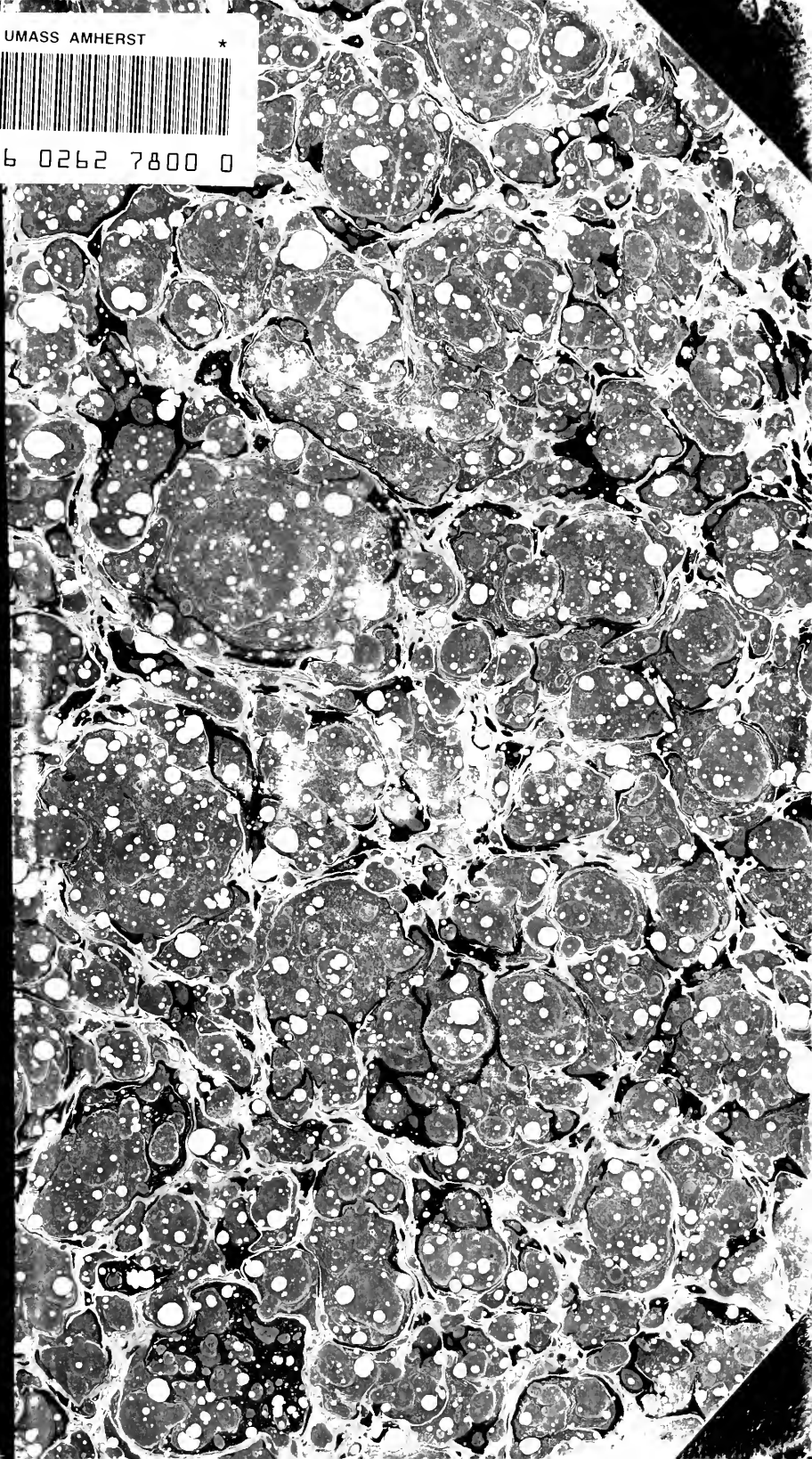


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ADDRESS

DELIVERED BEFORE THE

HAMPSHIRE AGRICULTURAL SOCIETY,

AT ITS

SECOND ANNUAL EXHIBITION

IN AMHERST, OCTOBER 22, 1851.

BY

MARSHALL P. WILDER,

PRESIDENT OF THE CENTRAL BOARD OF AGRICULTURE AND OF THE NORFOLK
AGRICULTURAL SOCIETY.

PUBLISHED BY THE SOCIETY.

AMHERST:
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1851.

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HAMPSHIRE AGRICULTURAL SOCIETY,
SECRETARY'S OFFICE, AMHERST, NOV. 19, 1851.

MY DEAR SIR:

I have the pleasure of transmitting a Vote of this Society, relative to your able and interesting Agricultural Address, delivered on the 22d of October.

VOTED, Unanimously, on motion of Hon. Edward Dickinson, that the thanks of the Hampshire Agricultural Society, be tendered to Hon. Marshall P. Wilder for his valuable Agricultural Address, on the occasion of this Society's Second Annual Cattle Show; and that the Secretary request a copy for the Press.

It is hoped, that the publication of your Address, in connection with the Society's transactions for 1851, may tend to promote Agriculture upon Scientific principles, and give fresh impulse to the movement in favor of a system of Agricultural Schools in Massachusetts.

Very Truly, Your friend
And Obedient Servent,
J. W. BOYDEN, Secretary.

HON. MARSHALL P. WILDER.

DORCHESTER, NOV. 24, 1851.

To James W. Boyden, Esq., Secretary of the Hampshire Agricultural Society.

DEAR SIR:

I have had the honor to receive your esteemed favor of the 19th inst., transmitting the Vote of the Hampshire Agricultural Society, and requesting a copy of my Address delivered before that Association at their late Anniversary.

The number and urgency of other duties, allowed me less opportunity to prepare for that occasion, than I desired, nor have I at present, time for a careful revision of the manuscript. Such as it is, I herewith submit to the disposal of the Society. If its publication will promote the cause of Agricultural science, as your note kindly intimated, or be useful to the farmers of Hampshire County, for whom it was specially written, I shall be abundantly rewarded.

With sentiments of sincere respect,

Your obedient servant,
MARSHALL P. WILDER.

ADDRESS.

“*Seed time and harvest shall not cease.*” This was a divine promise. But as a condition of its fulfilment we have from the same authority, the injunction given to man, “to till the ground from whence he was taken.” These are the declarations of Infinite Wisdom; and such the means which it has provided for the sustenance and prosperity of the human race. To whatever other pursuits labor may be directed, however it may be diversified in its application, yet on Agriculture, the primeval employment of man, must ever depend if we may trust the history of the past, not only the welfare of one individual or community, but of all arts and professions, yea, of the whole civilized world.

The advancement of Agriculture and of kindred pursuits is the worthy object of the Association whose anniversary we have met to celebrate.

Mr. President and Gentlemen of the Hampshire Agricultural Society:

I have consented to address you with some reluctance, partly on account of a pressure of other duties, and partly from a consciousness of my inability to instruct the intelligent yeomanry, or the professional gentlemen for which this County is so justly and extensively distinguished. It however affords me unfeigned pleasure to meet you, to participate in the privileges of the occasion, and to unite my humble testimony with yours, in favor of the industrial pursuits which your youthful and promising association is seeking to promote. It has recently entered the Agricultural family, but the favorable report which has already reached the other members thereof, awakens the most elevated expectations, and excites a fraternal affection, and lively interest in its welfare. You enter this school of improvement in advance, and at a peculiarly felicitous period. Not among the least of your advantages, is the fact, that you have a College in your midst, deservedly celebrated for the natural sciences, upon which Agriculture so essentially depends.

During the last half century, what surprising changes have taken

place in the arts of life; and in the progress of civilization! The same heavens indeed stretch out their blue expanse above us. Holyoke, Mount Tom, and all your beautiful hills stand to day, and will forever stand, in monumental grandeur, where the Great Architect first laid their firm foundations. The Connecticut rising from its original fountains, still rolls its placid waters through your fertile and luxuriant valley, emptying into the same ocean. But what, at sundry points, has so strangely diverted these waters from their ancient bed? Go with me to yonder rising manufacturing towns on its banks, and tell me what has thrown those barriers across its natural channel; and what bids them flow in artificial courses, subordinate to the will and service of man? Go with me to our other large manufacturing towns and cities, and tell me what has laid out those broad and beautiful streets, built those abodes of reduplicating thousands, erected those immense manufactories, those institutions for the intellectual, social and moral improvement of society? What means that hum of countless spindles, that perpetual clatter of looms, that everlasting buzz of machinery? Why that rumbling of cars freighted with the products of art and industry, which is to create trade through the length and breadth of our land, and to compete with other countries in the great commercial ports of the world? What has so suddenly made our beloved New England in arts and manufactories, the rival of her English mother?

What?—Labor guided by intelligence,—the application of science to the useful arts.

These, surely are not the results of accident. They are from the stamp of no Ajax' foot, from the stroke of no magicians wand, from the interposition of no miraculous power. No! they are, one and all, glorious illustrations of human capability, cöoperating with the benevolent design of the creator, and acting in perfect harmony with his natural laws. They are the conquest of mind over matter, the dominion of man over nature, the triumphs of thought expanded, strengthened, and enobled by education, the progress of art nurtured in the school of science.

But in these respects, the history of New England is only the history of the progress of improvement throughout our beloved Republic, and which sustained by Agriculture, give her a more absolute independence than Venice, Rome or Athens ever enjoyed, and which

bring her a larger revenue of glory, and secure for her a more enviable renown, than that which immortalized the Cæsars, Alexanders and Pharaohs of the world.

The improvement of the present age has so accelerated the action of society, that more business is now transacted in a single year, than was performed during the whole antediluvian period. For all the purposes of useful and benevolent action, a man of the present generation at fifty years of age, is older than any of the Patriarchs. For instance, what astonishing improvements have been made in manufactures, in the art of printing, in electro-magnetism, and in the application of steam to the great industrial pursuits of man. This subtle agent already drives our cars over the ten thousand miles of Rail Road, and when present contracts are completed, will compass ten thousand more. Despite wind and wave, storm and tide, it propels the thousands of steamboats which plough our navigable waters. It turns the machinery of the world. It gives new direction to energy and capital, brings distant places into proximity, and unites them together by bonds which no party animosity, no sectional prejudice, no vandal barbarity can ever sunder.

But in this progress of improvement, have our farmers moved "parri passu" with those engaged in other departments of industry?

If Agriculture has not advanced proportionally with other pursuits, the reason is evident. Science has but lately come to her aid, while she has long been laboring for the improvement of other arts; and in many instances, with most remarkable success. But we rejoice that her light begins to shine into the deep recesses of the earth, to reveal treasures hitherto undiscovered and to awaken sanguine hopes of future progress. These are strengthened by the valuable discoveries which she has already made, by the chemical analysis of soils, by prescriptions adapted to supply their deficient constituents, and by improvements in agricultural implements.

In the latter, witness the wonderful perfection to which mechanics have already brought the modern plough, the horse rake, the threshing machine, and other implements, the importance of which to the farmer cannot be overrated. What American does not feel a generous pride at the success with which many of these implements have been crowned at the general competition of the World's Fair? Especially in the triumph of our Plough and Reaping machines, distancing all competition, and turning even the ridicule of European

competitors into a universal burst of applause! Would that Agriculture had received similar aid from science in all her other departments! Something has indeed been done, and this encourages the expectation of still greater results.

If time permitted, we would speak at length of the mutual relation and dependence of the arts to one another, and of their confederation, which is as real as that between the different states of our beloved Union. We sometimes speak of the North and the South, the East and the West, as if they were dissimilar and independent; but in truth, they are only different members of the same body politic, warmed and nourished by the same vital blood, moved by the same vital energy, one in origin, one in inheritance and one in glorious destiny. It is a narrow and short sighted policy, unworthy of the descendants of the Puritans, unworthy of our age and country, which seeks the aggrandisement of one art or profession to the disparagement of others. Can the eye say to the hand I have no need of thee? or the head to the feet I have no need of you? "All are parts of one great whole." Is one in prosperity? All rejoice. Is one in adversity? All mourn. Hence he who plunges his fatal steel into the heart of one, lets off the life-blood of the rest. The manufactories of our country, far from destroying any of the arts of life, have raised hundreds of mechanics to competence or affluence, and thousands of farmers and their families, to plenty and independence. The same causes will work out similar results in all parts of our land.

But as we cannot dwell, on this occasion upon the other arts, we invite your special attention, *to the importance of Agriculture, and to the means and motives for its promotion.*

The importance of Agriculture, appears from its paternal relation to other employments. It is the central wheel of the great industrial machine. Accelerate or retard its motion, and you change the action of all the rest. Agriculture is industry's eldest child, the primary element of social organization, and the foundation of property, order and civil institutions. Twice in the history of the world, has the human race consisted of a single family conducting all the arts of life, and depending exclusively upon this primeval pursuit for support. In every period, its praises have been celebrated both in poetry and song. Scripture also abounds in illustrations and scenes from pasto-

ral life. The rewards of this art have blessed the past and its promises gild the future. It is the almoner of heaven's bounty, distributing to all with liberal hand. How has it converted the noxious bog and barren waste into highly cultivated fields, and made the dreary wilderness to bud and blossom like the rose! How have its benign influences illumined the dark abodes of want and misery! Oft has it fed the hungry, clothed the naked, and caused the desolate heart to shout for joy! How have its blessings clustered around the social fireside, making the domestic altar vocal with praise and thanksgiving!

Well did the muse of our lamented Fessenden sing:

"Hail Agriculture! Heaven ordained,
Of every art the source,
Which man has polished, life sustained,
Since time commenced his course.
Where waves thy wonder-working wand,
What splendid scenes disclose!
The blasted heath, the arid strand,
Out-bloom the gorgeous rose!"

Agriculture, as an Art, relates to the successful cultivation of the soil, to such care of the field and herd, as will enable the husbandman to realize the largest and most perfect products with the least labor and expense. The Science of Agriculture treats of the rationale of these processes, and of the principles which govern practice. In different localities and climates, the Art may vary, but Science is the same *here* and *everywhere*, *to-day* and *forever*, *immutable* like its Wise Author. Art may mistake, and give a particular soil the crop which its constituents disqualify it to produce. But Science never errs, for she understands the constituents of both, and therefore can decide upon the adaptation of one to the other.

