. I have kept two pair of oxen, one horse and ten cows, one pair of oxen which two years ago cost me fifty dollars, I have sold to the butcher for one hundred and five dollars; four cows which cost forty-three, I have sold for seventy-eight dollars, and I have received in exchange of cows thirty dollars. I have kept no account of the milk and butter used and sold, which has been less than the usual quantity. I have four fat swine worth seventy-five dollars, which one year ago cost six dollars; their manure paid for all the grain they have consumed. I have raised one hundred and fifty-eight bushels corn, ninety-five bushels of oats, thirty bushels of rye and one hundred and twenty bushels of potatoes; of carrots, turnips and beets about two hundred and fifty bushels, and of other vegetables and fruits an abundance. Some years I have had three or four hundred bushels of good apples, this year not more than thirty. I have cut thirty-one tons of English hay which was made and secured with fifty-five days labor; I used a horse rake which paid for itself in one week; my crop was diminished by the drought from one-fourth to one-third. My meadow hay was a fine crop and got in good order; I have sold twelve loads of meadow hay and straw, and have by estimation fodder enough, corn fodder included, to keep my stock and some twelve or fifteen tons to spare. I have carried to market twelve cords of wood, always taking a return load of manure. I purchase anually about forty-five dollars worth of manure, which I never use without composting. I

* The advantages of keeping a journal to a farmer are many. By turning to the pages of past years he will be reminded of work which should be done in its season; he will see where he has erred and profit from his experience; he will know where his money, sometimes difficult to account for, goes.

have used for planting, sowing and top dressing two hundred and eighty loads of compost. In the barn yard and pig pens I make about one hundred and ten loads, and at leisure times get out peat muck and cart it into the field where it is to be used. I then mix one cord stable or barn yard dung, preferring the stable, with four cords of muck; after lying till the heap heats, it is again thrown over and a few feet of fresh dung or spent ashes added if necessary. I have found this compost better than clear manure and equal to any thing except pig manure for corn and potatoes on gravelly or sandy loams. I have now on hand more than one hundred loads of this compost besides a good supply in the barn and pig yards, and I could not farm without it. With this kind of manure I this year had sixty bushels of corn to the acre, without any extra labor or care. One fourth of an acre produced at the rate of seventy bushels, and I raised fifty-five bushels of oats on one acre; no great yields certainly; but the expense of cultivation too was moderate. All the land on which I have this year raised potatoes, corn and oats, has been since ploughed, manured, and laid down with rye and grass seed, with the exception of one acre of meadow, which in April I sowed with oats and grass seed after spreading three hundred lbs. of guano; the oat straw was very rank and the grass has started handsomely. I have tried guano, salt, saltpetre and ashes this season, but I forbear to speak further of results because you, gentlemen, have seen them, and will determine for yourselves.

My corn land I usually plant but one year; it is always ploughed in the fall because the team is in better condition for work, more vegetable matter is ploughed under and the soil sooner becomes mellow. I have practised ploughing in August or September for rye; laid the furrow flat, rolled it, spread on from twenty-five to thirty loads of compost (thirty bushels to the load) harrowed well, then sowed one peck of herds grass and one bushel of red top, brushed it and then laid all smooth with a loaded roller. My rye and grass have always done well; the straw selling from seven dollars to ten dollars per acre, and the grain bringing ten per cent. more than the southern Directly after taking off a crop of hay, early in July, I have inverted the sod, rolled, harrowed in a good coat of compost, sowed one peck of millet to the acre, brushed, then sown grass seed, clover, herds, red top, and brushed and rolled smooth. I have never failed of getting a ton of millet fodder to the acre, and when the frost has delayed for about seventy days from the time of sowing,

thirty or forty bushels of millet seed to the acre, and the next year and for several years a good crop of hay. But it is not prudent to sow millet after the tenth of July, on account of the frost ; it should not be sown before the middle of May ; best sown in June. In August I ploughed two acres of land which was this year mowed ; rolled it flat ; spread sixty loads of compost, harrowed it well, sowed one-half bushel herds grass and two bushels red top, then brushed and rolled it smooth ; this process has always succeeded with me.

In planting my corn the present season, instead of cross furrowing, I ran the plough but one way, and not so deep as to disturb the sod, nearly filled the furrows, which were four feet distant in part of the field, with my common compost, in part with pig manure, then dropped the kernels in the furrows, six inches apart, and covered, leaving the surface of the ground even; in May went between the rows with the cultivator and hoe, and again the last of June, but making no hill, and this, with the exception of pulling by hand a few weeds, was all the culture. The crop, as you witnessed, was clean and heavy.

In October, 1842, I ploughed three acres of field land, which had been in grass five years, and rolled it. In May following harrowed it and spread seventy loads of compost, which was well harrowed, then marked the hills four feet apart each way, dropped the corn and covered; in June went through with the cultivator and hoe, and late in July sowed grass seed among the standing corn, went through with the cultivator and hoe, making no hills; in October the corn was cut up close, and the ground rolled with a loaded roller. On one acre I had one hundred and two baskets of good corn, and the crops of grass have been fair. I have since followed this plan with better success when I have used more and better compost.

I have this year let five acres of meadow and three pasture lots. I have top dressed my reclaimed meadows with a compost of loam and warm manure, and have further extended my experiments in reclaiming meadows. I have attempted some improvements on bushy and mossy pastures, which now promise well; on these I have sown winter and multicole rye with some spurry and common grass seed.

If I have raised no large crops, the expense and labor have been moderate, and I have the satisfaction of thinking that my farm is in an improving condition.

DANIEL P. KING.

Danvers, Nov. 4th, 1845.

JONAS HOLT'S STATEMENT.

To the Committee on Farms :

GENTLEMEN,—Agreeably to your request, I take this opportunity to inform you of the method of managing my farm. I keep a hired man seven months, pay him thirteen dollars per month. I keep one yoke of oxen, one horse, five cows, and have four young cattle.

I compost all my manure, mixing the manure from the horse stable, the cow yard and the hog pen, altogether, carry the manure out into the field from these several places in the fall, heap it up and cover the heap with meadow muck or loam. In the spring I take what manure is made by the cattle and horse, carry it out into the field, and mix it with the heap drawn out in the fall. Where it is not too rough I spread my manure broadcast, but where the land is very rough and stony I put it in the hill, but I prefer the broadcast system where it is practicable.

I planted one acre and a half of corn, mostly on very rough rocky land, and harvested fifty-four bushels of corn from the same. My potatoes have rotted somewhat, so that with the drought and the rot I shall get but 224 bushels sound potatoes, from thirty-three bushels of seed, about half my usual crop. I have raised 50 bushels French turnips, 40 bushels sugar beets, 5 bushels of onions, 6 do. of white beans, 2 cart loads of pumpkins, some squashes, and a variety of garden vegetables, such as round turnips, beans, cabbage, &c. I cut about 20 tons of English hay and 4 tons of meadow ; raised 42 bushels of oats from 3 bushels of seed. I sow about two bushels of oats to the acre. Raised 21 bushels of barley on three quarters of an acre. I had 6 bushels of pears from three small trees ; sold 5 bushels, at one dollar per bushel ; of apples I had but few, most of my trees have been set within a few years. I had only 13 barrels of winter apples, mostly baldwins, which I sold at two dollars per barrel, at home.

I usually sell from three to six tons of hay in a year ; the average price for the last ten years has been a little over fifteen dollars, at the barn.

I have dug probably about one hundred loads of muck, this summer, to lie and freeze for next year's use. I have dug fifty rods of ditch in the pasture, (since you last visited my farm,) thirty inches

wide at the top, eighteen inches deep, and twelve inches at the bottom; and have ploughed seven acres of my bush pasture, sowed four acres with rye for feed, two bushels of rye to the acre; the remaining three acres I intend to sow with oats in the spring, for feed, in order to test the comparative value of oats and rye for feed. Where I sow rye I also sow timothy at the same time, six quarts of seed to the acre; and in March or April, sow six pounds of clover seed on the snow, and let the rain cover it.

JONAS HOLT.

Andover, October 22d, 1845.

ON ROOT CROPS.

The Committee on Root Crops, REPORT:

That there is but one claimant, Mr. Paul P. Pilsbury, of Andover, to whom they award the Society's premium of six dollars.

The crop is not considered superior by the Committee, but as the land was of an inferior quality, they feel justified in giving the above award.

By order of the Committee.

ERASTUS WARE.

Danvers, Nov. 17, 1845.

PAUL P. PILSBURY'S STATEMENT.

To the Committee on Root Crops:

GENTLEMEN,—The land measured by Mr Dascomb, whose certificate accompanies this communication, was in 1843, when I came into possession of it, in grass. In the fall of the same year I ploughed it, and the next spring harrowed it smooth, furrowed it, and put on eight loads of compost manure to the acre, and planted it with white beans; crop eleven bushels to the acre.

The first week in June last, I ploughed the ground again, harrowed it down, then furrowed it with a double mould plough in furrows three feet apart, and put seven cart loads of compost manure

on a half acre in the furrows, and then ran the same plough between the rows turning the furrow each way to cover the manure.

I then sowed half a pound of ruta baga seed to the half acre, on the top of the ridges, and raked the seed in with a hand rake.

About the last of June the ground was hoed, and the vacancies filled by transplanting. The plants were about a foot apart and in July they were again hoed for the last time, running the cultivator between the rows each time.

The first week in November, the crop was harvested, and after clearing the turnips of dirt and leaves they were put in small piles to dry. After they were well dryed they were hauled to the cellar where they were measured in a large basket, filling the baskets as nearly alike as possible.