The difference between them appears from the course that each would pursue in the examination of the soil.

Art regards its external appearance, and discovers its adaptation to a given crop, often by doubtful experiment, by traditionary knowledge, or by mere conjecture. Science adopts a different course. She takes a portion of that soil, and puts it in her crucible, and by analysis ascertains its constituents. She learns also the constituents of the desired crops and of manures, and by a comparison of these results decides at once upon their mutual adaptation, or what changes must be made to produce fertility.

Let us illustrate the importance of scientific knowledge to cultivation. A farmer in New Hampshire had heard of the value of peat as a manure. He applied a large quantity fresh from its native bed to his arable land, in expectation of an abundant harvest; but to his great disappointment the crop was an entire failure. Why? It contained a large percentage of sulphate of iron (copperas) fatal to his crops. To this, Chemistry would have applied Lime as an antidote, and thus converted the sulphate of iron, into the sulphate of lime, a deadly poison, into a substance, valuable to his soil and conducive to its fertility. Again, a sea captain who understood Neptune's dominions rather better than those of Ceres, purchased a farm in Massachusetts. He determined henceforth to plough old ocean's wave no more, but that he would enjoy comfort and tranquility in the evening of his life, in ploughing the soil. He had heard of the mistake of the New Hampshire farmer, and resolving to avoid it, rushed to the opposite extreme, and thought lime as a fertilizer must be valuable. Having four hundred loads of excellent barn-yard manure, he determined to make his debut in farming by turning it to the highest practical account. He therefore purchased two hundred casks of lime, and mixed it with the manure. At first, his expectations were raised to the highest pitch. He beheld his manure heap smoking like a coal-pit. Judge then of his disappointment when his scientific neighbors informed him that he had ruined the whole. The lime had disengaged the ammonia, and nearly destroyed the fertilizing properties of the mass. The facts to which we have referred, may be extreme cases, but many of similar character have fallen under our observation, all teaching us the dependence of art on science, and the connexion of these, is no where more intimate than in Agriculture.

We hear much said of the superior advantage of *practice* and *practical* knowledge. But we rejoice that the science of our day is eminently "*practical*." Here lies the great superiority of modern Chemistry, over ancient Alchemy. The former works for the farmer and facilitates the various processes of the useful arts; the latter occupied itself in the vain attempt to discover a universal elixir, and the philosopher's stone. Science will be to the farmer, what the safety lamp is to the miner, enabling him to explore the otherwise hidden treasures of mother earth, and to bring them up for the benefit of mankind; Aye, as the pole-star to the mariner, a sure guide to the haven of hope.

While then we pity the sons of our yeomanry, who look down with contempt upon a calling, which the All Wise and Infinite has honored before and above all others, we cannot withhold our commiseration from the men who deprecate "book farming," and denounce scientific improvements and discoveries. And here arises a question which we desire to commend especially to the yeomanry of Massachusetts. Why is it that after this subject has been faithfully presented, and the means put into the hands of our Legislators, they delay to make further appropriations for this most worthy object? After years of earnest pleading—after an associated Convention of fourteen Agricultural Societies, representing every district in the State, by delegates who are supposed to understand the relative claims of this great branch of human industry, and who unitedly and earnestly recommended the creation of a State Department of Agriculture, to watch over its interests as the Board of Education does over Common Schools—after the unanimous expression in favor of Agricultural Schools, to be supported partly by private munificence—and especially after the labors of your own indefatigable Hitchcock whose scientific knowledge and practical skill admirably qualified him to examine the subject, and who made a most able and satisfactory report to the Legislature, showing the great advantages of these institutions throughout Europe; why, after all this, did our wise Legislators withhold that governmental aid to which it is so justly entitled?

Well as I love the Old Bay State, and much as I would commend her Legislators, I cannot believe she has acted in this cause worthy of herself, or of that reputation for which she is so distinguished, in all that pertains to honor, philanthropy and virtue. And we doubt not, that she will soon enroll her name among those countries patronizing this worthy object.

We rejoice in the belief that the day is not distant when Agriculture, among all human pursuits, first in origin, and first in importance, will not be the last to receive the patronage of a free and enlightened Government. The remedy lies with the people; they must instruct their Representatives, or elect such as without instruction will not make the *first* object of legislation the *last*, or neglect it altogether.

Agriculture should be the first care of every well regulated Gov-

ernment, fully and honorably represented in all State and National councils. Let politicians debate and decide other questions as they may, here, interest and duty, patriotism and religion, all high and holy considerations require them to unite for its protection. Let them not be turned aside by the currents and counter currents, by the whirlwinds and tornados of party politics; on the contrary, may Agriculture ever be advanced by pure minded, honorable men, patriots, philanthropists and christians, who free from sectional jealousy and all selfish motives, shall seek in this as in other worthy objects the highest welfare of their fellow-men.

It might naturally be expected, that an art of such paramount importance to society, an art coeval with the origin of the human race, transmitted through past generations, destined to descend through the long vista of future ages, and yielding support to the myriad millions of all time, would long ago have reached its culminating point, and have received whatever aid science and legislation could bestow. But how different is the fact. Progress has indeed been made, yet experience hoary with age is to be systematised, and the deductions of science are still to furnish uniform rules for successful practice.

How a result so desirable is to be secured, and Agriculture made to occupy the position in the great family of arts, which the God of Nature assigned it, and what are the means to such an end, are our next objects of inquiry.

The chief of these is Scientific Education, an instrumentality powerful in its operation, certain in its results, and which should be accessible to all. The farmer needs something more than physical strength, and practical skill. If he would elevate himself and his calling; if he would rank with the Cobbetts, Tulls, Loudons, Johnstons, Liebegs, Thaers of Europe, or with our American Eliots, Pickerings, Lowells, Colmans, Plinneys, and other renowned Agriculturists, he must be a man of large and various learning; nor must he ever account his education finished, but be forever growing in experience and wisdom. Let us not be misunderstood, far be it from us to charge our intelligent and virtuous yeomanry, with any deficiency in natural endowments. We have always affirmed, and desire here to re-

peat, the contrary. Our farmers are among our most benevolent and patriotic citizens, ardently devoted to our free institutions, reliable for the support of the same, and for the preservation of our American Union. They are the ballast of our national ship, keeping her upright and steady amidst the winds and waves which agitate the political ocean, and as conservators of the Republic, they hold with unwavering hand the balance of political power. As a class, they have intelligence and talent, many of them possess genius which would improve and adorn any vocation or station in society. What they need, is a wise direction of their energies to their profession, and this it is the object of scientific education to furnish.

It is not the energy that wields the spade, guides the plane or reefs the sail, that is capable of demonstrating or improving these arts. It is a higher power, the culture of the mind; and this in Agriculture, as in every other pursuit, must ever go hand in hand with the culture of the soil. Such has been the relation of science to the progress of art, and such it will forever continue to be ;

“Survey the globe, through every zone,
From Lima to Japan,
In lineaments of light 'tis shown
That CULTURE makes the man.
All that man has, had, hopes, can have,
Past, promised, or possessed,
Are fruits which CULTURE gives or gave
At Industry's behest.”

The Science of Agriculture has been defined a knowledge of the principles which govern judicious cultivation ; but in truth it is an aggregation of sciences. A youth may soon learn the construction of a steam engine, the principles of its action, to take it apart and put it together, and to direct its fearful energy with his puny arm. But if its mechanism is to be improved, and its utility increased, greater attainments, original and independent thought are requisite. So in Agriculture, the farmer may soon learn sufficient of the natural sciences, to understand the common arts of cultivation, but their highest improvement requires a profound knowledge, not merely of one branch, but of many sciences, mutually related and reciprocally dependent.

That I speak advisedly when I say that scientific education must

teach the farmer the best arts of cultivation, will be evident to those who have attentively considered the splendid achievements which in other departments have resulted from the application of science to art. It has leveled our mountains, filled our vallies, dammed our rivers, bounded our lakes, and to old ocean's wave, repeats the fiat of the Almighty, "Hitherto, but no farther." Aye, it is fast circling the globe with ribs of iron and nerves of steel. We live in an age of wonders. Invention locks step with invention, and the improvement of to-day heralds a more remarkable one to-morrow. The press throws off its impressions with the rapidity of thought. The fire-horse, impatient of restraint, stands ready to convey these heralds of intelligence to the remotest hamlet in the land, and the mystic wire, as if reproaching the sluggish power of steam, threads its way to encompass the globe, and to force on with electric force, the progress, and the improvement of the age.

It is science and scientific knowledge which has secured these wonderful results, and it is on this that Agriculture must depend for similar improvements.

In confirmation of this opinion we cite a few facts of undoubted authority. We have been favored by a gentleman* of large attainments and celebrity in the various departments of science, with the results of the analysis of the soil of more than one hundred farms in the State of New Jersey. Some of these may not be uninteresting as felicitous illustrations of the advantages of science applied to Agriculture. He analyzed the soil of a field for J. J. Schofield, Morristown, on which he desired to raise ruta бага turnips. It was found deficient of the following constituents of that crop, phosphate of lime, potash, organic substances including a slight quantity of animal or nitrogenous matter. These being supplied the result was fourteen hundred bushel to the acre, as per certificate to the Legislature. He also analyzed the soil of a field for Dr. John Woodhull, which he had appropriated to the growth of wheat, and from which he obtained on the preceeding year less than fifteen bushels to the acre. After supplying the deficient constituents, he obtained the succeeding year fifty-seven bushels to the acre. Another instance was on the farm of Robert Rennie, certified to before the Committee of the Legislature, showing the great advantage of subsoiling and thorough cultivation.

*Professor Mapes.

It was discovered by chemical analysis that the surface soil was deficient in constituents which abounded in the subsoil. He prescribed subsoiling and a thorough mixture of the upper and lower soils. Some gentlemen who came to witness the operation, went away in disgust at the great depth of the ploughing, but the success of the experiment at length changed their disgust to admiration. The preceding crops were fifteen bushels of corn, and sixty bushels of potatoes to the acre; but the succeeding, one hundred and fifty bushels of *ears* of corn, and three hundred and fifty bushels of potatoes. Such facts have been obtained by other scientific men, both in America and Europe. They might be multiplied indefinitely. We have space for only one more.

A gentleman in Maryland, whose cornfield appeared to be in the last stages of consumption, yielding less than one bushel to the acre, applied to a distinguished chemist, who upon an analysis of the soil, discovered that it contained sufficient lime, potash, magnesia, and organic matter duly mixed with allumina and sand. One requisite for fertility only was wanting. This was phosphoric acid, which was supplied at an expense of ten dollars per acre, and the result was a crop of twenty-nine bushels of wheat to the acre.

Thus science teaches the secret of successful farming, the multiplication of products without the increasing expense of adding field to field; in other words, the importance of scientific cultivation, the economy of labor and capital, of small farms, but of large crops and profits. The truth is, in New England, where labor is expensive, there are but two kinds of farming which will pay. One is gathering the products which a kind Providence sends without cultivation; and the other, that which is guided by intelligence and science. No man can afford to cultivate a large farm poorly, nor to gather a small crop, when he might harvest a large one. What the poet says of other men is emphatically true of the farmer. "Act well thy part; there all the honor lies;" Aye, and in Agriculture, the profit lies there too.

Under a system of scientific cultivation, the agricultural products of this State might be doubled, without much additional expense, and of course her capital, and that of every farmer within her limits,—you would thus retain the enterprising sons of her yeomanry, on the farms of their fathers, those sons who now seek their fortunes in other professions and employments. In New England, there is land enough

and to spare. It appears from the recent report of the Valuation Committee of Massachusetts, that if forests be excluded, not more than one fourth of her remaining improvable territory is under cultivation. If the other three fourths were only as highly improved, her agricultural products would be quadrupled; but much of it is capable of higher cultivation, and of producing crops many times larger than the present amount. This would enable her to sustain a population of many millions.

Away then with the apprehension that New England cannot sustain, by her agricultural products, her swarming population! She may not only greatly multiply her present crops, but introduce other products equally important with any now under cultivation. What a vast amount of trade has resulted by the introduction of flax from Egypt, which by recent improvements in mechanical and chemical science, may yet become as important to the free labor of the North, as cotton is to the slave labor of the South! What an amount of commerce has been created by the introduction of the Mulberry from Eastern Asia into Europe, which gives employment to millions, and clothes other millions with their silken fabrics! By the introduction of the potato from South America, which has for ages fed the famishing millions of Ireland, and the partial loss of which within a few years, has produced starvation and misery in that ill-fated country, and such pecuniary loss and lamentation through the civilized world! By the introduction of wheat which gives immense wealth to the rising empire of the West, freights innumerable cars, and ships, and feeds millions in our own and in other countries.

Science has already improved our agricultural productions, and will continue to improve them. How much she has done for the potato. Compare the original, small, black and acrid, with our numerous fair, mealy, palatable varieties! How dissimilar in quality, flavor and size! Compare our luscious peaches, with the original species, the almond, tough, dry and bitter;—our magnificent apples with the sour crab;—our plum with the parent sloe! The Bartlett and the Seckle pear, the Green Gage plum, and the Baldwin apple, were produced from accidental seed; but science teaches how to obtain new and rare varieties, by hybridization, or crossing the existing varieties. This art depends on the sexual character of plants, which was developed by Linnæus one century ago, amidst that ridicule and scorn which

so often attach to discoveries, inventions, and new theories in our day. Our farmers are familiar with facts which develop the principles on which this art depends. They are aware of the necessity of keeping their varieties of corn, squashes, grains and fruits separate, lest they should intermix and produce, not each after its kind, but other sorts, unlike the original, sometimes as speckled as Jacob's cattle. But science alone can teach them how to turn this law of nature to the highest practical account; and how by it to produce new and valuable varieties, adapted to their particular location and climate.

By a corresponding law in the animal kingdom, we already have ornithologists, who pretend to breed fowls to order, in respect to size, plumage, and other qualities; and also among our experienced stock breeders, some who profess to breed domestic animals with similar exactness. Infinite Wisdom has fixed these laws and given us faculties to comprehend them, and they must be thoroughly understood before farming can be raised to its legitimate and rightful position. Witness an approximation towards this general result, in the improved breeds of our cattle, swine and horses, and in the endless number and variety of fruits and flowers, produced the last twenty-five years by artificial impregnation. Thus Mr. Knight, President of the London Horticultural Society, produced the Black Eagle and Elton Cherry, the Dunmore pear, and other new and valuable fruits, perfectly suited to that latitude; and this process is as applicable to the production of new grasses, grains, and vegetables, as to animals, flowers and fruits. This principle also teaches the art of raising the most valuable seeds, to avoid the immense annual loss of labor and money, from the use of that which either never germinates, or if it does, produces an inferior crop. Age, which improves some seeds, destroys others; and the art, and importance of procuring the best, are but imperfectly understood by most of our practical cultivators. We have room but for a single fact. An association of scientific cultivators exists within our knowledge, whose object is to raise seed for each other. The cabbage seed which they raise for themselves, they sell for ten dollars a pound, but that which is raised without this care, is sold for one dollar a pound; hence the former which is really the cheaper, will not pay a profit, because its superior worth is not understood by our farmers.

We cannot refrain from another suggestion which we deem equal-

ly important to the art of cultivation. We refer to the necessity and the utility of a proper division, and individualization of labor. The importance of this in other pursuits is generally admitted. It is not less necessary for the farmer. Some have already practised upon this principle with the greatest advantage. It has relieved those fears which many entertained, lest the farms in the vicinity of our large commercial cities, would be ruined by rail roads which have only changed the crops and arts of cultivation. They have induced the owners of those farms, to devote them to a single crop, or at most to a few products for which their soil was especially adapted, or which their proximity to the market rendered profitable. For instance, look at Westborough in this State, or many other towns in the vicinity of cities which formerly raised a great variety of crops, but which are now almost entirely devoted to the production of milk or vegetables. Other cultivators near the market have devoted their attention to the apple, the pear, the grape, the strawberry and other fruits, which they raise in great perfection, and with satisfactory profit; and from the exhibition of to-day, we see no reason why Hampshire County may not make the cultivation of fruit as profitable as any other branch of farming.

A gentleman of our acquaintance raises and sells annually in the market of one of our commercial cities, a large quantity of native grapes, at prices so satisfactory, as already to have induced in him a resolve to plant vineyards near all the principal cities of our country. The cultivation of foreign grapes is carried on extensively in the vicinity of Boston. One cultivator produces annually five thousand pounds; another four thousand, and the whole crop in that neighborhood is estimated at more than forty thousand pounds, or twenty tons. The fame of the domestic wine, manufactured from native grapes in the neighborhood of Cincinnati, is cö-extensive with the land. From the Secretary of the American Wine Growers Association, Dr. Warder, we have been favored with the following information. There are about one thousand acres now devoted to the culture of the grape for wine within twenty miles of that city. The profits are estimated at one hundred dollars to one hundred and fifty dollars per acre in a series of ten years,—the present crop at fifty to seventy-five thousand dollars annually; and the prospective crop, at one hundred to two hundred thousand dollars per annum. The worthy President of the Cincinnati Horticultural Society, writes us,

that the cultivation of the vine is no longer confined to that region ; but is extending with rapidity up and down the Ohio, and in the interior, and is attracting the attention of their most enterprising and intelligent citizens ; some in the hope that it will be the means of lessening intemperance, and in which hope I most sincerely concur.

A gentleman who makes the cultivation of the Strawberry his special business, raises on five eighths of an acre, more than three thousand boxes. These he sold by contract for the season, at twenty-five cents per box, or about twelve hundred dollars per acre. Who has not heard of Mr. Pell's apples ? This gentleman has an orchard of several thousand trees, consisting of two varieties, to which he has specially adapted his soil by scientific cultivation, most of which he ships to Liverpool and receives in return a very large sum. These are not chimeras of the imagination but incontrovertible facts, selected from a multitude, all bearing concurrent testimony to the utility of a proper division of labor, and a wise appropriation of soils to the crops for which they are best adapted. In other words, they prove the utility and indispensable necessity of a scientific education of farmers ; for all these arts of cultivation depend upon science, and of course progress in them must depend on scientific knowledge. This part of our subject is capable of the most varied and extensive illustration. For example, a farmer is to purchase a horse. How important for him to know what breed is best adapted to his purpose ; what are the characteristics of a good animal, and what food and treatment he requires. Suppose he is entirely ignorant of veterinary science, and his valuable beast is sick. He sends for a horse doctor, who doses dobbin with noxious drugs ; as usual the horse dies ; the farmer buries his favorite animal and pays the doctor's bill, all the while consoling himself that his loss must be ascribed to a mysterious Providence, rather than to the ignorance of the quack. Again he is to purchase a stock of cows. Is it of small importance to him to understand the traits of the various breeds, the marks of the best animals in each, and the adaptation of the same to his particular locality or purpose ? Some are best for beef ; others for milk ; the Durhams, for rich interval lands, and for the stall ; the Jerseys, for the peculiar richness of their milk, and the hardy Devons, for the short hilly pastures, and for the climate of New England ; some species are specially valuable for one purpose ; few, are equally good for all. Who cannot appreciate

the difference between the clean, smooth, small boned, beautifully formed, quiet and easily fatted Suffolk pig; and the long, pike-nosed, roached-backed, porcupine grunter, continually eating and squealing, but like Pharaoh's lean kine, never full? And why may not all of the swine in Massachusetts be of the former class? If they were, their worth would be increased twenty per cent, not to speak of the great saving in preparation for the market. In the fattening and growth of animals, most cultivators have noticed that cereal grains fit their cattle for the market sooner than the esculent; or that one kind of grain produces this result more readily than others. Nay, more, certain grains by one art of cultivation, will produce these results more effectually, than the same grain by another art.

Scientific education explains such facts. It teaches that the more oil food contains, the more fat will it produce; the more phosphate, the better it is suited to the growth of bone and muscle. This the fowls of the air understand. An English cultivator had two fields of wheat side by side, and to human appearance equally luxuriant and attractive, but the sagacious birds left the one which was fertilized with barn-yard manure, and destroyed the other which had been fed with guano. Why? Because it contained higher phosphated farinaceous matter. What instinct teaches the bird, education should teach the farmer; for that which rendered his crop more attractive to the bird, made it also more profitable for his own bread, and for the purpose of the baker.

But time forbids us to multiply illustrations of the farmer's need of a professional education. Give him this, put into his hand the means of knowledge, and by an economy of time and mental energy, his course will be onward and upward, towards that proud eminence which he ever ought to occupy. Give him this, and our most enterprising young men will no longer forsake the home of their childhood to seek their fortune in the city, and in the end to be driven back like Lot by the fiery storm that oft infests the place, to the country in poverty and disgrace. Give him this, and you turn the tide of emigration from the auriferous mines of California, to the more hopeful "diggings" of our native soil.

But where shall he obtain such education? We have no agricultural institutions, though they abound in other countries. It appears from the recent report of a distinguished member of your Soci-

ety, President Hitchcock, one of the agricultural Commissioners of Massachusetts, that there are in Europe three hundred and fifty two such institutions, several of which he visited, and all of which exert a powerful, and salutary influence, by the diffusion of intelligence, and by the elevation and improvement of this time honored art. In Republican France there are seventy-five institutions of this kind under Government patronage. To one of these she made an appropriation in 1849 of nearly half a million of dollars. Another has already graduated six hundred well educated agriculturists, who immediately found honorable and lucrative situations at the head of their profession. Monarchical Russia has sixty eight of these schools; some of which are of a high order, and superior to those in other lands; Ireland, down trodden, poor and miserable, has sixty-three of various grades, many of them of recent origin, all striving for the recusitation of her soil, and for her restoration to pristine wealth and prowess. The result is certain, she is destined to rise; aye, is already rising; for in many parts where sterility lately reigned, are now to be seen highly cultivated and productive fields.

One instance shall suffice. At the Glasnevin School, scholars by request came in from the field, and recited in a manner that would have been creditable to any New England College in those natural sciences upon which their practice depended, and their cultivation evinced their skill in the art. By a rotation of crops and other improved arts, founded on scientific principles, they were able to produce eighty bushels of oats, and seven hundred bushels of potatoes to the acre.

Such facts authorize the assertion that the regeneration of that ill-fated country is certain. Poverty and starvation, may drive from her shores thousands of her miserable peasantry, but a thriving and happy population will succeed them. It is coming. Scotland is already sending hither some of her intelligent and enterprising farmers. And can youthful America, the school of freedom and the home of enterprise,—the birth place of invention and genius—the land where every son is a king, and every daughter a queen, in her zeal for improvement, long behold these successful experiments and remain inactive? The existence of such institutions among us, is only a question of time. Massachusetts, New York, Ohio, and other states, are deliberating on the best mode of action. Foreign schools may not be congenial to our soil, but they will serve for models; they will prove

suggestive of such institutions as we need. If they have been successful in Europe, they will be much more so in this country, where all enjoy the advantage of common education, and where the institutions of the country, and every circumstance favor their success. No doubt can remain that greater benefit will result from them in the United States, than has ever been realized from almost any other appropriation of Government.

Congress appropriates annually fifty millions of dollars for current expenses, and occasionally large additional sums for special purposes, but she has not yet appropriated directly the first dollar for the advancement of Agriculture; for that art which our immortal Washington in his first message commended to her particular care; and yet since the publication of that memorable document, she has expended in war, and its preparations, more than five hundred millions of dollars; (and is not the art of preserving life as valuable as the art of destroying it?) But this policy is not long to continue. America will yet educate the sons of her yeomanry, for their favorite pursuits. Nor is this all, the daughters of our farmers, the future wives of those sons, must be educated; not only in refinements and accomplishments of polished society, but in the more solid and useful branches connected with rural life. They must be trained physically as well as intellectually, but on this point we cannot and we trust need not enlarge in this place.

Agricultural Societies and Exhibitions are another powerful means of improvement. Individual exertion can do something; associated action much more. Agricultural Papers and Periodicals have wrought wonders in the dissemination of knowledge. Where there was only one, ten years since, there are a dozen now, urged on in their noble cause by a generous rivalry and competition. Let no farmer deprive his son of the advantage of at least one paper devoted wholly or in part to Agriculture.

Much good is to be anticipated from the Society, whose Anniversary we this day celebrate. The individual exertion and enterprise necessary for its support evince a zeal and energy most hopeful to the cause and most honorable to those engaged in it. But man acts not alone in these worthy objects. Woman is still his help meet. We are happy to see here to day so many of the mothers and daughters of Old Hampshire. The action of woman in industrial occupa-

tions, is no new thing under the sun. We learn from the American Annals of 1753 that there was a Society, which celebrated its anniversary that year on Boston Common, where three hundred of the worthy matrons and maidens of that day, appeared each at her spinning wheel, and who were particularly addressed by the Rev. Dr. Cooper, then of Boston, and who was the orator of the day. But we have examples of greater antiquity. Homer, Theocritus and other classic writers, have celebrated in poetry and song the praises of woman in the industrial arts.

Ladies, your presence here to-day, is in imitation of those excellent examples, and though the distaff and spindle, and the hand loom have given place to the spinning jenny, and the patent loom; yet the beautiful and tasteful fabrics which your industry and skill have manufactured and placed on Exhibition, are proud testimonials of the progress which your sex have made in the useful and ornamental arts.

Mr. President and Gentlemen:

I have detained you too long. My only apology is the importance and extent of the subject which the occasion called me to discuss.

We have considered Agriculture both as an art, and as a science, its importance; its parental relation to other arts; its progress as dependent on the natural sciences, and the means and motives for its advancement. But we have only entered a field of vast extent, and glanced at a few of its most prominent objects.

Your extensive exhibition of various rare and valuable productions in Agriculture and the kindred arts, is an excellent testimonial that theory is here happily united with practice. By your appointment I have spoken; but you have furnished the best illustration of my argument in these productions of your industry and skill. This exhibition is most honorable to its contributors and especially to the officers and members of this Association who conceived the plan, and whose personal energy, liberality and patriotism have been so prominent in its execution. Yet this is but the harbinger of future good, the dawn of a brighter day; and though all may not live to see it, yet your children and your children's children will rejoice in its meridian light; yea, they will rise up and call you blessed when they shall have garnered the harvest of this sowing. Courage, then, in the glorious enterprise in which you have embarked! You act not alone; kindred hearts beat with yours, and kindred hands labor in the same cause.

Such associations are working out glorious results for our beloved country, the happiest land upon which the sun ever shone. They do not indeed restore man to Eden, but they make a Paradise of the land in which he dwells.

When I consider my country's vast extent of territory, her agricultural resources, her thriving arts and manufactories,—her rapid growth in intelligence, wealth and power,—the hundred millions of human beings who will inhabit her at the close of the present century; when I contrast all these, with the condition of the few feeble colonists who at first settled upon her soil, I can but exclaim,—truly this work is marvellous in our eyes; a little one has become a thousand, and a small one a great nation! On her depends, the destiny of the world. Responsible, glorious trust! If any angel fallen from heaven present to her the apple of discord, and invite her to eat that forbidden fruit, may she respond, Nay! Nay!! I have in charge *Life*, the LIFE of millions.

My country! Let the Eagle of thy liberty which so lately stood upon the cleft of thy Atlantic coast, but which stands to-day upon the lofty height of thy Rocky Mounts, stretching her broad wings from shore to shore, continue to shelter the happy millions of thy sons! And from those wings, from year to year, may her Eaglets fly to other lands, till the reign of universal freedom shall introduce a universal Jubilee. *O my Country! MY COUNTRY!!* Glorious prospects are before thee! Union, Wealth and Power; Intelligence, Virtue, and Immortal Renown!

REPORTS.

REPORT ON SUB-SOIL PLOUGHING AND MANURES.

Sub-soil Ploughing, has not, in this region as yet arrested the attention of farmers, as its importance deserves. The operation of the double-coultered plough;—called the *Michigan plough* in this country, but *Morton's plough* in Europe,—will, we hope, be the means of exciting more interest in the subject.