Eight baskets were weighed, which varied, after filling them as nearly alike as we could fill them, from 100 to 106 lbs. to the basket, but in order not to make the estimate too high, I called each basket 100 lbs., and had 199 baskets full, or 19,900 lbs., or, allowing 56 lbs to the bushel, $355\frac{5}{14}$ bushels.

Had it not been for the severe drought I have no doubt, but I should have had 500 bushels on the half acre.

My compost was composed of five loads of meadow mud, (cart holding forty bushels,) and two loads manure from the barn yard. A part of the mud had lain under the cattle tie-up during the winter, and the rest had received the wash from the house ; all of which was hauled to the field and mixed before putting into the drills.

The items of cost stated, are counted at one dollar per day for labor, and are nearly as follows :

Interest on land, at $50 per acre,	$ 1 50
7 loads compost, at $1 50,	10 50
Labor, hauling manure and turnips,	1 50
½ day furrowing,	50
1 day putting in manure,	1 00
1½ day weeding and transplanting,	1 50
1½ do. for a boy, at 75c.	1 12
1 day, second time, myself and boy,	1 75
3 days, harvesting, do. do.	5 25
½ lb. seed,	25
	$ 24 87

The land on which I raised this crop is a light soil, composed of a

dark loam mixed with sand and gravel. It was in a very bad state when I first came into possession of it, and produced a very light crop of grass.

PAUL PILSBURY.

Andover, Nov. 7, 1845.

This is to certify, that I assisted Mr. Pilsbury in the measurement of land and crop, and do hereby vouch that the above statement is correct.

JACOB DASCOM.

ON FRUIT TREES.

The Committee on Nurseries of Fruit Trees would respectfully REPORT:

That the number entered for premium was three, viz: Joshua H. Ordway, West Newbury, Ephraim Woods, Salem, Moody Ordway, West Newbury.

The Apple Nursery of Mr. J. H. Ordway, contains about four thousand; fifteen hundred of these were from two to three years from the bud, and the remainder, twenty-five hundred, were of one year; these last were uncommonly thrifty and well grown. Your Committee consider him as deserving the first premium of $10 and Coleman's Agricultural Report. The Pear Nursery of Mr. Woods, containing about eleven hundred trees, two and three years from the bud, were exceedingly thrifty. The apple trees referred to in his statement appended to this report, your Committee did not consider to come within the conditions upon which premiums are offered, not having been grown from the seed by himself. For his Nursery of Pears, your Committee consider him entitled to the second premium of $10. Mr. Moody Ordway's Nursery of Apples and Peaches, particularly the latter, were well grown; his statement, which was forwarded to your Committee, it was thought unnecessary to append, inasmuch as there were but two premiums offered by the Society.

We annex the statements of Mr. Joshua H. Ordway and Mr. Ephraim Woods.

Respectfully submitted, for the Committee,

JOHN M. IVES,
GEORGE THURLOW,
ABEL NICHOLS.

Salem, Nov. 17, 1845.

JOSHUA H. ORDWAY'S STATEMENT.

To the Committee on Fruit Trees:

GENTLEMEN,—The trees to which I would call your particular attention, are two lots of apple, one lot of from fifteen to eighteen hundred, two and three years old from the bud, the other of twenty-five hundred, one year from the bud, stocks four from seed, transplanted when two years old.

The following was the course pursued in raising the last named lot, which is, I think, the best method, on a soil like mine, which is rather difficult to cultivate, being a hard gravel and slate, with a strong clay subsoil, naturally ill adapted for raising trees or fruit. In the autumn of 1841 I ploughed about fifteen rods of land, eight inches deep, where corn grew that season, spread two loads of fine barnyard manure on the surface and harrowed it smooth; I then, by line, made shallow drills three feet apart, into which I scattered pomace as taken from the mill, sufficiently thick, covering it lightly not exceeding half an inch deep; the trees came up well, were hoed several times, the unhealthy ones taken out. In two seasons they made a good uniform growth. In the spring of 1844, they being two years old, were transplanted, (first cutting off the tap root,) in rows four feet apart, ten inches from each other, care being taken to select those of uniform size and thrift; the remainder are set on another lot, not being of sufficient size to bud.

In August following, I budded twenty-five hundred with the best standard varieties, mostly winter fruit; the buds took finely, in several rows of one hundred each, scarcely a bud failed. They have made a very straight uniform growth this season.

I practise shield or T budding, and put the bud on the southwest side of the tree, the rows running southeast, they are then not exposed to the sleet and snow of winter. I formerly lost many buds by inserting them on the "back" side of the tree; another advantage, in putting the bud on the south, is the greater portion and quicker flow of sap on that side, as every one knows that a bud takes best where there is the most sun and sap. I learned some twenty years ago, to take out the wood from the bud, but soon gave up the practise; I should as soon think, now, of taking out the pith of a scion.

On a part of the ground on which these trees stand the manure was ploughed in, and on a part spread on the surface, in equal quantities; the latter is decidedly the best practice in nurseries, in fact for any and all crops, I have succeeded best where I followed nature and apply the manure to the surface, working it in with a harrow or cultivator sufficiently to prevent evaporation. I use any manure, in a fine state, which I happen to have when wanted, on the surface, working it in with a cultivator, the rows being sufficiently wide to allow a horse to pass without injury to the trees. I prefer, however, a compost, of stable and hog manure one part, and two of muck and turf from the brook.

I have never manured the same piece of ground oftener than once in three or four years, much more depends upon good culture than high manuring to obtain good healthy trees, besides being much more valuable for planting in orchards, not being of such "fungus" materials.

To the query of the Committee, whether I could suggest some remedy to prevent young trees, as is common, from bending with the wind, I would say that I know of no better one, than to raise strong stocks, that will throw up a vigorous shoot, able to resist the action of the wind, and let all the leaves remain on the trunk. The practice of many people of stripping them off is very injurious.

I don't prune much as the trees advance in age and size, merely cutting off superfluous branches, and keep a good balance of the top.

A word in regard to transplanting trees to the nursery or orchard.

Time. I have had much the best success when removing them in early spring, with few exceptions. Young trees set in the fall are liable to be thrown out by frost, and all, whether large or small, often suffer injury by having their roots severely frozen, when the ground is bare, during our severe winters.

J. H. ORDWAY.

Ordway's Nursery, West Newbury, Oct. 30, 1845.

EPHRAIM WOODS'S STATEMENT.

To the Committee on Fruit Trees :

GENTLEMEN,—In compliance with your request, I will give you a short statement of the present condition of such products of my nursery, in Salem, as are thought to come within the sphere of your observations in the performance of the duty assigned you, together with a few observations concerning my mode of cultivation.

I have eleven hundred pear trees, two and three years growth from the bud, mostly two, of the choicest varieties. The soil is a loam, from nine to twelve inches deep, on a coarse gravelly bottom. I have manured it but once in four years, and then to the amount of three cords of common barn manure to the acre, which was spread on the surface, and worked in with the cultivator and hoe. I have hoed the ground as I would in the cultivation of corn or potatoes, so as to keep it free from weeds and in good condition.

I have over one thousand apple trees, of the most approved varieties, two years old from the bud, cultivated in the same way.

EPHRAIM WOODS.

Salem, Nov. 13th, 1845.

LIVE FENCES.

The Committee on Live Fences would REPORT :

That there has been but one claimant for premium the pres-

ent year, Doct. George Cogswell, of Bradford; both his hawthorn and buckthorn hedges look exceeding well. The Committee recommend that he receive the Society's first premium of twenty dollars. They conceive that any remarks are unnecessary as his statement is appended.

For the Committee.

JOSEPH HOW.

Methuen, Nov. 10, 1845.

GEORGE COGSWELL'S STATEMENT.

To the Committee on Live Fences:

GENTLEMEN,—A part of the hedge which I offer for premium, is hawthorn, the other part is buckthorn.

There are about seven rods of the hawthorn, which was set by me in the spring of 1834. The plants were then two years old, taken from a nursery at Indian Hill Farm, West Newbury, Mass. They were placed six inches apart, without any preparation of the soil. They were cut within *six inches* of the ground when set out; the September following, trimmed nearly back to the *first cutting;* spring following, in June, trimmed to within eight inches of the last cutting; again in September, trimmed nearly back to the spring cutting; and so on from year to year to its present growth, which is five feet three inches high and three feet thick. It is now eight years since the hedge was set; for the last three it has been used as a fence to my front yard, and has proved an impenetrable barrier to any annoyance which might occur from numerous droves of cattle and swine. It has been kept free from weeds, and manured twice. No plant of the original number has died. During the summer, this presents a beautiful and delicate foliage, surpassing that of any other hedge-plant with which I am acquainted. For some seasons, in September, its beauty has been marred by the slug-worm; besides this it is perfect; cattle do not browse or hook it,

The buckthorn hedge was set out in the spring of 1839; the plants were then two years old; the mode of trimming has

been nearly the same as the other. A part of the soil is moist —the rest somewhat dry. No plants have died. It appears hardy and holds green till late in the season. As a hedge plant it requires a longer time than the hawthorn, having few thorns. The cattle browse it in some measure, and also hook it. This hedge is about seventeen rods in length.

The above statement was made by me to the society and published in its doings in 1842. Since then both of the above mentioned hedges have been trimmed twice a year, generally in the months of June and August. At the present time my hawthorn hedge measures 5½ feet in height and 3¼ feet in thickness. My buckthorn measures 4¾ feet in height and 3½ feet in thickness.

The hawthorn has continued to flourish, and has retained its foliage the present season longer than ever before.

The buckthorn has served as a fence to protect my garden for the last two years.