From the known downward tendencies of the Chairman of the Committee, the Society will not think it strange if he gets a little nearer to the rocks than the sub-soil plough reaches. He will, therefore, venture to suggest a mode of enriching land, to which he called the attention of farmers in his Final Report on the Geology of Massachusetts, but which probably has been forgotten. It is well known that some of the most valuable manures are soluble in water, and such, of course, are carried downwards through the soil as deep as the water penetrates. This will in a great measure descend till it meets with a stratum of hard pan, or clay, that is impervious to water, thence we may expect that the deposit lying immediately above such impervious stratum, will contain salts, valuable as manure, if brought to the surface. This has been proved by several facts, which are cited in the Report above alluded to, under the head of *Muck Sand*. (p. 107.) But the water bearing stratum, whether loam, or sand, may lie near the surface; and this may be one of the secrets of the good effects of sub-soil ploughing. In many cases this stratum may be recognized by the springs that issue from it in steep banks; and it may prove more valuable than even sub-soil ploughing.

On the subject of Compost Manures, two statements were received: one from Samuel Powers of Hadley, to which the Committee award the highest premium of ten dollars; and a second from Dr. David Rice of Leverett, to whom the Committee recommend a gratuity of six dollars. A third statement was presented by Dr. S. Fish of North Amherst; but it came too late; and we can only recommend to him to be earlier the next year.

EDWARD HITCHCOCK, *Chairman*.

STATEMENT OF SAMUEL POWERS.

To President E. Hitchcock, Chairman of the Committee on Compost Manures:

DEAR SIR:—I have during the last four years, been in the habit of using Compost Manure to a considerable extent, and from the expe-

rience that I have had in its application, and the results that have attended its use, I now think it far cheaper and equally as durable for a fertilizer, as the best animal manure. In 1847, I took from my peat swamp, the soil of which is composed of vegetable matter, that has been accumulating there for many years, about one hundred and twenty-five cart-loads of this peat, and mixed with it ashes, saltpetre, and plaster, in parts, equal to one hundred bushels ashes, one hundred pounds of saltpetre, and five hundred pounds plaster, for the whole lot. In the Spring of 1848, I carted this mixture upon a field adjoining, the soil of which is a fine deep loam capable of being enriched to any extent, and spread upon two acres fifty large loads of compost, harrowed it in and planted it with corn. Upon two acres adjoining, of precisely the same quality, forty loads of good yard manure were applied. The result was, the corn on both pieces was good, yet that on which the compost was used was more luxuriant from beginning to end, and produced some seventy-five bushels per acre. After harvesting the corn one acre of the land composted was sown to wheat, and the other acre to rye, both crops were good, the part sown to rye producing about twenty-five bushels, and the wheat twenty bushels. And had not the frost killed it out, it would probably have yielded thirty bushels. The rye sown on the two acres manured, produced twenty bushels per acre.

In 1850, I planted the same four acres again, adding ten loads of compost, making sixty loads for the two acres, and putting the same quantity of manure upon the other, it produced a very heavy crop of corn. After harvesting it, I sowed it again with wheat and rye, and produced as good a crop as before.

In the spring of 1851, I sowed grass seed and harrowed it in among the growing crop, and it now presents a very promising appearance. My object in experimenting upon these two pieces of land, has been to test the qualities of compost, and its utility in preserving the qualities of the soil, which has been done to my entire satisfaction, both parcels being raised from a low to a high state of cultivation, and can, I think, be mowed for several years to come with good success.

In conclusion, I would say, that my anticipations have been more than realized, both in regard to the productiveness of the land, and future prospects of the crops which are all in favor of composting, one important consideration of which is its cheapness. The cost not exceeding thirty three cents per load, on the lot, or about one third the expense of animal manure. My practice is to mix the compost one year, and use it the next. I have also applied it on several other parcels of land, with equal results. In 1849, I put fifteen loads of compost on one half an acre of land beside the same quantity of land on which was spread at the rate of twenty-nine large cart-loads of manure to the acre. The corn grown from the compost was the best and produced forty bushels. I also spread twenty loads on grass

as a top dressing, and experienced the same results. In 1851, I applied to one acre about forty loads of compost with nothing but plaster, to as good purpose as heretofore, for the growing of corn. Also thirty loads to another acre of corn, and procured about the same as when twenty loads of manure were used, side by side. In all cases where this compost has been used, not only has it produced good crops, but it has much improved the land, so that it is now in a good state of cultivation.

All of which is respectfully submitted.

SAMUEL POWERS.

Hadley, Oct. 20, 1851.

STATEMENT OF DAVID RICE.

To the Committee on Compost Manures:

GENTLEMAN:—I beg leave to present to you, the following statements, in regard to a Compost Manure that I have used and tested for several years. It recommends itself by several considerations which I will state in the end. I state in the outset, that the two great objects to be looked after in making manures, are *cheapness* and *strength*. A strong fertilizing manure, that *costs but little*, is what farmers most desire. The experiments that I have made, have not been on a large scale, but large enough for the deduction of facts, which I wish to state to the Committee.

Immediately after planting in the Spring, and after I have used what manure I want, I commence my compost heap for the next season. Into a convenient place which with me is a hollow in the angle of a bank wall, on the south end of my buildings, I deposit first a load of horse manure. Over this I usually spread the scrapings of my wood yard and cellar, especially in May, and all other refuse substances that will make manure, that I find about my buildings, such as the rakings of the yard and old leaves &c., making in all another small load. Over this I add a load of loam then over the whole I spread about a bushel of ashes. For the next three or four weeks this heap receives from the washroom, all the soap-suds, and washing water, and from the house all the useless slops, and washings of the kitchen, sweepings &c., being kept continually moist. In about four weeks after the first deposit, I add another load of horse manure, more loam and sand from the washings of road drains spread over the horse manure, and over all, a layer of wood ashes, occasionally adding more during the next four weeks. This heap for the succeed-

ing four weeks, receives as before, all the fertilizing substances that accumulate in the washroom and kitchen. This process is continued during the summer and fall, until snow covers the ground, and then I call my heap finished, only as it continues to receive during the winter the washings, slops, &c., from the house.

This manure I have usually applied to corn land but never expecting to make any written statement as to its fertilizing qualities I have not tested it as methodically as I otherwise should have done. I shall state however, that I have tried it by the side of good barn manure, and by the side of good hog yard manure, and that it produces a heavier growth of corn than either. I noticed particularly this season, that where I manured corn in the hill with my compost and hog yard manures, a load of each being deposited side by side, on equally good land, that corn grown over the compost manure was the most vigorous, darker colored, and produced quite as large a crop in harvest time, as that grown over the hog-yard manure.

I have tried it also in the hill for potatoes and find it fully equal to the best hog-yard manure. I claim for this manure the following advantages :

First it is *cheap*. Horse manure *alone* is a miserable fertilizer, and this excepting the wood ashes is the only substance of any value, that enters into the composition. Combined in the way stated, it helps to form a valuable manure. Loam and washings from the road side, cost nothing but the labor of getting them. All the refuse substances around the house, cellar and yard, are got rid of as nuisances and converted to a valuable purpose. The wood ashes lose nothing of their value combined in this way, but rather are rendered more useful by imparting their virtues to other substances, making a compost more fertilizing than ashes could be alone.

Again, as a matter of cleanness and convenience, this compost heap is of great advantage. How often do we see around farm houses and farm yards, accumulations of substances rendering the premises filthy and unsightly. The compost heap receives all these otherwise useless accumulations and greedily drinks in all the slops and washings from the kitchen and washroom, that otherwise would be forming dirty and offensive drains about the premises; but in this way, they are fitly and economically disposed of.

With the best wishes for the prosperity of the Hampshire Agricultural Society, I submit these statements to your consideration, and subscribe myself,

Yours, truly,

DAVID RICE.

PRES. EDWARD HITCHCOCK,
EZRA INGRAM,
LINUS GREEN.

REPORT ON RECLAIMED MEADOW LANDS.

The Committee of the Hampshire Agricultural Society on "Reclaimed Meadow Land," in examining five tracts in Hadley, Amherst and Belchertown, have had their attention called to the importance of this subject generally in its bearing upon the Agricultural interest of this and of other counties in the Commonwealth. In the history of the settlement and early growth of the Towns in Massachusetts, as in the other States, the settlers brought into cultivation those portions only of the forest-land which they could subdue with the greatest ease and which would yield the quickest and largest returns; while those portions which required great expense and labor to be brought under cultivation, and which would yield returns of profitable crops but slowly, were suffered to remain wholly unimproved, or were partially reclaimed, so far that they would yield some pasture, or some coarse grass for the scythe.

This mode of procedure might answer well enough while there was an abundance of good land easily reclaimed, while the population was sparse and the consumers comparatively few. But as the population increases, and the demand for Agricultural products increases with the increased number of the consumers, the producers must change their mode in this respect, and must put under cultivation a greater amount of fertile land in order to meet that demand.

Now it is well known to those who have taken into consideration the unimproved land in the several counties in the State, amounting by the returns in the aggregate to seven hundred and fifteen thousand two hundred and ninety-four acres, that a very large part of this land, amounting by the same returns, to four hundred and fifty seven thousand two hundred and sixty-five acres grown up to wood and bushes, or under the dominion of water, might be reclaimed and made productive.

Some land of this character has indeed been partially reclaimed; but trees and bushes, roots and stumps, stones in place and out of place, obstruct the scythe and the rake. The ground is too wet and soft for the plough and even for the cart. The grass is of but little value for the purpose of nutrition, and if mowed, is used chiefly for litter.

But there are extensive tracts of low land in a still worse condition, covered with sedge and brakes, bogs and moss, or so tangled with bushes and trees, that as one remarked to the committee, a "grey rabbit could not find his way through it." Here gad-flies and bottle-flies, mosquitoes and midges have their native home. Here frogs and lizards, the water-snake and it may be the copper-head have their haunts. From it evaporation chills the neighborhood, and malaria generates disease and death. You step on it and it quakes beneath

your feet; and it makes you quake in turn, lest you should be "swallowed up quick." It is a land at once under the primal curse of briars and "thorns and thistles," and under the second curse of a "flood of water," imaging to a mind like Milton's a portion of the infernal world described by him as "fens, bogs, dens and shades of death." Can land like this be redeemed from this double curse?

For land in this condition the true remedies are DRAINING, and PLOUGHING. The first is essential to the second. The second is essential to success as to the object aimed at in the process of reclamation. Beside the spade and the plough, the ax often has an important office to perform in clearing off wood and bushes.

The first thing to be aimed at is to get rid of the water. It is true that a certain amount of water is necessary for the germination and the subsequent growth of plants, both as the medium of aliment and as itself furnishing certain elements which enter into their composition. But an excess of water operates as injuriously on the fertility of land as does the excess of dryness. And it is as important that the one should be corrected by draining as it is that the other should be corrected by irrigation. Whether the excess of water is on the surface, or on the subsoil, or issues from strata cropping out, draining, either from the surface, or from the subsoil, or from strata sending forth springs as at the bottom of hills, is the pioneer process for other improvements.

The land requiring to be drained is not unfrequently found to contain largely those elements which enter into the composition of valuable vegetable products. It often happens that the finer parts of the soil are washed down from the hills. It often happens too that from the falling leaves and the annual decay of vegetation, there has been an immense accumulation of vegetable matter on the surface, which, by proper means, can be decomposed and thus be prepared to enter into other crops whether roots, grains, fruits, or grasses. For ages the work of saving has been going on. By the exclusion of air, by a low temperature, by preservative qualities in the water or soil perhaps, Providence with prescient care has laid by for future use these immense stores of vegetable matter in the form of peat for the nourishment of future plants: just as Providence has also laid by immense stores of vegetable matter in the form of coal, for the future use of man. In this way nature has hoarded up treasures of untold value for those and those only who know how to use them. And the fertility thus imparted to the soil will be permanent. At least the period in the future in which it will continue to be fertile may be commensurate with the period during which nature has been preparing the elements of its fertility.

It is true that in this preserved organic state, it is unfit for nourishing plants. But take a cart-load of it from its place, while in this state in which can be seen the texture of the leaves, the grain of the wood, the cortical layers, the stalks and stems and fibres of plants like

the sedges and grasses, and expose it on high ground to the heat of the sun, and to the drying winds, and to frost and rain; turn it over occasionally with a shovel, mingle with it half a dozen bushels of good animal manure. And to furnish the requisite earthy or saline matter in which it may be deficient, lime it, or ash it, or marl it, or clay it, or gravel it, or sand it, or loam it. Under this process it loses its organic character and becomes adapted to the support of plants. What is true of a cart-load of this vegetable matter, is true of the whole mass in the meadow from which it was taken. By draining, by turning up to the sun, by the action of the air, of frost, and rain, by the addition of saline or earthy matter, by the use of the plough, the harrow and the hoe, by the addition of a small amount of appropriate manure, it becomes to some depth decomposed, and exceedingly well adapted to the support of vegetation. *Its character is changed by this process from an organic into inorganic state, from barrenness into fertility.*

Besides changing the condition of the soil, this process increases *ease of cultivation*. The plough, the cultivator, the harrow, the hoe, the rake which were impeded in their use before a thorough process was commenced upon land partially reclaimed and while it was in progress can, after it is completed, perform their office with comparative ease. The work can not only be well done, but can be done at a less expense of force and time. The productive area of the farm is increased. Even if the redeemed meadow land should continue to be too wet for wheat and Indian corn, it will, by an abundant production of hay, leave the other parts of the farm at liberty for the production of such crops.

This process improves the *quality of the production*. It changes aquatic plants and coarse grasses into land plants and fine grasses, just as surely as it changes aquatic animals like the frog and the water-rat for other animals like the horse and the sheep. Aquatic plants with the exception of rice, which cannot be cultivated in our climate, are inferior to land plants. It not only changes the kind but improves the quality of the same kind, in accordance with the general law that vegetable productions take their character from the soil, whether they are grapes or grass or peaches or wheat.

This process of thoroughly draining land by *removing stagnant water* which contains no carbonic acid for the nourishment of plants, allows rain and running water which contain this important ingredient, to have access to the roots to nourish them, allows the air also to find its way to the manure in the soil, to decompose it and make it soluble and thus prepare it to enter into the composition of the growing crop. Thus too by the withdrawal of water the ground is often left porous for the free range of the roots in search of pasture, and gives them food that is not too much diluted. The farmer should constantly remember that stagnant water is not invigorating to a man or to a vegetable in comparison with rain or running water, even though they are both thirsty.

This process moreover *raises the temperature of the soil and of the air around*, and in this way produces the rapid growth of plants and their full maturity. You can be convinced of this by putting a thermometer a few inches below the surface in soil charged with water and compare it with another soil, or by consulting your own sensations, or a floral calendar. Evaporation, a cooling process, is prevented by the withdrawal of water from the soil, and thus the temperature of the soil itself and of the air which passes over it is raised so much as to hasten the ripening and thereby accomplish the saving of the crop, not only on the land itself, but also on that which is adjacent. This is a change equivalent to a change of latitude. This, in a northern climate like our own, especially in a northern exposure, is of the greatest consequence. Many a lost crop of Indian corn might have been saved.

This process favors the *hibernation and sleep of plants* which is essential to their health and growth. Plants in northern latitudes require sleep as the animal creation does. If certain plants are continually kept in a growing state they become feeble and short lived. You may see this in the transfer of northern trees like the apple-tree for instance, to southern climates where there is no winter, which as a matter of course degenerate. Now it happens sometimes in low lands that springs come up from below, or more frequently come out from the bottom of the hills on the margin of the meadows, at so high a temperature as to keep the grass in a green and growing state during the winter and thus produce a feeble growth in summer. Cut off the springs by what is called strata-draining, that is, by ditches at the bottom of the hills and near the margin of meadows, or by sub-soil draining, and you restore a vigorous growth to the plants.

This process carried out fully, favors the *efficacy of manure*. Besides producing a more rapid decomposition by the withdrawal of water, it prevents the manure from being present to the roots of plants in a form too dilute and reduced. This is important especially in respect to the salts like nitrate of potash and the liquid manures generally. To attempt to nourish plants by manures too much diluted by water, would be like feeding a man constantly upon only a thin broth, instead of solid nutriment.

This process carried out to its completion, is *favorable to health*. This is not only by preventing the dampness, and coldness which operate to produce bronchial affections and consumptions, but also by its preventing the formation of malaria, which generate intermittent fevers and bilious affections. Facts are abundant in confirmation of this position.

This process of reclaiming meadow land *gratifies the taste*. It transforms barrenness and deformity into flourishing beauty. It makes it blossom like the rose. So that as you pass by it adorned with its luxuriant summer growth, you are ready in the language of the prophet to say, "This land that was desolate has become like the garden of Eden."

This process of redeeming meadow land incidentally furnishes the means of *fertilizing other lands* which need an additional supply of those elements which are furnished by the peat-muck taken from the ditches. An illustration of this is furnished by a statement prepared by Mr. Samuel Powers of Hadley.

Many of these swamps owe the accumulation of vegetable matter to annual contributions from the uplands; and it seems but justice, that a part, at least, should be restored to the uplands to increase their fertility. This can advantageously be done by the formation of compost manure of which the basis is peat muck. Mr. Powers employs a large number of hogs to elaborate this muck into its proper condition. It is said that Dr. Franklin's negro on his return from England, said, "In England, ebery ting work, wind work, water work, steam work, dog work, oxen work, horses work. Ebery ting work but de hog. He has nothing to do but to walk about and be a gentleman." Mr. Powers with characteristic yankee ingenuity which turns every thing to some useful purpose, has taken the hog from the class born only to consume the fruits of the earth, and has taught him to labor for his living, and by mechanical and physiological appliances to assist in raising the corn which is to fatten him and enrich his owner. It ought to be added that Mr. Powers has been eminently successful in redeeming the land entered for the examination of the committee as the premiums bestowed in past years testify. He and each of the five have presented examples to the public of great value, which it is to be hoped will be followed. *Were the Society to appoint a committee whose duty it should be to learn what number of acres of lowland has been recently reclaimed, and what number of acres might be advantageously reclaimed in Hampshire county, and report to the Society, it would probably call the attention of the public to the subject, and encourage the practice of reclaiming meadow lands.*

And finally, the process of reclaiming meadow lands is *profitable*. In proof of this we rely upon the following statements.

In conclusion your Committee beg leave to say, that they have been exceedingly gratified in the examination of the several pieces of Meadow-land which were entered for the bounty of the Society. Of these there were five; two in the town of Hadley; two in Amherst; and one in Belchertown. In each and all we saw animating evidence of skill, perseverance, and success. In that success, whether you regard the change from deformity to beauty, from barrenness to fertility, from loss to profit; in that skill in the application of the rules of Agricultural art founded upon the principles of Agricultural science, we see a pledge and an earnest of similar improvements to be extensively adopted elsewhere in this vicinity by other intelligent farmers. A celebrated English satirist remarks, that the man who makes two blades of grass grow where one grew before, confers a greater benefit

upon mankind, than the whole race of mere politicians. He who reclaims meadow-land does more than this.

In distributing the premiums your committee were united in assigning the first premium of ten dollars to John Shipman of Hadley; and the second premium of six dollars to Leonard Barrett of Belchertown.

In behalf of the Committee,

WILLIAM C. FOWLER, *Chairman.*

Amherst, Oct. 20, 1851.

STATEMENT OF JOHN SHIPMAN.

To the Committee on reclaimed Meadow Land:

GENTLEMEN:—In conforming to the rules of the Hampshire Agricultural Society, I proceed to present to you my experience in reclaiming swamp land. Although more than twenty years have past away since I commenced, I will endeavor to give you as correct a statement as possible.

In April, 1825, I came into possession of fifty acres of swamp land with which I had been familiar from my earliest youth. Forty acres of this land is a peat swamp. Being perfectly level it had in some former years been covered with a large growth of timber, of Pine, Maple, Oak, &c., which had been destroyed by frequent burning. I well recollect fifty years ago it was literally covered with fallen decayed timber. At that time there were but few living trees and but little brush on the land. There grew annually rushes, or as it is called by some, bull grass, to the height of six or seven feet and very thick. This grass during Autumn and Winter, fell to the earth, and in Spring and often in mid-summer, the land was covered with water to the depth of two feet so that not a particle of the ground could be seen.

The land is situated about one mile north-east of Hadley. It is bounded on the east by a steep hill from which run large and numerous springs. At the time I bought the land it had grown up to brush and small wood. I did nothing towards draining it the first year.

In August, 1826, it being a very dry season, I commenced work with six men, and dug a drain north and south through the center six feet at the top, four feet at the bottom, and three and a half deep. As the lot was forty rods in width, I thought it best to have a large drain through the center. We then commenced on the outlet, which is about one mile to where it enters the Connecticut river; 160 rods of this was through higher ground. We had to go from six to ten feet in depth. It was a sandy loam very easy to shovel, but being

so deep it was an expensive job. We got a fall of three feet in the 160 rods. We then commenced at the foot of the hill to cut off the springs. Here we dug a drain three feet at the top, three feet deep and eighteen inches at the bottom with several cross drains three feet six inches deep, three feet in width at the top and eighteen inches at the bottom. The water passed off freely through all the drains and I felt confident of success.

In the next spring, 1827, as soon as the ground was bare of snow, but the frost not out, I went to view the ground. I found it worked well, beyond my expectation. The deep cut was partly filled with snow that had drifted in during the winter, yet the water passed freely under it. There was but little water in the drain that cut off the springs at the hill, there was no water on the surface of the land, and I was now quite sure of success. But there were difficulties to come that I did not then foresee. After the frost was out and the ground settled, I went to the lot expecting it was fit to plough, but I found I had built my works on the sand and they had fallen. The deep cut at the bottom was quicksand, the water had washed under the banks and when the frost came out, it caved in on both sides almost the whole length, 160 rods, filling up the ditch, leaving a vast chasm ten feet wide at the top, stopping the water which set back upon the land, completely covering forty acres so that not a particle of it could be seen. It now seemed as if the work must forever stop. As I stood and looked at the ruins, I thought the matter over whether it was best to turn the lake as it then was into a fish-pond and give up draining, or say as did David Crocket, "never give up but go ahead." I finally decided upon the latter and again went to work.

This time I did it thoroughly, carted off the dirt and spread it upon the land. About the 1st of June, 1828, the land became dry and we commenced ploughing. This required three men and four pair of cattle with a large plough which cut fourteen inches in depth. When digging the drain, we found large trees two to three feet in diameter under ground which were burnt to charcoal on the outside. In ploughing, these were a great hinderance. We ploughed about one half acre per day, getting out all the logs and roots. This team I kept on the land constantly in fair weather for four months. About one hundred days, in this time, they ploughed, dragged and cleared off the logs and roots from the remaining ten acres. Thirty acres I ploughed, the next season. I then sowed ten acres with rye, and two with wheat. Both grew well and there was as large a growth of straw as I have ever seen on any land, but both blasted and were nearly worthless. I have since that time tried rye, wheat and oats, in small lots, but am satisfied they cannot be grown on this land. I next sowed buckwheat with good success and followed with this eight years in succession. At this time I found the top of the land the depth ploughed, had greatly changed.

The peat was from two to eight feet in depth, and of a reddish color before exposed to the air, it had now to the depth ploughed become black and very fine.

I now began to think of changing the crop fearing it might exhaust the land if continued in buckwheat. I next planted broom-corn and potatoes, using five loads of compost manure to the acre in which I put one bushel of lime per load. From eight acres of corn, I had six hundred bushels, seventy-five bushels per acre. From ten acres of potatoes, twenty-five hundred bushels, or two hundred and fifty bushels per acre. The broomcorn was six hundred lbs. per acre. I have continued with the above crops for twelve years with good success, with one exception. In 1843, I had ten acres of potatoes. There came a heavy shower and some five or six loads of earth slid into the deep cut and flooded the land; the drain was soon cleared and the water off in less than twenty-four hours, but it spoiled the potatoes without doing any damage to the corn, or other crops. In 1849, I planted forty acres with potatoes and had ten thousand bushels. I set a small piece with tobacco four years in succession, it grew well every year: last season I set two acres which produced seventeen hundred lbs. per acre, this season I set fifteen acres which is better than the crop last season, on the above fifteen acres I put six loads of compost and eight bushels of lime per acre.

I now Sir, have given you a history of reclaiming the land, with the produce except the buckwheat, which was fifteen to twenty bushels per acre, average seven hundred bushels annually from forty acres.

I will now give you an account of the expense.

The wood paid for clearing the land.		
525 rods of drain at 37 1-2 cts. per rod,		\$195
160 " " at 40 " "		64
160 deep cut " at \$2 " "		320
Ploughing, draining &c., 40 acres at \$15 per acre,		600
Three years Interest before getting crops,		215
First cost of 50 acres at \$5,50 per acre,		275
		<hr/>
Total,		\$1669
The present worth of the land, 40 acres at \$150		
per acre,	\$6000	
10 acres at \$50 per acre,	500	
		<hr/>
		\$6500
		<hr/>
Net profit,		\$4831

If there is any error in the above account, it is in the present price of the land, as I might with safety add one thousand dollars more. I have been offered and can now take two hundred dollars per acre for twenty acres of the best of this land. There are hundreds, and I

may say thousands of acres in the county of Hampshire that may be reclaimed and would be the most productive lands we have.

J. SHIPMAN.

Hadley, Oct. 20, 1851.

STATEMENT OF LEONARD BARRETT.

To the Committee on Reclaimed Meadow Land :

GENTLEMEN:—According to my earliest recollections, the land was covered with bogs and a species of small low water brush. As long ago as I can recollect, my father used to mow the most of it and got nothing but the very poorest kind of bog-hay, and that we had to carry out to hard land by hand on poles, in most cases the ground being too soft to drive cattle across it.

But in process of time the grass mostly died out for want of draining and the bushes took its place. At the decease of my father some thirteen years since, it came into my possession, and I resolved, after hearing and seeing some experiments on similar ground, to try my fortune at improving it. Accordingly I commenced cutting the bushes and hired a drain dug the whole length of it about three feet wide and one foot in depth, and the spring following, burnt it over to kill the small bushes. But I found in one season that my drain was not sufficient, and I sunk it a foot lower, which I found to answer very well, although I have had to clean it out and widen it twice since. After lying in this condition two years, I commenced bogging. I first took a small piece and cut the whole surface over just low enough to smooth it and take all the bushes and bogs and piled them in heaps and carted off what I could get at, and burnt the remainder and sowed the ashes over the ground and then after raking it smooth, I sowed my grass seed consisting of red clover, white clover, herds grass and fowl-meadow, and raked it in.

I also tried bogging it deeper, turning the surface over and cultivating the bogs, and although this leaves a richer top, yet it takes a long time to subdue the weeds and wild grass in this way; and I find the better way after having ditched around a piece, to cut and turn over the surface late in the fall and let it lie until the next August or September, then, if possible, burn it as it lies, and sow your grass seed and rake it smooth; then in the spring following, give it a slight dressing of manure accompanied with a good portion of lime (slack) and plaster of Paris.

In this way I have brought this nearly useless land to bear two

large crops of the best quality of English hay a year, for the two years that I have had it under trial.

You will perceive, my dear Sir, that I have given you a very brief and imperfect sketch of my operation. And this I do that the very large number of men of small means like myself, who own such land, may be induced to commence reclaiming without delay.

LEONARD BARRETT.

Belchertown, Oct. 18, 1851.

ON AGRICULTURAL AND MECHANICAL IMPLEMENTS.

We have no occasion to boast of the mechanical ability of the Americans, inasmuch as the English have awarded us a good share of praise on this score, since witnessing our specimens in the useful arts at the Great Exhibition in London. We can construct the swiftest vessels for navigating the water, and the best implements for plowing and reaping on the land, the vanquished themselves being judges. The Brussels Carpeting of Massachusetts finds not its equal in all Europe: and this beautiful fabric is woven wholly by machinery; the loom of Mr. Bigelow requiring only an attendant, as every loom does, to rejoin the broken threads; while the same species of carpeting, as manufactured in other countries, employs the additional labor of a hand to draw and replace the wires which form the loops in the warp. Our countryman Hobbs, has picked the most ingenious and puzzling lock ever made in another country; and has also made a lock which none but an American is likely to pick. Our telegraphic machinery has no rival in the world, either in respect to *rapidity* of operation for transmitting intelligence, or *precision* for astronomical uses.