GEORGE COGSWELL.

Hawthorn Place, Bradford, Sept. 23 1845.

ON FRUITS AND FLOWERS.

The Committee on Fruits and Flowers, REPORT:

They take pleasure in saying, that in quantity, quality and variety, the exhibition of fruit, to-day, surpasses any previous show, and affords gratifying evidence that this culture is gaining importance in the estimation of Essex County farmers. Sixty-seven entries were made, embracing apples, pears, peaches, quinces, plums and grapes. Among the largest contributors, were J. S. Cabot, and John M. Ives, of Salem, Moody Ordway, of West Newbury, Andrew Dodge, A. J. Dodge, and Ezra Dodge, of Wenham. A seedling peach, of large size and flavor, a prolific bearer, presented by the producer, J. M. Ives, the Committee have named "Ives's Seedling." This fruit is in perfection at the present time, and may be regarded as a valuable acquisition to this department of po-

mology. Mr. Ives authorises us to say, that he will, next season, furnish buds gratuitously, to members of the Society, who desire them. Benjamin Edwards, of Wenham, presented a seedling peach and a seedling sweet apple, of his own production, both of fine quality. To the former, the Committee have given the name of "Edwards's Seedling," and to the latter, "Edwards's Sweeting." The Committee would express a hope, that the cultivation of seedling fruit may engage a greater share of attention in our community hereafter. The thanks of the society are due to Messrs. Walker, of Roxbury, Warren, of Brighton, and Philbrick, of Brookline, for their display of fruits. Did the rules of the society permit, the Committee would recommend gratuities to each. Under existing circumstances, they trust that these gentlemen will accept "the will for the deed."

Of Flowers, there were sixteen contributors, and the display was superior to any former occasion. The cultivation of flowers promotes refinement and taste, and we are gratified to recognize, to-day, so many evidences of their appreciation by the daughters of Essex. In the judgment of the Committee, the exhibition of fruits and flowers may, with suitable effort, be rendered one of the most attractive features of this annual assembling.

In conclusion, the Committee recommend the following gratuities:

Fruit. Andrew Dodge, J. S. Cabot, James Peabody, Ebenezer Rowe, John M. Ives, one dollar each; Moody Ordway, Ezra dodge, A. J. Dodge, Jos. L. Ober, Amos French, seventy-five cents each; Abraham Lord, F. H. Wade, Jonathan Berry, Joseph Farley, John Tuttle, Mrs. M. C. Baker, Thos. Pierce, Josiah Caldwell, Alfred Kimball, David Lord, Geo. P. Wilkins, Wm. R. Putnam, Charles W. Lord, William Ives, Jefferson Perry, Israel Trask, Joshua Buxton, Benjamin Edwards, fifty cents each; Rebecca S. Ives, A. Hammatt, Eben Lord, Joseph Horton, James Manning, Samuel Kinsman, Oliver Bailey, Alfred Kimball, Wm. F. Wade, twenty-five cents each.

Flowers. F. H. Wade, of Ipswich, Wm. Hall, Bradford,

Mrs. George Tenney, Georgetown, one dollar each; Alfred Kimball, Samuel Caldwell, Hannah Baker, Hannah Peabody, Sarah Kent, Mrs. John A. Kimball, A. Hammatt, Ipswich; Mrs. Morse, Mrs. Geo. Spofford, Georgetown; Andrew Dodge, Wenham; Daniel Lord, Miss Lord, Mrs. Cleaves, Salem; fifty cents each.

Respectfully for the Committee,

EDWIN M. STONE.

Ipswich, Sept. 24, 1845.

ON VEGETABLES.

The Committee on Vegetables, REPORT:

The exhibition of vegetables has been gratifying to the committee, in the highest degree. This is partly owing to the fact that, while there was no deficiency in vegetables of uncommon size, mere monster productions seem not to have been *sought for*, but a larger proportion of the articles were of the useful and indispensable kinds. The Committee would particularly approve of every attempt to improve the potato, that valuable article, indispensable the world over. The efforts of Abel Burnham, of Essex, by which he has been able to produce thirteen kinds of seedling potatoes, apparently now full grown the second year from the apple, must strike every one as meritorious. So the specimen of Indian corn produced by Isaac Babson, of Beverly, accompanied by a statement of Rev. E. M. Stone, is exceedingly fine. Whatever may be the facilities for obtaining corn further south, every effort should be made to produce it in our own fields, and the idea of ripening it before the early frosts is most important—this is perhaps of more consequence than the mere abundance of the crop, attended with the usual uncertainty of ripening before the frosts of early autumn.

The Committee regret that they were restricted to the small sum of ten dollars for gratuities. Being so limited, however,

they are compelled to restrict themselves to the following sums, among the different applicants, viz:

To Abel Burnham, of Essex, for thirteen kinds of seedling potatoes, the second year from the apple, the Committee recommend a gratuity of $1 25

To Luther Wait, of Ipswich, for ten kinds of potatoes, 1 00

To Joseph Farley, of Ipswich, for a specimen of onions raised with guano, also a specimen of radishes, and one of mangel wurtzel, 1 00

To Isaac Babson, of Beverly, for the corn referred to above, 1 00

To E. Dodge, of Wenham, for fine specimens of wheat, 50

To William R. Putnam, of Danvers, for a specimen of Carter potatoes, 25

To Perley King, of Danvers, for four marrow squashes, 25

To Thomas McMahon, of Ipswich, for a specimen of rye which produced 49¼ bushels from 1¼ acre and 25 roads of land, 25

To Livermore Dodge, of Wenham, for four squashes, (three fine ones being on one vine,) 25

To Thomas Pierce, Ipswich, for a specimen of peppers, 25

To Francis H. Wade, Ipswich, three kinds of tomatoes, 25

To William R. Morrison, for a specimen of broom corn, 25

To Jesse Sheldon, of Beverly, for a specimen of melons, 25

To M. H. Lord, of Ipswich, specimen of squashes, 25

To Parker Barnes, of Dorchester, a vegetable of the gourd kind, called Hercules's Club, four feet long, 25

To Andrew Dodge, of Wenham, marrow squashes, 25

To the same, for water melon, 25

To Adam Nesmith, of Beverly, early corn, and a mammoth cucumber, 25

To Ephraim Annable, specimen of corn, 25

To Thomas Haskell, of Gloucester, mangel wurtzel, and a squash, 25

To John Hammond, of Beverly, specimen of Jeffersonian corn, 25

To the same, for blood beets, of turnip kind, 25

To John Choate, of Essex, for mangel wurtzel, 25

To John M. Ives, of Salem, for orange flesh cantelope, 25
To Ebenezer Lord, of Ipswich, for specimen of the chestnut, 25

For the Committee,

D. CHOATE.

Ipswich, Sept. 24th, 1845.

EDWIN M. STONE'S STATEMENT.

To the Committee on Vegetables:

GENTLEMEN,—The accompanying twelve ears of corn, of the twelve and eight rowed kind, I gathered from the field on Tuesday last week, (16th Sept.) They are a fair sample of an acre and two thirds, cultivated by a neighbor, Mr. Isaac Babson, which was in proper condition to harvest last week. The corn was in silk on the 28th June, and the stalks were *fit* to cut 18th August, and were cut 25th of that month. Mr. Babson has planted this variety several years, and has uniformly obtained fifty bushels to the acre. He thinks his field will yield at that rate the present season. He plants four feet apart each way, and manures in the hill. The *weight* of this corn, when in order for grinding, has been found, upon trial, to be *sixty pounds* to the bushel, or *three thousand pounds* to the acre. My principal object in procuring and presenting these samples, is to afford a *practical* demonstration of what farmers, with a little pains, may do, to bring their corn to early maturity. Mr. Babson's practice has been for a number of years, to select his seed, *in the field*, from the fairest and most forward ears; and the *result* is, that his corn ripens a *fortnight earlier* than it did when he commenced planting this kind. This, it seems to me, is an important fact, and if duly heeded by farmers generally, will place their corn crops beyond the reach of our earliest frosts, as well as the storms of October, which often beat down and soil the butt stalks.

Very respectfully yours,

EDWIN M. STONE.

Beverly, Sept. 24, 1845.

ON SUB-SOIL PLOUGHING.

The Committee on Sub-Soil Ploughing, REPORT :

That the only entry of sub-soil ploughs, was made by Mr. Benjamin Poore, of West Newbury, to whom the Society has been often indebted for contributions to its shows. He presented to the notice of the Committee, two sub-soil ploughs, of Ruggles, Nourse & Mason's manufacture, number one and medium size; one of Howard's and one of Prouty's new pattern. These were successfully tried with two yoke of oxen attached, and their working examined by your Committee. They all did the work of stirring the soil well, and the Committee will not attempt to decide on the relative merits of the respective ploughs on a trial necessarily very limited. They were inclined to think the double wing, attached to Howard's plough, an improvement, as giving a steady motion to the plough, without much increasing the draft. The farming interest is greatly indebted to these enterprising plough manufacturers, for offering them very good sub-soil ploughs at a moderate cost, in so short a time since the implement was first known in this country.

Farmers every where, who have tried sub-soil ploughing, concur in representing it as beneficial in draining wet lands, and in counteracting the effects of drought on dry soils; and your Committee believe its advantages will be made apparent to all who will make a trial of it. They recommend that the premium of ten dollars be awarded to Mr. Poore, as an acknowledgement of the service rendered by him to the farmers assembled at the Show, by presenting these different sub-soil ploughs for their inspection, and affording the opportunity of witnessing their operations, and thus endeavoring to introduce this valuable implement to more general use.

For the Committee,

J. H. DUNCAN.

Ipswich, Sept. 24, 1845.

ON DOMESTIC MANUFACTURES.

Your Committee having attended to the duties assigned them as fully as the length of time allowed them would permit, beg leave to submit the following REPORT:

The number of contributors of articles for the examination of your Committee was one hundred and sixty, which, considering the unfavorable state of the weather, is very large, and shows the increasing interest the exhibitions of the society are awakening. The articles entered this season were more various than in former years, and your Committee are pleased to see that the *Mechanics* of our County are making exertions for and taking more advantage of, the exhibitions of our society than formerly.

Your Committee cannot avoid urging upon the attention of the society, the importance of adopting some measures to give more time for the arrangement and exhibition of articles in this department. It seems to us that much more practical advantage would be gained to the county at large, if a better opportunity could be given to the ladies to examine the improvements in the manufacture of the various articles exhibited; the examinations now are obliged to be made in so hurried and *crowded* a manner, that many give up the attempt to see the exhibition, rather than submit to the squeezing process attendant upon it under the present mode of management. Your Committee, if they have not done exact justice to all the different contributors, must plead the hurried manner in which they were obliged to act, and recommend to any who may feel dissatisfied, if such there be, to "*try again.*"

The following premiums and gratuities have been awarded.

PREMIUMS.

Mrs. John Pearson, Newbury, strip Carpet, 1st prem.	$5 00
Mrs. Jonathan Berry, Middleton, strip Carpet, 2d prem.	3 00
Mrs. Sarah G. Cook, Newburyport, Stair Carpet, 1st premium.	3 00
Mrs. Eliza Rowe. Rockport, Rug, 1st prem.	3 00

Mrs. Elizabeth R. Foster, Beverly, do 2d prem.	2 00
Miss R. M. Jacobs, Danvers, 6 prs Hose, (woven) 1st premium.	2 00
Mrs. A.H. Wildes, Ipswich, 18 pr do 1st prem.	1 00
Miss C. Flint, Salem, 12 pr do 2d prem.	1 00
Mrs. John Tuttle, Hamilton, wrought Quilt, 1st prem.	4 00
Mrs. Ab'm. Hammatt, Ipswich, wrought Quilt, &c. 2d premium,	2 00
Louisa A. Chapman, North Danvers, wrought Lace, 1st premium.	3 00
Elizabeth Caldwell, Ipswich, do 2d pr	2 00
Nathan Lakeman, S. Danvers, under 11 years of age, for best specimen of work	3 00
Sylvester Brown, Ipswich, do do age 7 years	2 00
Amos Gould, Wenham, best thick Boots, 1st prem.	3 00
George Dawson, Ipswich, Calf Boots 1st prem.	4 00
George McComb, Georgetown, calf Boots, 2d pr	2 00
Wm. S. Horner Georgetown, Brogans, 1st prem.	2 00
John H. Varrell, Ipswich, calf Shoes,	2 00

GRATUITIES.

J. and S. Peetfield, Ipswich, specimens of Hosiery,	5 00
Mrs John Tuttle, Hamilton, piece of Flannel,	2 00
Caroline R. Sawyer, S. Danvers, Blankets,	3 00
Hannah Jacobs, Danvers, aged 78, Frocking,	3 00
Mrs. Brown, Rowley, Hose,	1 00
Mrs Jacob Lowe, Ipswich, knit Gloves,	50
Isaac Bartlett, jr. Newburyport, ladies gaiter Shoes,	1 00
James M. Martin, Salem, Horse Collar,	1 00
Joseph H. Caldwell, Ipswich, specimens of Leather	2 00
Mary A. Chadwick, Danvers, Chair Covering,	50
Sarah S. Bradstreet, Beverly, 3 years old, child's Shoes,	50
Mary P. Smith, Manchester, wrought needle work,	50
Mary E. Ham, Beverly, aged 5 years, Hose,	50
Lydia W. Proctor, Danvers, aged 13, Chair Bottom,	50
Mrs. Jonathan Berry, Middleton, strip Carpet and Hose,	50
Miss Hannah Farley, Salem, Lamp Mats,	50

Mrs. P. Pilsbury, Andover. Hose,	50
Nancy T. Lovett, Beverly, Sampler,	50
Mrs. Sarah Kinsman, Ipswich, aged 63, very fine Yarn,	50
Mrs. Margaret Dodge, Salem, aged 71, Horse Net,	1 00
Daniel Ross, Ipswich, aged 88, Swift,	50
Lucy E. Treadwell, Ipswich, Travelling Bag,	50
Mrs. Eunice C. Cowles, Ipswich, do	50
Harvey Andrews, Ipswich, 2 Horse Shoes,	1 00
David Stiles, Jr., Middleton, Horse and Ox Shoes,	1 00
Wm. Smith, Ipswich, Horse Shoe,	25
Rebecca P. Jacobs, Danvers, Lamp Mats,	50
J. Herrick and Son, Gloucester, specimen, of Ink,	1 00
Lucy B. Dodge, Wenham, aged 14, Sampler,	25
Mrs. Millett, Salem, Lamp Mats, &c.	50
Wm. W. Hibbard, Ipswich, Apple Paring Machine,	50
Mrs. Joseph Perkins, Newbury, 2 prs Mittens,	25
Miss Frye, Salem, Lamp Mat,	50
Maria J. Crosby, Georgetown, Wrought Collars,	50
Sam'l Treadwell, Ipswich, Mahogany Chairs,	1 00
Stephen Stanwood, Ipswich, Alum Leather,	1 00
Geo. L. Hovey, do Artificial Flowers,	25
Mrs. Johanna West, Haverhill, aged 81, specimen Needle Work,	1 00
Martha Bray, Essex, aged 14, Needle Work,	1 00
Hannah A. Martin, Marblehead, 13, Cricket, &c.,	1 00
Elizabeth F. Roundy, Beverly, 14, Worsted Work,	50
Wm. S. Balch, Bradford, Girls' Boots,	50
Miss Lucy Smith, Ipswich, Lamp Mat, &c.	25
James F. Mann, Ipswich, Crickets,	1 00
Miss R. S. Ives, Salem, aged 15, Travelling Bag,	25
Miss Mary Ann Tennent, Newburyport, Bag and Purses,	50
George F. Little, Newbury, Spool Stand,	50
Rebecca R. Coburn, Ipswich, Bed Curtain and Shoes,	50
Mrs. James Carr, West Newbury, Table Cover,	2 00
Hannah Whittredge, Beverly, Needle Work,	25
Mrs. Burbank, Methuen, Embroidery,	50
George D. Varney, Newbury, Surveying Instrument,	5 00
Mayo G. Swift, Newburyport, Mineral Teeth and Dental Instruments,	2 00

Hannah A. Martin, Marblehead, aged 13, Table Cover,	2 00
Mrs. Payson, Rowley, Hose,	50
Mrs. H. Ross, Ipswich, aged 74, Lace,	50
Mrs. Elizabeth Lord, Ipswich, aged 84½, Lace,	50
Miss Lydia Ferson, Gloucester, Cap, Wrought Linen,	50
Nancy E. Richardson, Methuen, Lamp Mat and Chair Bottom,	3 00
Frances E. Lord, Beverly, Lamp Mat, &c.	25
S. D. Cheever, Danvers, Lamp Mat, &c.	50
Lydia B. Oliver, Lynn, Rug,	1 00
Abigail Staniford, Ipswich, Rug,	1 00
Mrs. Elizabeth Wait, Gloucester, Rug,	50
Mrs. E. Reynolds, Beverly, Rug,	1 00
Edith Woodbury, Beverly, Rug,	50
Sarah Lunt, Newbury, aged 67, Stair Carpet,	1 00
Abigail Lunt, Newbury, Stair Carpet,	1 00
Sarah S. Giles, Beverly, Rug,	50
Mrs. David Baker, Ipswich, Bed Quilt,	2 00
Elizabeth Curtis, Danvers, aged 10, Quilt,	1 00
Mrs. Mehitable Rust, Hamilton, Quilt,	1 00
Mrs. John H. Ross, Ipswich, Quilt,	1 00
Sarah E. Hodges, Salem, Silk Patch-work,	1 00
Lydia N. Dole, West Newbury, Quilt,	50
Mrs. D. C. Houghton, Newburyport, Counterpane,	1 00
Mrs. Mary O. Smith, Danvers, Braided Rug,	50
Miss Hannah H. Phillips, Marblehead, 13 Lamp Mats,	25
Miss Nancy H. Torr, Danvers, Travelling Bag,	25
Elizabeth F. Roundy, Beverly, Bag and Shoes,	50

ON MEADOW AND SWAMP LANDS.

JAMES MARSH'S STATEMENT.

To the Committee on Meadow and Swamp Lands :

GENTLEMEN,—The piece of reclaimed meadow, to which I ask the attention of the Committee, contains about four acres. A few years since it was considered worthless, not having been

manured for many years. A part was covered with bushes and stunted maples. In the winter of 1839, I cleared the wood and bushes from the part now improved. The sprouts have been kept down yearly. In August 1843, I hired an acre dug over and laid level, (the stumps and hassocks thrown back) for twenty dollars. Such of the small roots and hassocks as became dry, I burned; the others were carted off as soon as the meadow became frozen. I then covered it with a loamy gravel, one inch thick; five days labor of two men and a boy and two yoke of oxen. The work was done in the winter, when there was two feet of snow on the ground; too deep for other labor. I then applied a light dressing of maure, and sowed the grass seed, April 15th. The crop the first year was cut about the last of August, and yielded about one and a half tons. The present year the acre yielded three tons of hay of prime quality. I regret the combination of circumstances that prevented the Committee's seeing the crop while growing.