In articles of fancy, we pretend not to compete with all the older countries; and that for the excellent reason, that we are just setting out in life, and find it important to attend first to the necessary, the useful and the convenient. When we are well established, and have got things in operation to our mind, so that we can *live*, perhaps we shall try our hand at matters of ornament and luxury. But may the day be far distant, when the mechanical skill of our country shall be expended principally, or even largely, in ministering to self indulgence.

Your committee found an interesting collection of agricultural and mechanical implements presented for their inspection. The number of entries was twenty.

Messrs. J. R. Whittemore & Co. of Chicopee Falls, made an entry of 12 Plows, 2 Hay Cutters and an Iron Scraper, all of excellent

construction. Among the 12 Plows, were 9 varieties, differing in kind or size, as follows :

One Iron Beam Plow; one Improved, No. A.; one Improved Side Hill, No. A., 2; one Improved Side Hill, No. B. 1; one Improved No. 8; three Improved, No. 40; one Improved Eagle, No. 0; two Improved No. 3; one Improved, No. 50.

The Hay Cutters were two different patterns of a highly approved instrument, in which the knives are set upon a cylindrical surface, and bear another cylinder made of raw hide.

There was also a lot of Plows and one Cultivator, manufactured by Prouty & Mears, of Boston, who have established for themselves a wide reputation, by the variety and excellence of their agricultural implements. Besides a variety of other Plows exhibited by them, the Michigan Plow for sward land, deserves notice for its ingenious construction. It has two shares, one of which is elevated, and in advance of the other. This forward share slices off two or three inches of the turf and inverts it in the bottom of the preceding furrow, while the following share, which is much larger, and runs several inches deeper, cuts and crumbles a larger share of the lower earth, placing it on the top of the inverted sod, so as to give the field the appearance and the advantage of old plowed land without turf or weeds.

The committee examined with much interest, a Plow made by Messrs. Ruggles, Nourse, Mason & Co. of Boston and Worcester. It appears to have been planned with special reference to equalizing the force applied to each particle of the earth, from the moment of leaving its bed, to that of its being deposited by the mould-board. The share and mould-board are so formed as to give a uniform velocity of rotation to each portion of soil, till it is left at such an inclination as to be inverted by its weight. By thus accurately *grading* the motion of all the particles, the force necessary to draw the plow is very perceptibly diminished; a fact, the committee are informed, which has been established by experiments with the dynamometer.

A Corn and Seed Planter of very ingenious construction, was presented by Mr. Oliver Williams of Sunderland. It can be regulated to drop any desired quantity of seed at any given distances. It opens a drill, deposits the seed, strokes back the ridges to cover the seed, and then rolls down the earth as firmly as may be wished; and does the whole more thoroughly than it can be done without a machine, and so rapidly, that none who have used the article, will ever think of planting without it. It is abundantly recommended by those who have given it a trial.

An Instrument for cutting hay, straw, or stalks, was entered by Mr. Eli Warner. It has an appendage for regulating the feed, and appears like a substantial and well contrived article.

A Corn Sheller, entered by Frink & Co. of Amherst, is quite a

curiosity. Its construction is ingenious, and so far as the committee could judge, without seeing it used, is calculated to make clean work in uncovering cobs.

Messrs. Graves & Hatch of Leverett, presented a lot of garden Hoes, made in a superior manner and handsomely finished.

Eight different kinds of Planes, from the Tool Factory of Mr. James Kellogg of Amherst, received commendation for the excellence of their workmanship.

Mr. Porter Dickinson of Amherst, offered a lot of Hammers; Daniel Purington of Pelham, some Saw and Plane Handles; H. Grey of Pelham, three wooden Clamps; Amos Rugg of Montague, a lot of Rakes; A. L. Wellman of Amherst, a lot of Horse Shoes, and J. H. Derver of Belchertown, a Tue-iron, all of good construction.

From the Mill of Messrs. Joseph Adams & Sons of Hadley, was presented a lot of specimens of sawing, turning and curve planing, the work of good machinery.

E. Bogue of Amherst, exhibited a Perambulator, a neat and ingenious contrivance for determining the distance traveled by a carriage. Such an article, secretly attached to the vehicles, which go daily from our livery stables, might sometimes tell *more* truth, on their return, than the riders or even the horses.

In the dairy department, the committee noticed a Churn, Curd Cutter, and Cheese-press, made by E. S. Church of Amherst.

E. S. SNELL, *Chairman.*

ON PLOWING.

If a regular turning over the soil, from a uniform depth of 4, 5, or 6 inches be the best thing that can be done preparatory to putting in the seed, then are our improved plows as nearly perfect as any thing human can be: and certainly no one, who has witnessed the exhibition of this day, will doubt that our accomplished plow men have approached perfection in their use.

Some of your committee, however, are disposed to question whether a uniform inversion of the soil from 4 to 6 inches in depth is the preparation best adapted to promote fertility. We suppose it possible, that an operation very different from that of merely inverting the top soil may yet be found preferable; and if so, then a mode of accomplishing it, different from any yet practiced in this country, may be found advantageous.

We anticipate the time as not far distant, when the giant power of

steam will be seen striding such of our fields as are entirely free from stones: rolling its shark toothed cylinders through the soil; grinding to powder all coarse lumps; combing, currying, tearing to shreds all stalks and roots; and so pulverizing and mixing the whole, as greatly to increase the fertility.

But it would be folly to relax our efforts at improvement on existing means for, in the first place, such a steam process may never come; in the second place, if it come, it can be applicable to only a small portion of our lands; and in the third place, it affords no relief for intervening time. We cannot live this year on the expectation of bread to be raised by steam next year. True wisdom, in this case, is, to seek for the most perfect preparation of soils, by means now within our reach. As yet, "much increase is by the strength of the ox," not of steam; and we do well to inquire whether the strength of this noble animal may not be better employed than at present, with all our improved plows, in preparing the soil for luxuriant crops. May there not be some mode of tearing up, pulverizing and mixing soils to a great depth, which, though perhaps more expensive, would nevertheless, pay better, than the present cheap mode of merely inverting the top soil?

The roots of most cultivated crops will run 20 inches deep, if you give them that depth of loosened soil. They run down, off, or upward, wherever they find the best food, and the best conditions for promoting the growth and perfection of the plant. They are endowed with an instinct about as unerring as that of cattle in the selection of their pasturage. We know not, and we probably never shall know, precisely, how plants grow. But we know that the leaves select the right nutriment from the air and reject the wrong, and that the roots are equally discriminating in their choice from the ground. He who has taught the fowls of Heaven to observe their appointed times, has taught the roots of plants to seek unerringly, the right food and the best conditions—to run shoal, to secure the kindest influences of the sun to run downward for moisture, to run for food wherever food is found. Only give them room and they will choose their direction wisely. If you bury an old shoe by the side of a grape vine, ten thousand rootlets will shoot towards it; while if you put in the same place a quantity of bog iron, they will all turn their faces from it. The roots of plants should not be confined, as by our common method of plowing, to 5 or 6 inches of soil. They should have at least three times as much space, out of which to choose the proper conditions of moisture and dryness, of heat and cold, and to select food appropriate to the plant to which they belong. By loosening the soil to a great depth we secure the conditions which the plant demands. We create a porosity by which excessive rains pass off without injury; and we secure a capillary action by which water deep in the earth is drawn upward, when the surface would otherwise be too

dry. We thus secure the plant against serious injury from hard rains or excessive drouth. In soil loosened to a sufficient depth, there is always going on an equalizing process. If too much water falls on the surface, it passes freely to the subsoil. If excessive evaporation takes place from the surface, the moisture from below is drawn upward, in a less quantity, it is true, but on much the same principle as in a sponge, with its lower side placed in the water. In its progress upwards, it brings along with it various salts, with which it had become impregnated in the ground, and applies them in solution—the only state in which plants can appropriate them—to the roots. That water does thus pass upward, that it brings up food for plants properly dissolved for their use, and that it does this the more perfectly in proportion as the ground is deeply pulverized, we suppose is not denied. These facts, show, not only, that long rooted plants are benefited by having an extensively loosened soil, through which to send their runners far and deep after food and moisture, but also that short root plants are benefitted by having a deep, well prepared medium through which food and moisture may be brought to them. It is certain that onions, with fibrous roots extending not more, probably, than 6 inches into the ground, will exhaust the strength of manure, lying at almost any distance below, if the intervening space be occupied by well pulverized earth. The same is probably true of many other plants. It would seem that the rains of heaven percolate the earth, become charged with ingredients adapted to the growth of plants, and then, after the surface moisture has gone off in the air, return to supply its place, bringing with them the various foods of plants, in the only state in which plants can receive them, that is, in solution in water. The conclusion seems irresistible, that plants obtain their nutriment not solely from their immediate vicinity, but from considerable distance below, and that therefore the capabilities of a soil are increased by a deep cultivation. Your committee are of the opinion that if deep cultivation increase the farmer's expenses, it will increase his products more, and thus raise the net profits of agriculture.

Our remarks thus far, we suppose, are applicable to all arable lands. We wish now to make some suggestions with special reference to our deep, alluvial soils. There is in them an almost bottomless reservoir of future food for man and beast, if we can only come at it. By high manuring, they have always produced well. By concentrating on a few arable acres the manure of a whole farm, they have been made to produce great crops. Now can they not be made to produce great crops, with only such manuring as consists with the general productiveness of the farm? We think they can; and we believe that deep cultivation is the secret of success. When the Californians have gathered all the gold from the surface they will have to dig under. So with our Connecticut river farmers; they must tap mother earth deeper; and she will pay them back the shining gold for their

extra labor. Every dollar judiciously expended in deepening the soils of this beautiful valley, will prove a better investment than the gold digger's passage money and *fixins*.

Hitherto we have wrought the surface only. We have implements for that purpose, and modes of using them, which perhaps approximate perfection as nearly as any thing that can be reasonably expected. But if we undertake to do anything more, we may need other tools to do it with. Should we come to the conclusion that 18 inches of loosened soil would afford a better pastime for our corn roots than 6—enough better to pay the extra expense, and leave an increased profit—how should we effect the change? Not by running deeper with our present plows. They are inadequate to the task. Not by constructing them very much larger. No power yet in the field could draw them. Even could we perform the operation, it would bury the vegetable mould in too cold a region, where its decomposition and conversion to food for new plants would be retarded. If performed in the spring, it would leave the surface entirely too cold for the first summer's crop. Trench plowing, of which so much has been said of late, we suppose is well enough for a rich fancy farmer, who, for the sake of exhibiting his agricultural skill, can very well afford to put more on a few acres than he will take off. It may be well for gardeners in the neighborhood of a large city, where rents are high, manure plenty, and vegetables always in demand. But the practice of it by farmers generally, we apprehend, must be delayed till our country contains at least a hundred millions of people. Sub-soiling, in connection with common plowing, as we understand it, proposes first to invert the top-soil some 5 or six inches, and then to stir the sub-soil some 10 or 12 inches deeper. For many of our fields this must be a capital operation. We see not how their productiveness could fail to be increased by it. It opens passages for the circulation of air and water. It can hardly fail to produce a favorable influence on the temperature of the soil. But it does not come up to our idea of so pulverising the soil, that every portion of it may be perforated by rootlets, and become a fit medium for the transmission of water downwards or upwards, as the case may require. We should keep in mind, that, in a well prepared soil, the tendency of water is upward after evaporation, as well as downward after rain.

We have all heard it said, that "it is wise to learn from an enemy." It is wise, also, to learn from an inferior. Presently you will understand what is intended by this last remark. The Spanish farmer, in point of skill, intelligence and industry, cannot be superior to the American farmer. He is indeed more conservative—he uses the same plow to-day that his ancestors used 2000 years ago. I cannot better describe it, than by comparing it with a rake. Imagine for yourself an enormous iron rake, with a long handle and four teeth, long enough to scratch the ground some 20 inches deep, and strong enough to en-

ture the draft of a team. With a leather thong, the farmer fastens the end of this to the yoke of a pair of cows or of oxen, as the case may be, and drags it through the field in all directions till those huge teeth, 20 inches long, readily sink into the ground their whole length, and pass freely through it. Now what is the result of this? Why, that he gets 50 bushels of wheat to the acre, once in two or three years, and gets a large crop of roots or some inferior grain, the intervening years, and that with a husbandry vastly inferior to our own in every thing except the more careful preparation of the ground before sowing. This refers to the north of Spain, among the Cantabrian mountains, where the climate is scarcely superior to our own; and where just about the same process of cropping has been going on for at least 50 generations.

We spoke of learning from an inferior. We are not going to advise you to work cows, as the Spaniard does; nor to send your wives out to drive them, as many Europeans do; nor to substitute the Spanish plow for your own beautiful instrument. The farmer should imitate no one slavishly, but be ready to learn from all, even from the conservatives of the oldest plow in the world. We believe there is many an old field in this region, of rather heavy loam, plowed for a half a century 6 inches deep and no more; clay colored, cold and impervious as you descend below the six-inch level; in which if the owner were shut up to the alternative, either of re-inverting the old six inches, or of patiently scratching down three times that depth with the Spanish plow, he might better choose the latter; because by so doing, although he should expend more labor in spring, he would get a better return in autumn, and leave his land in a better condition for future crops. But is it not possible that some instrument adapted to produce a like effect on the soil to that of the Spanish plow, but far easier, neater, and more workmanlike in its operation, will yet be invented? Is it not possible, that by means of it we may yet be able to deepen our soils to any desirable extent, without greatly increasing the expense? It might be a machine resembling the tongue and fore wheels of an ox-wagon, with steel bars running down and sloping forward from the axle, so as to penetrate the soil more or less, as they might be gauged, to be drawn by a powerful team through the soil till all should be finely pulverized. Some Yankee, we think, will yet invent an implement which, for our alluvial soils, such as are free from stones, will be better than Proarty, Mears & Co's best, with the subsoil plow in the bargain.