JAMES MARSH.

Danvers, Sept. 24th, 1845.

[NOTE. The above mentioned premises were not visited by the Committee, owing to the absence from the State, of the Chairman, at the time specified by Mr. Marsh for the visit.]

ON EXPERIMENTS ON MANURES.

The Committee on Experiments on Manures, REPORT:

That no claims for the premiums offered under this head, have been made; the terms of the offer being for "an exact and satisfactory experiment in the *application* as well as the preparation of manures." The only communication received is from Mr. David Wood, of Newbury, who, desirous of subserviug the interests of agriculture, has favored the Committee with a detailed statement of the materials used and the manner in which he caused them to be mixed, in his compost heap. Manure is the essential element in New England farming, and the question, How can I obtain the greatest quantity at the least expense? should interest every farmer. The cattle ordinarily kept on the farms in this vicinity, will not afford a sufficient supply of this essential requisite of good crops. How can this deficiency be supplied with the least outlay of money and labor? What materials are best adapted for compost, and how shall they be compounded? Mr. Wood's communication answers these questions by giving the manner in which he prepared a large quantity of excellent compost. The subject of composting manure should be kept constantly before the minds of farmers; and regarding Mr. Wood's suggestions as highly worthy of attention, we recommend that his letter be published in the Society's Transactions.

For the Committee, J. H. DUNCAN.

December 15, 1845.

DAVID WOOD'S STATEMENT.

To the Committee on Manures and Composts:

GENTLEMEN,—At the request of several practical agriculturists, I am induced to call your attention to a compost of manure, prepared on my farm during the present year.

The heap is composed of materials as at foot, and placed in layers of from six inches to a foot, according to the nature of

the materials. The heap has been saturated from time to time with ten hogsheads of soap boiler's lye, and two hogsheads of urine from my stable tank. The heap was commenced in August, 1844, and increased from time to time as the materials required removing, or at "odd jobs," when there was no other employment for my hands and team, and finished in December. It was, however, opened in January, (not having frozen on top during the whole winter,) at the earnest entreaty of a neighbor, whose horse had died and he wished the body interred.

The heap consists of,—

46 Loads of strong manure from the hog yard,
71 " salt meadow sods, from the banks of the Merrimack,
8 " loam, top soil where a road was formed,
5 " lime and hair from the tan pits,
6 " decayed chips from ship yard,
2 " anthracite coal ashes,
15 " potato vines,
2 " refuse sizing from steam factory,
2 Carcasses of horses, brought to the spot,
2 Hogsheads of urine from my stable tank,
10 " of soap boiler's lye, hauled from Newburyport.

The materials here used, with the exception of the manure from my stable, and five loads of matter from the tan yard, cost merely the labor of hauling. The heap was thrown over last week, for the first time, and upon opening, with the exception of about eighteen inches on the sides in thickness, which by reason of an uncommonly dry summer, were baked hard, it was found in a perfect mass of decomposition, of about the consistency of brick layers' mortar, emitting an odor so powerful that I observed those occupied in throwing it over, eager to keep to the windward.

Of the carcasses, nothing was to be seen but the bones; the potato vines had entirely rotted; the meadow sods were hardly to be distinguished from the stable manure; and nothing remained in the state in which it was placed there, save the *coal ashes*, which I shall hereafter esteem, in a compost heap, as of no more value than *so much sand.*

The sides of the heap were thrown into the centre, and the

whole well mixed and thrown into a compact heap, there to remain until next spring, when I intend to spread it on the land, plough it in, and plant with potatoes and corn.

Here I have a pile of 150 loads of powerful manure, at an expense of about fifty dollars, and of double the value to the land of manure for which I have paid heretofore two dollars per load, and hauled it from town.

I would earnestly recommend farmers to commence the compost heap rather than depend upon the towns for their supply of manure. A salt or fresh meadow is accessible to almost every farmer, and this alone, after lying exposed to the sun awhile and dried, then saturated with lye from the soap boilers', which any one can have about here *for the hauling*, makes a strong manure. The lye furnishes just the necessary materials to convert the meadow sods into an active manure, viz: potash. I consider a hogshead of lye of more value in a compost heap than two loads of stable manure.

Dr. Dana, in his Manual, says: "The value of spent lye has been tested for a series of years, and has shown its good effects on grass lands, for four or five years after its application."

Indeed so valuable is spent lye considered by Dr. Dana, as a manure, that he gives a receipt in his Manual, whereby the farmer may himself prepare it, should he live too remote from the soap boiler. In many towns in New England the lye is sold to the farmer as high as twenty-five cents per barrel; and one farmer writes me that he buys and hauls it eight miles to mix in his compost heaps. Yet, notwithstanding its fertilizing properties, thousands of hogsheads are allowed to flow in our gutters to the river, the citizen turning up his nose as he passes it, and the farmer crossing it with his team in pursuit of manure at two dollars per load, when he has meadows that need ditching at home, and materials all about him for a compost heap.

Louden, in his Encyclopedia of Agriculture, says, that the carcass of one dead horse will convert twenty tons of loam into a powerful manure; and yet how many carcasses are thrown into the Merrimac during the year, or suffered to remain in the pasture, food for birds of prey and infecting the air for miles around.

There are few farms in the county, the crops of which may not be doubled by the application of manure. Farmers all admit this; but then, say they, we cannot afford to pay the price that is demanded for manure.

Let them go to work in earnest and form their compost heaps; first cover a space sixteen by twenty feet with meadow sods one foot high; leave this to the action of the sun for a month or two; then saturate it with a hogshead or two of lye, spread six inches of stable manure on the top of this, and cover it with potato vines, chip manure, weeds, or meadow mud, saturate this as before with lye, next a layer of stable manure, and so on, till the heap is seven or eight feet high. Let it remain a year, and upon opening it, at the end of that period, my word for it the compost heap will not be neglected the next year.

DAVID WOOD,

Woodland, near Newburyport, Sept. 23, 1845.

LIST OF

PREMIUMS AND GRATUITIES

AWARDED IN 1845.

Milch Cows and Heifers.

Henry Creasy, Salem,	1st premium,		$10 00*
Warren Averill, Ipswich,	2d	do	6 00
William Williams, Rowley,	3d	do.	4 00
Robert Kimball, Ipswich,	gratuity,		†

Butter.

George W. Dodge, Wenham,	June butter,	1st	premium,		$10 00*
Benjamin T. Lane, Danvers,	"	"	2d	do.	8 00
Allen W. Dodge, Hamilton,	"	"	3d	do.	6 00
Warren Averill, Ipswich,	Sept. "	"	1st	do.	10 00*
George W. Dodge, Wenham,	" "	"	2d	do.	8 00
Daniel Putnam, Danvers,	" "	"	3d	do.	6 00

Ploughing, Double Teams.

Aaron Kinsman, Ipswich,	1st premium,		10 00
Joseph Goodrich, W. Newbury,	2d	do.	8 00
Benjamin Poore, W. Newbury,	3d	do.	6 00
Allen W. Dodge, Hamilton,	4th	do.	4 00
S. B. Swan, Danvers,	gratuity,		†
Thomas Low, Ipswich,	do.		†

Ploughing, Single Teams.

Joseph C. Putnam, Danvers,	1st premium,		8 00
James Putnam, Danvers,	2d	do.	6 00
Jonathan Berry, Jr., Middleton,	3d	do.	4 00
Charles Forster, Andover,	4th	do.	2 00

Ploughing, Horse Teams.

John Dore, Ipswich,	1st premium,		8 00
Seth Holden, Salem,	2d	do.	6 00
Philip Storm, Marblehead,	3d	do.	4 00

Subsoil Ploughing.

Benjamin Poore, West Newbury,	1st premium,	10 00

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*And Coleman's European Agriculture.
†Washington's Letters on Agriculture.

Working Oxen.

Jonathan Berry, Jr. Middleton,	1st premium,	10 00
S. B. Swan, Danvers,	2d do.	7 00
Josiah Low, Essex,	3d do.	5 00

Steers—3 years old.

David S. Caldwell, Newbury,	1st premium,	7 00
George Hodgdon, Ipswich,	2d do.	5 00

Steers—2 years old.

William Williams, Rowley,	1st premium,	6 00
Jedediah H. Barker, Andover,	2d do.	4 00

Steers—1 year old.

Jedediah H. Barker, Andover,	1st premium,	4 00
Ammi Smith, Ipswich,	2d do.	2 00

Fat Cattle.

Philip R. Rogers, Byfield,	2d premium,	8 00

Bulls.

John Dole, Rowley,	1st premium,	8 00
James D. Herrick, Methuen,	2d do.	6 00
Jesse Sheldon, Beverly,	3d do.	4 00
Nathaniel L. Ordway, Newbury,	gratuity,	†

Swine.

William Williams, Rowley,	boar,	1st premium,	5 00
Joseph Andrews, Essex,	"	2d do.	2 00
D. S. Caldwell, Newbury,	sow,	1st do.	5 00
Jacob Brown, Ipswich,	"	2d do.	3 00
William Williams, Rowley,	pigs,	1st do.	6 00
D. S. Caldwell, Newbury,	"	2d do.	3 00

Management of Farms.

Christopher Howe, Methuen,	1st premium,	25 00
Daniel P. King, Danvers,	2d do.	20 00
Jonas Holt, Andover,	gratuity	8 00

Reclaimed Meadow Land.

David Gray, Andover,	1st premium,	15 00*

Grain Crops.

Thomas McMahon, Ipswich,	rye, 1st premium,	8 00

Root Crops.