With regard to established modes of treating the soil, we would not be radicals, nor yet would we be quite as conservative as those who use the oldest plow, unaltered. We would not repudiate old practices till quite sure that we have found better. To farmers we would say, do not adopt, on mere recommendation, any theory, however plausible, till you have tried it on a small scale, so small as not

to injure you if it do not succeed, or seen it tried, or know that it has been tried, and proved sound. Feel your way by sharp observation and prudent experiments, and before many years we are fully persuaded you will agree with us, that if charity, as the Bible tells us, is casting bread upon the waters to be found after many days, deep plowing—a thorough comminution of the soil—is casting bread upon the waters, to be found, with increase, after few days.

J. A. NASH, *Chairman.*

ON FARMS.

That the farming interest in this Commonwealth and country is superior to any and to all others needs no proof. We could not do without the merchant or the manufacturer, the artizan or the architect. We have pleasure in according to them their meed of praise. But higher honor is due to the farmer who educes from his mother earth *the* bread which is the staff of life, and upon which all classes of the community subsist. The farmers in this country ever have and ever will be the most numerous portion of the people. And what is more, they are universally allowed to be the most conservative in their principles and habits. They are the bulwark and safeguard of every free constitution of government. It is the people who own the soil, and who cultivate it, that on all great emergencies have come up to the support of law and order.

The pecuniary estimates of the farm have often been put too high, especially when made by professional men, who have no practical experience in farming. There is probably, no class of men who do so much work for so small a pecuniary profit, as the farmer. But is pecuniary profit the main object for which a person lives? Are health, virtue, intelligence and quiet, of no account in the estimate of human happiness? In each and all of these the farmer must be allowed to have a decided advantage. The unforeseen changes which so often carry confusion and ruin to the mercantile and manufacturing interests scarcely affect him. His subsistence rests on a surer basis, and on the fulfilment of that promise which says that seed time and harvest shall continue to the very end of all things. Is his a toilsome life? That very toil, taken as it is, in the open air and amidst the fragrance of the fields invigorates his whole nature, and prepares him for that repose which lubricates the joints and strengthens the muscles and prepares him for the labors of the coming day.

It has been asserted by some that the human race is degenerating;—that men do not live so long as formerly;—that they are not so tall and strong as they used to be;—and what is still more to be regretted, that the women are not so handsome as they once were. There surely must be a reason for this degenerating, and in our humble opinion it is found in the fact, that under the influence of a false refinement, our youth are too eager to quit the farmhouses of their fathers and crowd into the cities and large towns, with the mistaken notion that such is the surest and shortest road to promotion, they turn away from the pure air of the forest, for the clouds of dust, the continual bustle, the confining employment, the pestiferous influences of the latter. It is in *this* class of people, if in any that the degeneracy is to be looked for. And it is only by a steady adherence to those pursuits which all past experience declares to be congenial with our physical and moral nature, that the evil can be remedied. Were we to ask you to look at that condition of life which in our opinion, is preferable to that of every other, we would not take you to the manufactory amidst the buzz of spindles and the clank of looms; or to the merchant perched upon his high stool, the live long day looking over his ledger, or to the state officer who is expected to please everybody but himself. But we would say to you, just go with us yonder to that house that stands a little from the road, environed by beautiful trees; with a well planned garden in its rear; with lawns spreading out to the right and the left; look at the thrifty herd and the well fed flock, the fruits and the flowers; then enter its comfortable and neat apartments, and on the healthful and intelligent countenances of those who preside there; the beauty and joy that beam in the faces of their children; join with them in their morning song and in their evening hymn; and say if there be an elysium on earth, you have not now found it.

Four farms were entered for Premiums.

MR. CUTLER'S FARM.

This farm is less than a quarter of a mile from the village of Amherst. It contains 35 acres sloping gently to the west and south west. It is in the form of a parallelogram except that it is notched at the south end by two house lots. The soil consists of a fine rich loam, lying chiefly on a hard gravel, and is all arable. The growth of hay the present season, it is believed, is seldom equaled, he having made thirty-two tons and a half from thirteen acres at one mowing; which is two and a half tons to an acre. And this lot for mowing is so conveniently situated, that after the first day, a man will make and get in, a ton in a day, in good weather. He cultivates this

year three and a half acres of corn, which is estimated to produce two hundred and fifty bushels. His usual crop of oats is one hundred bushels; and his potatoe crop ranges from fifty to seventy-five bushels; and he has also a good kitchen garden.

On his farm Mr. Cutler has one hundred and fifty apple trees of the best varieties. Thirty of these have come to an age to be productive. The remainder are but eleven years from the seed. These trees taken together, in point of health, thrift, beauty and choice selection, probably will not suffer in comparison with the same number within the limits of this Society. The Committee are therefore agreed in awarding to him the first premium of twelve dollars.

MR. LINUS GREEN'S FARM.

This farm is situated in Hadley, more than a mile north-east from the center of the town. It contains one hundred acres; has a southern exposure with a surface very agreeably diversified with gentle elevations and depressions. On this farm are several springs of pure water which are not dry in the driest weather, and which must enhance the value of the farm. A very small portion only is not suited to profitable culture. Some parts of it possessed originally a stiff soil and were nearly unproductive of anything valuable. But by a plentiful application of lime these parts have been so much ameliorated that they are now among its most valuable portions. It is very judiciously divided into pasturage, tillage and mowing and supports a very large stock. The products in hay the present year are eighty tons, which is of a very good quality; and four hundred bushels of corn and other grains in due proportion. The labor in the warm season, can be performed by about three efficient men. The Committee had much pleasure in looking over this farm, not only from its present fine appearance, but also from the consideration that some ten or a dozen years ago, it contained little else but deformity and sterility, and owes its present improved state to the indefatigable industry, and the skill of its possessor. They award to Mr. Green, the second premium of eight dollars. All which is respectfully submitted.

JOHN SANFORD,

In behalf of the Committee.

ON FRUIT TREES.

The Committee on fruit trees visited the several Orchards of different varieties presented for premiums; and two that were present-

for our inspection which the owners thereof generously declined asking the premiums of the society, viz:

One by Hon. Edward Dickinson, and one by Josiah Ayers, both of Amherst. The orchards of both the above named gentlemen, were set in ground well adapted to their growth, and have since had all the attention that is necessary for their thrift and well balanced tops.

In the Orchard of Mr. Dickinson your committee's attention was called to various kinds of fruit: such as the best varieties of Apples, Pears, Peaches, Plums, Quinces, and Grapes, (both native and foreign,) nearly all of which are in bearing condition. We also saw in his garden a beautiful Fig tree loaded with fruit: we were unanimous in the opinion that he has trained them all strictly to the *law* of Agriculture. Mr. Ayers has 155 Apple trees all budded on seedling stocks raised from seed of his own planting, and culture. He has budded and set them all himself, and has been very particular in every attention required. In transplanting seedlings to the nursery, the center, or tap root of each tree has been cut off for the purpose of giving the lateral roots more vigor. In removing from the nursery to their present position he was careful to dig large places and subsoiled at least 6 inches below where they were to stand, supplying a small quantity of compost manure, and set the same depth as when in the nursery. The trees are nearly all thirteen years from the seed, and many of them this year produce fine fruit. This orchard contains almost all the choicest and most approved varieties of which the owner has the satisfaction to know every individual tree, whether bearing or not. The Committee were highly gratified with the success of Mr. Ayer's experiment; and are happy to present this as an illustration of what can be done by skill and intelligence. We find four Apple Orchards offered for premiums, viz: by Alfred Baker, E. Pomeroy Cutler, S. Harrington, all of Amherst, and Levi Boutwell of Leverett.

The orchard of Mr. Boutwell, contains about 100 trees, but as he has not furnished the committee with any written statement, we forbear to make comments, hoping he may offer it next year, stating his success in every particular.

STATEMENT OF MR. BAKER.

My trees were all engrafted in the nursery, at or near the ground; they were transplanted in the fall of 1838, late in the month of November. The soil in which they were set, was poor, dry, and very stony. My manner of setting them was in the first place to dig a hole sufficiently large to admit the longest roots and a few inches

deeper than I wished to have them stand. Before setting, I threw in a few shovels of rich loam procured for the purpose, and continued to mix the same with the earth thrown out, in filling up around the trees. They were set from four to six inches deeper than they stood in the nursery. I have kept the land plowed, taking a crop from the same every year, applying no manure except in the hill, when planted and a small quantity from the compost heap around the trees, as often. I have once in a year (with one or two exceptions) washed my trees with weak lye taken from the leach after making soap, which I think has been of essential service to them. The healthy and thrifty condition of my trees has been particularly noticed by all who have seen them, and I think it a little remarkable that of the 115 or 120 trees set, I have not lost one. My trees stand just two rods distant from each other, which in my opinion is *full* near enough. Of fruit, I have several varieties; such as Greenings, Roxbury, and English Russets, Spitzenburg, Congress and Seeknofurtherers, besides some of poorer qualities which I intend to get rid of by engrafting with better varieties.

STATEMENT OF MR. E. P. CUTLER.

My orchard consists of one hundred and fifty trees, some of which are in bearing condition, but the majority of them have never borne any fruit, as they are but twelve or thirteen years old, from the seed. It is all engrafted fruit, and choice varieties, consisting of Greenings, Pound Royals, Baldwins, Newton Pippins, Seeknofurtherers, Roxbury Russets, Winter Sweet, Hubbardston Nonsuch, Minister Apple, Yellow Harvest, Sops of Wine, and some other choice kinds which I cannot find names for. The method of cultivation is to plow the land once in two years and keep the soil loose and light close to the trees, and manure them with compost manure every fall, have them washed with a solution of Potash water the last of May or first of June; one pound of potash to two gallons water, also trim all the small limbs which rub or touch each other. The land on which this orchard stands is a coarse gravelly loam and not under a very high state of cultivation.

STATEMENT OF SAMUEL HARRINGTON.

I have in my orchard the following trees, viz, of Apples—Baldwin 12; Greenings 13; Roxbury Russets 6; Esopus Spitzenburgs 4;

Common Russets 3 ; Congress Apple 4 ; Philadelphia Bell-flower 4 ; York Pippen 4 ; Miller 2 ; Seekno further 3 ; Peck's pleasant 3 ; other kinds 29 ; in all 87. Cherries 20 ; Plums 25 ; Peach 30 ; Quinces 30. Pears—Bartlett on Pear stock 25 ; Bartlett's on Quince 12 ; Flemish Beauty 4 ; Sekel 4 ; Dix 5 ; Buffum 3 ; Bell Lucrative 3 ; St. Ghislain 2 ; Madaline 4 ; other kinds 49. Whole number of trees 303.

The Committee witnessed with delight, the evidence of taste Mr. Harrington possesses for the cultivation of choice fruit, suited to his soil, and the success which has crowned his efforts. Had the Society offered premiums for the best fruit *orchard* containing different varieties, your Committee could not have failed unanimously to give the first to Mr. Harrington.

There was but one premium offered on pear trees and but one application for the same.

Mr. Harrington of Amherst offered for our inspection, one hundred and eleven trees of different varieties as named in his statement, all of which appear in a very flourishing and thrifty condition. The Committee unanimously award him the premium of \$3.

There were but two Peach Orchards offered for premiums, viz : One by Ezra Willis of Leverett, and one by Ephraim Montague of Belchertown. We award the first premium of \$4, to E. Montague and the second of \$2, to Ezra Willis of Leverett. Mr. Willis has 217 trees in bearing condition, but has not furnished any statement of his mode of culture, and varieties of fruit. The Committee would here suggest to him the expediency of selecting better fruit, and higher cultivation of his trees.

STATEMENT OF MR. E. MONTAGUE.

My Orchard contains nine hundred Peach trees and one hundred and twenty-five Apple trees. In the spring of 1847, I set the lot on the side hill north of my house to 200 Peach and 30 Apple trees covering 3-4 of an acre. The trees were budded the fall previous, on trees one year's growth from the stone. The land is naturally stony. Had been cultivated a number of years with various crops. It lies on a side hill, and but poorly manured. The soil was not rich, having been badly washed by heavy rains, leaving the soil in some places quite thin over the solid rock of which the hill is composed. I have cultivated the ground thoroughly every year. The Apple trees are

set two rods apart and Peach trees between them. I use no manure when setting the trees, but apply a mixture of wood ashes and lime on the surface, around the trees once a year, amount from 2, to 4 quarts to each tree, according to size,—I have never used animal manure in my fruit orchard, preferring Ashes, Lime, Plaster and Saltpetre, for the benefit of the trees. I use a wash for my trees as recommended in Coles American fruit book. Have never been much troubled with the borer until this year, they have attacked my most thrifty trees in great numbers. Had I scraped the trees at the surface of the ground, and washed them thoroughly, in season, I think I might have prevented them. There would probably have been a full crop of fruit this season, had it not been for the east winds which prevailed at the time of blossoming and setting of the fruit, which caused much of it to fall off, yet I estimate the crop worth \$50 per acre. I have other fields which have been set out about two years and cultivated as above described, which are in a very flourishing condition. So far as my experiments extend, I am decidedly in favor of thorough cultivation of the ground, and a judicious annual trimming and washing the trees, together with a good top-dressing of ashes, lime &c., as indispensable to a vigorous, healthy and productive Orchard. I prune my Peach trees by shortening the branches at the extremities. My principal varieties are Crawford Early, Yellow Rareriipe, and Royal George, besides four or five other kinds.

The Committee were highly pleased with the thrifty condition of the large number of trees shown by Mr. Montague, and offer this as another illustration of what can be done by perseverance and judicious management.

PAOLI LATHROP, *Chairman,*

South Hadley, Oct. 22, 1851.

ON MILCH COWS.

The Committee on Milch Cows, having read the statements, and decided according to the best of their judgment, as to the comparative excellence of the cows exhibited, are happy to say, that with one exception, they were of superior quality.