Paul P. Pilsbury, Andover,	ruta baga, 1st premium,	6 00

Nurseries of Fruit Trees.

Joshua H. Ordway, West Newbury,	1st premium,	10 00*
Ephraim Woods, Salem,	2d do.	10 00

Live Fences.

George Cogswell, Bradford,	1st premium,	20 00

*And Coleman's European Agriculture.
†Washington's Letters on Agriculture.

Fruits and Flowers.

Andrew Dodge,	gratuity,	1 00
J. S. Cabot,	do	1 00
James Peabody,	do	1 00
Ebenezer Rowe,	do	1 00
John M. Ives,	do	1 00
Moody Ordway,	do	75
Ezra Dodge,	do	75
A. J. Dodge,	do	75
Jos. L. Ober,	do	75
Amos French,	do	75
Abraham Lord,	do	50
F. H. Wade,	do	50
Jonathan Berry, jr.,	do	50
Joseph Farley,	do	50
John Tuttle,	do	50
Mrs M. C. Baker,	do	50
Thomas Pierce,	do	50
Josiah Caldwell,	do	50
Alfred Kimball,	do	50
David Lord,	do	50
George P. Wilkins,	do	50
William R. Putnam,	do	50
Charles W. Lord,	do	50
William Ives,	do	50
Jefferson Perry,	do	50
Israel Trask,	do	50
Joshua Buxton,	do	50
Benjamin Edwards,	do	50
Rebecca S. Ives,	do	25
A. Hammatt,	do	25
Eben Lord,	do	25
Joseph Horton,	do	25
James Manning,	do	25
Samuel Kinsman,	do	25
Oliver Bailey,	do	25
Alfred Kimball,	do	25
Wm. F. Wade,	do	25
F. H. Wade,	do	1 00
William Hall,	do	1 00
Mrs Richard Tenney,	do	1 00
Alfred Kimball,	do	50
Samuel Caldwell,	do	50
Hannah Baker,	do	50
Sarah Kent,	do	50
Hannah Peabody,	do	50
Mrs John A. Kimball,	do	50
A. Hammatt,	do	50
Mrs Morse,	do	50

Mrs George Spofford,	do	50
Andrew Dodge,	do	50
Daniel Lord,	do	50
Miss Lord,	do	50
Mrs Cleaves,	do	50

VEGETABLES.

Abel Burnham, Essex,	gratuity,	$1 25
Luther Wait, Ipswich,	do	1 00
Joseph Farley, jr., Ipswich,	do	1 00
Isaac Babson, Beverly,	do	1 00
Ezra Dodge, Wenham,	do	50
Wm. R. Putnam, Danvers,	do	25
Perley King, Danvers,	do	25
Thomas McMahon, Ipswich,	do	25
Livermore Dodge, Wenham,	do	25
Thomas Pierce, Ipswich,	do	25
Francis H. Wade, Ipswich,	do	25
Wm. R. Morrison, Ipswich,	do	25
Jesse Shelden, Beverly,	do	25
M. H. Lord, Ipswich,	do	25
Parker Barney, Dorchester,	do	25
Andrew Dodge, Wenham,	do	50
Adam Nesmith, Beverly,	do	25
Ephraim Annable,	do	25
Thomas Haskell, Gloucester,	do	25
John Hammond, Beverly,	do	50
John Choate, Essex,	do	25
John M. Ives, Salem,	do	25
Ebenezer Lord, Ipswich,	do	25

CARPETING.

Mrs. John Pearson, Newbury,	1st premium,	$5 00
Mrs. Jona. Berry, jr., Middleton,	2d do	3 00
Mrs. Sarah G. Cook, Newburyport,	(stair) 1st premium,	3 00
Sarah Lunt, Newbury,	gratuity,	1 00
Abigail Lunt, Newbury,	do	1 00

RUGS.

Mrs. Eliza Rowe, Rockport,	1st premium,	$3 00
Mrs. Elizabeth R. Foster, Beverly,	2d do.	2 00
Lydia B. Oliver, Lynn,	gratuity,	1 00
Abigail Staniford, Ipswich,	do	1 00
Mrs. Elizabeth Wait, Gloucester,	do	50
Mrs. E. Reynolds, Beverly,	do	1 00
Edith Woodbury, Beverly,	do	50
Sarah S. Giles, Beverly,	do	50
Mrs. Mary O. Smith, Danvers,	do	50

HOSE.

Miss R. M. Jacobs, Danvers,	1st premium,	$2 00
Mrs. A. H. Wildes, Ipswich,	2d do	1 00

Miss C. Flint, Salem,	2d premium	1 00
J. & S. Putfield, Ipswich.	gratuity,	5 00
Mrs. Brown, Rowley,	do	1 00
Mrs. P. Pilsbury, Andover,	do	50
Mrs. Payson, Rowley,	do	50

WROUGHT QUILTS.

Mrs. John Tuttle, Hamilton,	1st premium,	$4 00
Mrs. Abraham Hammatt, Ipswich,	2d do	2 00
Mrs. David Baker, Ipswich,	gratuity,	2 00
Mrs. Mehitable Rust, Hamilton,	do	1 00
Mrs. John H. Ross, Ipswich,	do	1 00
Lydia N. Dole, West Newbury,	do	50
Mrs. D. C. Houghton, Newburyport,	do	1 00

WROUGHT LACE.

Louisa A. Chapman, Danvers,	1st premium,	$3 00
Elizabeth Caldwell, Ipswich,	2d do	2 00
Mrs. Hannah Ross, Ipswich,	gratuity,	50
Mrs. Elizabeth Lord, Ipswich,	do	50

WROUGHT WORK BY CHILDREN.

Nathan Lakeman, Danvers,	1st premium,	$3 00
Sylvester Brown, Ipswich,	2d do	2 00
Mary E. Ham, Beverly,	gratuity,	50
Lydia W. Proctor, Danvers,	do	50
Nancy T. Lovett, Beverly,	do	50
Rebecca P. Jacobs, Danvers,	do	50
Lucy B. Dodge, Wenham,	do	25
Martha Bray, Essex,	do	1 00
Hannah A. Martin, Marblehead,	do	3 00
Annis Ives, Salem,	do	25
George F. Little, Newbury,	do	25
Nancy E. Richardson, Methuen,	do	3 00
S. D. Cheever, Danvers,	do	50
Elizabeth Curtis, Danvers,	do	1 00
Elizabeth F. Roundy, Beverly,	do	1 00
Hannah H. Phillips, Marblehead,	do	25

BOOTS AND SHOES.

Amos Gould, Wenham,	1st premium,	3 00
George Dawson, Ipswich,	1st do.	4 00
George McCombe, Georgetown,	2d do.	2 00
William S. Horner, Georgetown,	1st do.	2 00
John H. Varrell, Ipswich,	1st do.	2 00
William S. Balch, Bradford,	gratuity,	50

MISCELLANEOUS ARTICLES.

George D. Varney, Newbury,	gratuity,	5 00
Mayo G. Smith, Newburyport,	do.	2 00
Mrs John Tuttle, Hamilton,	do.	2 00
Caroline R. Sawyer, Danvers,	do.	3 00
Hannah Jacobs, Danvers,	do.	3 00

Mrs. Jacob Lowe, Ipswich,	gratuity,	50
Isaac Bartlet, jr., Newburyport,	do.	1 00
James M. Martin, Salem,	do.	1 00
Joseph H. Caldwell, Ipswich,	do.	2 00
Mary A. Chadwick, Danvers,	do.	50
Sarah S. Bradstreet, Beverly,	do.	50
Mary P. Smith, Manchester,	do.	50
Mrs. J. Berry, Middleton,	do.	50
Mrs. Hannah Farley, Salem,	do.	50
Mrs. Sarah Kinsman, Ipswich,	do.	50
Mrs. Margaret Dodge, Salem,	do.	1 00
Daniel Ross, Ipswich,	do.	50
Lucy E. Treadwell, Ipswich,	do.	50
Mrs. Eunice C. Cowles, Ipswich,	do.	50
Harvey Andrews, Ipswich,	do.	1 00
David Stiles, jr., Middleton,	do.	1 00
William Smith, Ipswich,	do.	25
T. Herrick & Sons, Gloucester,	do.	1 00
Mrs. Millet, Salem,	do.	50
Wm. W. Hibbard, Ipswich,	do.	50
Mrs. Joseph Perkins, Newbury,	do.	25
Mrs. Frye, Salem,	do.	50
Maria J. Crosby, Georgetown,	do.	50
Samuel Treadwell, Ipswich,	do.	1 00
Stephen Stanwood, Ipswich,	do.	1 00
George L. Hovey, Ipswich,	do.	25
Mrs. Johanna West, Haverhill,	do,	1 00
Miss Lucy Smith, Ipswich,	do.	25
James F. Mann, Ipswich,	do.	1 00
Mary Ann Tennent, Newburyport	do.	50
Rebecca R. Coburn, Ipswich,	do.	50
Mrs. James Carr, West Newbury,	do.	2 00
Hannah Whittredge, Beverly,	do.	25
Mrs. Burbank, Methuen,	do.	50
Mrs. Lydia Ferson, Gloucester,	do.	50
Frances E. Lord, Beverly,	do.	25
Sarah E. Hodges, Salem,	do.	1 00
Nancy H. Torr, Danvers,	do.	25
		$528 75

ALLEN W. DODGE, Secretary.

Hamilton, Dec. 15, 1845.

Dr. *William Sutton, Treasurer, in account with the Essex Agricultural Society,* *Cr.*

1844.		
Sept. 27.	To balance of former account,	273 70
October.	To Bank Dividends,	182 90
Dec. 7.	To State Bounty,	600 00
1845.		
February.	To Interest received on Notes Receivable,	214 10
March 11.	To amount received of Merchants Bank, proportion of Capital reduced,	300 00
April.	To Bank Dividends,	154 60
Sept.	To amount received of new Members,	15 00
	To Premiums unclaimed,	13 75
		$1754 05

1844.			
Sept. 27.	By Premiums and Gratuities, awarded by the Trustees	358 00	
Dec.		49 00	
			407 00
Nov.	By amount paid Mr. Dole by order of the Trustees,		1 00
1845.			
May 9.	By amount invested in ten Shares Commercial Bank, at 1¾ advance,		678 33
Sept. 1.	By amount invested in Note,		108 77
Sept. 27.	By Expenses, as follows :		
	Printing and Stationery,	175 00	
	Expenses of Exhibition,	117 87	
	Secretary's Salary,	50 00	
	Postage,	12	
			342 99
	By Cash on hand,		215 96
			$1754 05

FUNDS BELONGING TO THE SOCIETY.

16	Shares in Warren Bank,	cost	$1596 00
12	" " Exchange "	par	800 00
21	" " Commercial "	cost	1411 66
7	" " Mercantile "	par	790 00
6	" " Merchants "	"	300 00
5	" " Village "		500 00
3	" Salem "		300 00

6	Shares in Danvers Bank, cost,	571 25
12	" " Lynn M. "	660 00
	Notes receivable,	927 36
	Cash on hand, as above,	215 96
	Funds on hand in 1845,	7982 23
	" " " 1844,	7552 87
	Increase of funds,	$429 36

SALEM, September 23, 1846.

(E. E.) WILLIAM SUTTON, TREASURER.

SALEM, Dec. 11, 1845. We have examined the foregoing Account of the Treasurer, and find the same correctly cast and well vouched.

ASAHEL HUNTINGTON,
ROBERT S. DANIELS.

PREMIUMS OFFERED

BY THE

ESSEX AGRICULTURAL SOCIETY,

FOR

1846.

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1 MANAGEMENT OF FARMS.

For the most extensive, valuable and economical improvements in the cultivation and management of an entire farm, with all its appendages, within the last *five years*,

1st premium	- - - -	twenty-five dollars.
2d premium	- - - -	twenty dollars.
3d premium	- - - -	ten dollars.

☞ The Trustees have varied their statement of premiums offered for *entire farms*, in the hope of increasing the number of competitors. They have also determined to admit as competitors, all farms within the county, whether large or small, for which the *first premium* has not been awarded within *seven years*. A detailed statement of the management and produce will be expected by the 15th of November.

Notice of intention to claim these premiums must be given to the Secretary on or before the 20th of June.

The Committee will visit such farms as may be entered, in July and September.

2. DAIRY.

1. For the best produce of butter on any farm within the County of Essex, from the 1st of June to the 9th of July, inclusive, in the present year, a sample, not less than twenty-

five pounds, to be exhibited, with a particular statement of the number of cows, quantity of butter, method of making and preserving it, &c., &c.

1st premium - - - - - ten dollars.
2d premium - - - - - eight dollars.
3d premium - - - - - six dollars.
4th premium - - Coleman's European Agriculture.

2. For the best produce of butter on any farm within the County of Essex, in the four months next following the 20th of May, the present year, a sample of not less than twenty-five pounds to be exhibited—*quantity* as well as *quality* to be taken into view; with a full account of the manner of feeding the cows, and the general management of the milk and butter,

1st premium - - - - - ten dollars.
2d premium - - - - - eight dollars.
3d premium - - - - - six dollars.
4th premium - - Coleman's European Agriculture.

NOTE. It will be observed that these premiums are offered for the *best produce on the farms*, and not simply for the best specimen exhibited. Claimants will therefore be required to be particular in keeping an account, and preparing a statement of the entire produce, within the times mentioned.

3. TURNING IN CROPS AS A MANURE.

For the most satisfactory experiment of turning in crops as a manure, either *green or dry*, on not less than one acre of land, a detailed account of the whole process to be given in writing,

1st premium - - - - - ten dollars.
2d premium - - - - - five dollars.

4. FOREST TREES.

1. For the best plantation of either of the following species of forest trees, viz:—white oak, yellow oak, locust, birch, white ash, maple or walnut, not less than three years old, and not less than one thousand trees, twenty dollars.

2. For the best do. do. do. not less than six hundred trees, - - - - - ten dollars.

NOTE. For an explanation of these premiums, see remarks in former years.

5. IRRIGATION.

For the most satisfactory experiment for increasing the crops, upon not less than one acre of land, by irrigation, with a detailed account of the manner, expense, and benefits produced, - - - - - - twelve dollars.

For the second best - - - ten dollars.

6. IMPROVING WET MEADOW OR SWAMP LANDS.

For the best conducted experiment in reclaiming wet meadow or swamp lands, on not less than one acre, the course of management and the produce, &c., for a period of two years, at least, to be detailed, with a statement of all incidental expense, - - - - - - fifteen dollars.

For the second best - - - ten dollars.

For the third best - Coleman's European Agriculture.

7. PLOUGHING.

1. Double Teams. For the best performance in ploughing, at least one sixth of an acre, *seven* inches deep, ten dollars.

For the second best - - - eight dollars.

For the third best - - - - six dollars.

For the fourth best - - - four dollars.

2. Single Teams. For the best performance in ploughing, at least one eighth of an acre, *six* inches deep, eight dollars.

For the second best - - - six dollars.

For the third best - - - - four dollars.

For the fourth best - - - two dollars.

3. Horse Teams. For the best performance in ploughing, with horses - - - - - - eight dollars.

For the second best - - - six dollars.

For the third best - - - - four dollars

4. Sub-soil Ploughing. For the best performance in Subsoil ploughing, - - - - - ten dollars.

For the second best Coleman's European Agriculture.

Note. A team consisting of a horse and one pair of oxen will be considered a double team. No team or plough which has taken a premium of this Society will be entitled to another, except of a higher grade. The competitors for these premi-

ums, must be the owners of the team, and the same must be entered in the name of the owner. Those who intend to be competitors, must give notice to the Secretary, or his agent, on or before the Monday next previous to the Exhibition. Teams that come more than ten miles, will be fed the night previous to the exhibition, at the expense of the Society.

8. EXPERIMENTS IN SUB-SOIL PLOUGHING.

For the most satisfactory experiment on not less than one acre of land, of the effect of sub-soil ploughing, to be determined by the difference of the value of the crops raised on equal portions of equally manured land of equal quality, one half of which, having been sub-soil ploughed, the other half ploughed in the usual manner. Statements of the depth of ploughing in each instance, together with all the particulars of culture, required,

First premium, - - - -	ten dollars.
Second premium, - - -	eight dollars.

9. IMPROVEMENT OF AGRICULTURAL IMPLEMENTS.

To the person who shall exhibit at the show any new or improved agricultural implement, the invention being his own, which shall, in the opinion of the trustees, merit a reward, a premium shall be given, not exceeding ten dollars.

In all cases, proof must be given of the work done by the implement before it is exhibited, and of its having been used and approved by some practical farmer.

10. COMPARATIVE VALUE OF CROPS, AS FOOD FOR CATTLE.

1. For the most satisfactory experiment upon a stock of cattle, not less than four in number, in ascertaining the relative value of the different kinds of fodder used, with a statement in detail of the quantity and value of the same, as compared with English hay, the experiment to be made in the three winter months,

1st premium - - -	fifteen dollars.
2d premium - - -	ten dollars.

2. For the most satisfactory experiment, proving the comparative value of the crop of cultivated grasses, cut at different periods of their growth, whether they be worth more or less for feeding or fattening cattle, cut in the blossom, or when the seed is fully formed, or when fully ripe, taking into view the effect of cutting these grasses at the different periods above mentioned, on the land itself and on subsequent crops,

fifteen dollars.

These premiums are offered, to be paid whenever a meritorious claim is presented; and will be continued until awarded.

11. EXPERIMENTS ON MANURES.

1. For an exact and satisfactory experiment in the preparation and application of manures, either animal, vegetable or mineral,

1st premium - - - - fifteen dollars.
2d premium - - - ten dollars.
3d premium - - Coleman's European Agriculture.

12. CULTIVATION OF WHEAT, RYE, OATS, BARLEY, INDIAN CORN, &c.

1. For the best conducted experiment of *Wheat*, not less than twenty bushels to the acre, on not less than one acre, eight dollars.

2. For the best conducted experiment of *Rye*, not less than thirty bushels to the acre, on not less than one acre of land, eight dollars.

3. For the best conducted experiment of *Oats*, not less than fifty bushels to the acre, on not less than one acre of land, eight dollars.

4. For the best conducted experiment of *Barley*, not less than forty bushels to the acre, on not less than one acre of land, eight dollars.

5. For the best conducted experiment of *Indian Corn*, not less than eighty bushels to the acre, on not less than one acre of land, eight dollars.

6. For the best conducted experiment in raising a mixed crop of *Corn* and *Potatoes*, or mixed grain, and not less in

value than eighty bushels of corn, on not less than one acre of land, eight dollars.

7. For the best conducted experiment of *White Beans*, on not less than one half acre of land, eight dollars.

13. FATTENING CATTLE AND SWINE.

For the most satisfactory experiment in feeding cattle or swine, with a statement in detail, of the process and the result,

1st premium - - - - ten dollars.
2d premium - - - five dollars.

14. ROOT CULTURE.

For the best conducted experiment in raising Sugar Beets, six dollars.

For the best conducted experiment in raising Carrots, six dollars.

For the best conducted experiment in raising Ruta Baga, six dollars.

For the best conducted experiment in raising Mangel Wurtzel, six dollars.

For the best conducted experiment in raising Onions, six dollars.

Raised on not less than one half acre of land, and the quantity of the crops to be ascertained by weight.

☞ Claimants for all the above premiums, will be required to give a statement of the previous condition of the land, the comparative value of the land, the value of labor and manure applied, the produce, the manner of preparing the ground, the seed used, the harvesting, &c., including all the details in relation to the crops; the same to be forwarded to the Secretary, previous to the 15th of November.

15. ANIMALS

TO BE PRODUCED AT THE EXHIBITION, ON THURSDAY, OCTOBER 1ST, 1846.

TO BE ENTERED IN THE NAME OF THEIR PROPER OWNERS—WHO MUST HAVE HAD THEM SIX MONTHS BEFORE EXHIBITION.

For the best ox, fatted within the County, regard being had to the manner of feeding and the expense thereof, ten dollars.

For the second best, - - - eight dollars.
For the third best, - - - five dollars.

For the best bull, not less than one year old, on satisfactory assurance being given that he shall be kept for use in the County, at least nine months from the day of exhibition, eight dollars.
For the second best, - - - six dollars.
For the third best, - - - four dollars.

For the best milch cow, not less than three, nor more than ten years old, with satisfactory evidence as to the quantity and quality of her milk and the manner in which she has been fed, ten dollars.
For the second best, - - - seven dollars.
For the third best, - - - five dollars.
For the fourth best, Coleman's European Agriculture.

For the best heifer that has been in milk three months or more, with satisfactory evidence as to the quantity and quality of her milk, - - - - seven dollars.
For the second best, - - five dollars.

For the best pair of working oxen, not over seven years old, taking into view their size, power, and training, ten dollars.
For the second best, - - - seven dollars.
For the third best, - - - five dollars.
For the best pair of three year old steers, do. seven dollars.
For the second best, - - - five dollars.
For the best pair two year old steers, six dollars.
For the second best, - - - four dollars.
For the best pair of yearling steers, do. four dollars.
For the second best, - - - two dollars.
For the best boar, - - - five dollars.
For the second best, - - - two dollars.
For the best breeding sow, . - five dollars.
For the second best, - - - three dollars.

For the best litter of weaned pigs, not less than *four*, from two to six months old, - - - six dollars.
For the second best, - - - three dollars.

NOTE. In testing the power of working cattle, four years old, or more, the load is not to exceed *two tons;* under four years old, it is to be *one ton.*

16. FRUIT TREES.

For the best nursery of fruit trees, not less than five hundred in number, raised from the seed, and one or more years old from the bud or graft,

1st premium, - - - - ten dollars.
2d premium, - - - - eight dollars.
3d premium, - Washington's Letters on Agriculture.

For the best apple orchard, not less than seventy-five trees, which shall have been planted or set out since the year 1845, and shall be in the best thriving state in 1849,

1st premium, - - - - ten dollars.
2d premium, - - - eight dollars.
3d premium, - - - - four dollars.

For the best engrafted or budded pear trees, not less than twenty-five trees, set out since the year 1845, and in the best thriving state in the autumn of 1849,

1st premium, - - - - ten dollars.
2d premium, - - - five dollars.

For the best peach orchard, not less than fifty trees, set out since the year 1845, and which shall be in the best thriving state in the autum of 1847,

1st premium, - - - . ten dollars.
2d premium, - - - - five dollars.

17. CRANBERRIES.

For the best experiment on the cultivation of the cranberry, on not less than half an acre of land, the quantity, quality and expense of culture being taken into consideration, to be paid in 1847 and 1848, fifteen dollars.

18. DOMESTIC MANUFACTURES.

For the best piece of carpeting, a yard wide, and not less than twenty yards to be exhibited, - - five dollars.
For the second best do. - - - three dollars.
For the best piece of stair carpeting, not less than twenty yards to be exhibited, - - - - three dollars.
For the best straw or grass bonnet, - - five dollars.
For the second best do. - - - three dollars.

For the best wrought hearth rug, having regard both to the quality of the work and expense of the material, three dollars.
For the second best do. - - - two dollars.
For the best piece of woolen cloth, 7-8ths of a yard wide, and twenty yards in quantity, - - - five dollars.
For the second best do. - - - three dollars.
For the best piece of flannel, a yard wide, and twenty yards in quantity, - - - - - four dollars.
For the second best do. - - - two dollars.
For the best wrought woolen hose, not less than four pair, two dollars.
For the second best do. - - - one dollar.
For men's best half hose, not less than four pair, one dollar.
For the best silk hose, not less than three pair, two dollars.
For the best piece of linen cloth, not less than twenty yards, four dollars.
For the second best do. - - - two dollars.
For the best piece of linen diaper, not less than twenty yards, three dollars.
For the second best do. - - - two dollars.
For the best wrought counterpane, having regard to the quality and expense of the materials, - - - four dollars.
For the second best do. - - - two dollars.
For the best specimen of wrought lace, three dollars.
For the second best do. - - - two dollars.
For the best specimen of work performed by a child under twelve years of age, exhibiting industry and ingenuity, three dollars.
For the second best do. - - - two dollars.
For the best pair of thick boots, - - three dollars.
For the second best do. - - - two dollars.
For the best pair of calf-skin thin boots, - four dollars.
For the second best do. - - - two dollars.
For the best pair of thick brogan shoes, two dollars.
For the best pair of calf-skin shoes, - - two dollars.
For the best specimen of shell combs, not less than one dozen, five dollars.
For the best specimen of horn combs, not less than one dozen, three dollars.

And should other articles of domestic manufacture be exhibited, worthy of attention, a proper notice will be taken of them, and suit-

able gratuities awarded. The whole amount not to exceed one hundred dollars. *But no premium or gratuity will be awarded for any article manufactured previously to the last Exhibition of the Society.*

19. FRUITS AND FLOWERS.

Convenient rooms will be provided for the exhibition of fruits and flowers, and committees will be appointed to examine and report on such as may be presented. Whoever may present, is requested to furnish a minute in writing, of the name of the owner, and description of the article presented. The committees will be instructed to recommend such gratuities as the articles may seem to merit, not exceeding in amount the sum of thirty dollars by the committee on fruit; and seven copies of Washington's Letters on Agriculture, by the committee on flowers.

GENERAL REMARKS.

All claims for premiums, to be awarded on the day of exhibition, must be entered with the Secretary of the Society, or his agent, on or before 9 o'clock, A. M. of that day.

All other claims for premiums, must be handed or forwarded to the Secretary, in writing.

All premiums awarded, the payment of which is not demanded of the Treasurer within *one year* from the day of the exhibition, will be considered as given to increase the funds of the Society.

No animal or object for which a premium has heretofore been awarded by the Society, will be entitled to another premium, unless it be of a higher order, or for qualities different from those for which the former premiums were awarded.

No person will be entitled to receive a premium, unless he complies with the conditions on which the premiums are offered; and *gives notice as required,* of his intention to claim the same.

No *gratuities* will be awarded except for Domestic Manufactures, and for Fruits and Flowers.

In regard to all subjects for which premiums are offered, it is to be distinctly understood, that the Trustees reserve to themselves the right of judging of the QUALITY of the animal or article offered; and that no premiums will be awarded, unless the objects of them are of a decidedly SUPERIOR QUALITY. By order of the Trustees,

ALLEN W. DODGE, *Secretary.*

JANUARY, 1846.

OFFICERS OF THE SOCIETY,

CHOSEN SEPTEMBER 24, 1845.

JOHN W. PROCTOR, of Danvers, *President.*

DANIEL ADAMS, Jr., of Newbury,
SOLOMON LOW, " Boxford,
ASA T. NEWHALL, " Lynnfield,
ROYAL A. MERRIAM, " Topsfield,
} *Vice Presidents.*

WILLIAM SUTTON, of Salem, *Treasurer.*
ALLEN W. DODGE, of Hamilton, *Secretary.*

TRUSTEES.

Jedediah H. Barker,	Andover.	Joseph Kittredge,	Andover.
Andrew Nichols,	Danvers.	Wm. N. Cleaveland,	Topsfield.
Jeremiah Colman,	Newburyport.	Moses Newell,	W. Newbury.
George Hood,	Lynn.	Dean Robinson,	" "
Moses French,	E. Salisbury.	Asa Nelson,	Georgetown.
Andrew Dodge,	Wenham.	Jacob Brown,	Ipswich.
James H. Duncan,	Haverhill.	Hobart Clark,	Andover.
Nathaniel Felton,	Danvers.	Horace Ware,	Marblehead.
Nathan W. Hazen,	Andover.	Daniel P. King,	Danvers.
Joseph How,	Methuen.	Josiah Newhall,	Lynnfield.
Frederick Howes,	Salem.	John Marland,	Andover.
John M. Ives,	Salem.	John Northend,	Newbury.
Josiah Kimball,	Boxford,		

MEMBERS ADMITTED IN 1845.

Jonathan Merrill,	Methuen.	Daniel Pillsbury,	W. Newbury.
John D. Cross,	Ipswich.	Wingate Merrill,	Danvers.
William F. Wade, Jr.	"	George Creelman,	"
Alfred M. Farley,	"	Daniel T. Colman,	Newbury.
Abraham Hammatt,	"	J. H. Coggeshall,	Lynn.
James Manning,	"	John Alley, 3d,	"
George Cogswell,	Bradford.		

☞ Any citizen of the County may become a member of the Society by paying to the Treasurer three dollars. Members are not liable to any assessment.

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