No. 2 was a cow entered by Alvan Barnard: and by his statement, (that she yielded 113 12-16 lbs. of milk in three days, ending Oct. 18, from which he churned 5 12-16 lbs. of butter) appears to be a very valuable animal, and would have been entitled to a high premium, had the conditions of the Society been complied with on his part. We recommend to him a gratuity of \$1,00.

We see occasionally a cow that produces 14 lbs. of butter in a week, but how seldom! Now the question arises, how can we breed good cows? In all animals, as well as vegetables, like produces like. But here there seems to be a great uncertainty. A good cow, perhaps the most useful among domestic animals, and what every family needs, *seems* to come by chance. If a man happens to have a good cow, it is no doubt, very agreeable to take a prize; but he has done nothing to make her what she is, and he is not certain of rearing another like her.

If there is a breed of cattle in the world that can be relied on as producing superior milkers, pray let us have them, that we may not be disappointed and discouraged when we undertake to raise at considerable expense, a good heifer from a good cow. What we stand very much in need of, in this as in other matters relating to agriculture, is that most highly esteemed commodity, *science*.

The Ayrshire stock have been much extolled for their milking properties. The Hampshire, Hampden and Franklin Agricultural Society was presented with a sire of this breed nearly three years since, by the Massachusetts Agricultural Society, but where is the man who is rearing an individual heifer from him, with full confidence that she will make a first rate cow? So weak is our faith in this matter, that even this animal, imported at great expense, and his dam probably from some of the best milkers in Scotland, has been lightly esteemed by some of the leading members of that Society; and a few months since it was deemed inexpedient longer to give him a support. He is, however, still in their possession at Hadley, and your Committee would strongly urge upon all who may obtain calves by him, the importance of giving the stock a fair trial, hoping that a decided improvement in our breed of milkers may be the result.

STATEMENT OF MR. SPENCER CHURCH.

My Cow is seven years old. She gave forty-five pounds of milk per day during the months of May and June last, from which I made 14 lbs. of butter weekly. Her feed was grass only. She calved April 23, 1851, and her calf is by her side.

STATEMENT OF REV. JOHN SANFORD.

My Cow is four years old; and has had three calves. Had her last calf on the 20th of last March, which weighed at less than five

weeks old 140 pounds. At the best of the season she gave from 14 to 15 quarts of milk a day. Three months from calving, she made 16 lbs. of butter in ten days; and in August, about five months from her calving, she made 14 lbs. in ten days; grass with two quarts provender daily. This would give an average of full 15 lbs. in ten days for 182 days which is half a year, and at this rate we get 273 lbs. in 182 days, or six months, and 273 lbs. of butter at one shilling a pound, comes to \$45,50. All of which is respectfully submitted.

STATEMENT OF MR. JAMES P. DEXTER.

My Cow from the 15th of July, to the 24th (ten days,) gave from 34 to 38 lbs. of milk, and made 15 1-2 lbs. of butter. During a period in September, of ten days, her average quantity of milk was 34 lbs., from which I made 14 lbs. of butter. Her feed was grass, with two quarts of provender daily. The cow calved the 4th of March, and the calf was of a good quality.

STATEMENT OF MR. H. L. BURNHAM

The milk of my Cow, from October 1st to 21st was five quarts per day; very yellow and sweet. We have used one quart per day in the family. The butter made in that time was nine ounces per day, the Cow had only pasture feed. She calved on the 1st of August, 1850.

STATEMENT OF MR. ALVAN BARNARD.

Milch cow five years old. October 16, yielded 33 lbs. 4 oz. milk; Oct. 17, 40 lbs. 12 oz.; Oct. 18, 39 lbs. 12 oz.; total 113 lbs. 12 oz. Made from the above milk, 5 lbs. 12 oz. of butter.

THEOPHILUS P. HUNTINGTON, *Chairman.*

ON STEERS.

The two years' old were a superior lot. All were fair and some very fine. Your committee were happy to notice an improvement in

this description of stock. We also noticed the weight of four pairs, which were as follows: The first weighed 2,600 lbs.; the second 2,470 lbs.; the third 2,390 lbs.; the fourth 2,400 lbs.

The one year olds were all very good steers, but in the opinion of your committee, the number was small in comparison with what it ought to be, and with what it might have been, for we know of several pairs, of large size and beautiful form, which were not present, but which we expect to see next year in the list of two years' old. We would only add, that if we expect good oxen we must have, not only good two years' old, but good yearlings and good calves.

GILES F. MONTAGUE, *Chairman.*

ON SHEEP.

We approach the important subject assigned to us for discussion this day, Mr. President, with no little trepidation and self-distrust. When the announcement was first made to us, now, thought we, we must have all our thoughts about us, but instead of this we find to our mortification and regret, that all our senses have "*been a wool-gathering.*" and all to little or no purpose, for we fear we have scarcely a new or original idea to offer you on the subject we have undertaken to descant upon. We are sensible that to treat it properly in all its varied *ramifications*, requires the greatest acumen and depth of thought, while the language employed would be the purest, "*first-clip*" "*Saxony*" and altogether *uncrossed* with either Norman French or Latin. We profess that our subject to-day is *wool-growing*, but we feel that we must approach it with the utmost care and caution, or we shall suddenly find ourselves and our subject most essentially *worsted!*

Sir, it cannot be denied, and the fact is a most *lambentable* one, that the business of sheep-raising, has not of late years, received the attention from the farmers of this region, which its importance deserves. Living as we do, in the finest grazing country in the world, it is strange that our farmers devote so little attention to a culture which pays the largest and surest profit on the amount of capital invested and of labor bestowed. Why sir, if the Patriarchs of old, possessed such a range of hill-sides and mountain-slopes as this valley presents, instead of the barren deserts of Syria, or the arid plains of Moab, it is hardly unreasonable to suppose that their flocks would have increased to such a degree as to have left room scarcely for the human species. Let the farmers in this vicinity who are beginning

to get discouraged and to talk about the *far west*, let them only commence the subject of wool-growing in *right earnest*, let them *people* (if we may use the term) these sunny vales and green hill-sides with *sheep*, and soon, instead of Wisconsin, Iowa, in desponding tones, their glad cry, like the great geometrician of Megara on the completion of his immortal discovery will be "*Ewereka! Ewereka!*" thus realizing in our own day, the well known fable of the *golden fleece*; for your committee are of the opinion that the Argonauts were only a joint-stock company of enterprising farmers and manufacturers who under Captain Jason, chartered the good ship *Argo* and *run* her in the wool-trade down to *Colehis* where the *clip* that year was remarkably good, and with such success and profit on their *venture* that it gave rise to the fable as above: a fact which may be realized even at this day, by any set of men equally enterprising and persevering and without arming themselves or chartering a ship of war for the purpose. We are further told that on their return the Argonauts made an offering of the entire fleece to Mars, the God of war, which some have interpreted to mean a liberal yielding of their profits to those who were ready to *fight* in opposition to the *wool business* and manufactures, but without encroaching on the forbidden ground of *politics*, we leave it entirely to politicians, whose business it is, and who are paid for it, to determine how great concessions, if any, it is the duty of protectionists and manufacturers of the north to make, to appease the war spirit of the *anti tariffites*, and seceders of the south.

Sheepskins once formed the only circulating medium, and the very name of *money* among the ancients, was derived from the Latin word *pecus*, a sheep or a flock, which has given the name to the term "*pecuniary*," down to the present day. But little as we know of our subject generally, it will hardly be expected of *us* individually, and we confess to the *lambentable* truth of having less *experimental* knowledge of this part of our subject than of any other, but there are those now living who can remember when sheepskins were a *lawful tender*, (would we could say the same now a days, of the *mutton* which they cover, but alas! the legitimate and distinctive properties of that article have *Ewesually* been quite the reverse of *tender*!) and even at the present day, as we are almost hourly assured by the individuals themselves, sheepskins continue to be received *at par* by that accommodating class of people, the peddlers.

The Scriptures inform us that the patriarch Jacob tended the flocks of his uncle Laban, seven years, as the stipulated price of her whom he expected shortly to style *Mrs. Jacob*, a strength of attachment which we apprehend, often finds a parallel even in these degenerate days; as we have been credibly informed, that even now the young swains, our farmers' sons, when on such a matrimonial errand, *Ewesually* have their eye on the sheep-fold, out of doors, quite as much as on the damsel *inside*; this is a commendable act of prudence, too,

for surely in so fair a business transaction, it is perfectly proper and just, to have a due regard to the *quid-pro-quo*. As is well known, law-books are always bound in leather, of a peculiar complexion called "*law sheep*," which, perhaps, may account for the startling fact that all well-read lawyers are so proverbially expert in the art of "*fleeing*" their clients, and in fact all who become involved in the "*glorious uncertainties*" of a lawsuit.

It is related of an eminent statesman, that once in a debate in congress on a bill for the protection of woolen manufacturers, he stated as his reason for opposing the measure, that he "*hated a sheep* and would any time get off his horse and go a hundred yards out of his way to *kick a sheep!*" Truly there is no accounting for tastes. Now, we sir, are of diametrically the opposite taste. We would, and have many a time, alighted and gone an equal distance out of our way, to *caress a sheep*. We love those domestic sounds, the bleating of sheep, from the tremulous *bass* of the venerable wether, to the shrill and plaintive *treble* of the little lambs; and often have we gazed with admiration on that peculiar, bland, amiable expression of their eyes which originated the world-wide expression—*casting sheep's eyes*, and though no friends of "*blacklegs*" and "*gambling*" in general, we frankly confess to a tender regard for witnessing the innocent and playful *gambolling* of the little *lambkins*.

Before closing we would gladly offer to farmers, some facts in regard to improved breeds of sheep to operate as a further inducement to them to enter with more spirit into the the business of sheep-raising, but here again we must confess to our ignorance generally, of this part of our subject, only we still have a *feeling* recollection that once on a time, it was in the "*dim and distant past*," as we were idly *rambling* in the fields, our course lay through a neighboring pasture, and after quietly surmounting the fence, we were suddenly made aware of a flock of sheep as quietly grazing there. We were calmly pursuing our way all unmolesting and unsuspectingly, when, without any *ifs* and with only a single *butt*, we were violently attacked *in our rear* and immediately overthrown, *put to a total rout!* But recovering our perpendicular as soon as circumstances would admit, we, as the sailors say, "*hove to to repair damages*," when we had abundant opportunity to mark the distinguishing points of the *foe* by whom we had been so signally defeated, and we are prepared to affirm that if not a genuine specimen of the *battering ram* of the Ancients, he was to say the least, a most notable *cross* between that species and our native stock, (and we have more than one reason for deeming it a "*a cross*," for certainly he was the *crossed* animal we have ever encountered!) This defeat, however painful and humiliating, was of essential service to us: for ever after, during our college days, no temptation was sufficient, not even that of ripe water-mellons, or white "*square shag barks*," to draw us from the path

of duty and strict honesty! We have good reason for believing that this same breed still exists in considerable numbers in this vicinity, and as they are not properly the *South Down* species, we will suggest as an appropriate name, the "*Knock Down* breed," and we recommend it to farmers as an efficient protection to their orchards and *mellon patches*. Moreover, we would respectfully suggest to our National and State Governments, that, whether for purposes of invasion or defense, a *batallion* composed entirely of these animals, if properly trained and officered, we will suppose, by genuine *Wool-verines* from Michigan, would most assuredly and effectually *lamm* (Webster's unabridged) any force which could be brought against them, not excepting even the famous "blood-hound regiment." We have no further knowledge of the different breeds of sheep. The "*Bakewell*," we judge from the etymology of the term, to be the best for *mutton*. Finally, aside from all interesting scripture associations connected with the sheep, we feel warranted in the assertion that of all animals which composed the freight or passenger list of that first great ship—Noah's Ark, not one is of more extensive or varied use than the sheep. His fleece forms the luxurious covering of the gentleman (which, by the way, is in most instances, merely transferring it from the back of one sheep to that of another); his skin, manufactured into parchment, contains the record of his titles and honors, and is made to suit all wants from the best "goat-skin morocco" for ladies shoes (by a process known only to *tanners* and *shoemakers*) to a blacksmith's apron.

The undersigned avails himself of the occasion, in behalf of the committee, to renew unto you sir, and your associates of this society, the assurance of the high consideration and regard with which he remains etc., etc.

Z. C. MONTAGUE, *Chairman*.

ON SWINE.

Your Committee have carefully attended to the important duty entrusted to them, and beg leave to report that they have been filled with surprise, to find that in the very high noon of this age of progress, when the march of civilization, of education and of philanthropy is so rapid, so little is being done for the social and physical advancement of that numerous and slandered class of the community, the Swine.

Perhaps the only philosophical system there is in the world, which has no *gammon* in it, is the Baconian, and strange to say, the improvement of *bacon* is almost the only subject to which that system has not been applied.

Mechanical skill has annihilated space; labor saving implements have enabled us to cultivate our fields with half the former time and expense; the study and judicious application of the laws of breeding, have placed our Horses and Oxen and Sheep, in point of size, strength, beauty and usefulness, far in advance of the old standard. But amid all this improvement, the unfortunate Hog is left in the back-ground. Having always manifested a knack of taking care of himself, he is suffered to go on in his own way, and is expected of his own accord, to get fat about Thanksgiving, and then quietly to yield himself up a martyr *pro bono publico* i. e. as a *bone for the public* to pick. Whatever visionary and absurd ideas *men* may have entertained, with regard to the perfectibility of the species, the swine appears never to have troubled his head with any notions of the sort. His enemies have indeed accused him of a proneness to radicalism as evinced by his great fondness for *rooting*, but however far he may have run his speculations into the ground, in this respect, he is certainly not to be charged with any socialistic schemes of reform and swinish progress.

We have been led to make these remarks not so much as the result of our observation in this immediate vicinity, for it is conceded that in New England, the introduction of such important foreign varieties as the Berkshire and Suffolk breeds, have effected a great improvement in the native stock, and our farmers are annually turning off porkers so sleek and unwieldy, so suggestive of the glories of roast pork, the juicy charms of ham, and the luxury of sausages, as to make a Jew water at the mouth, and almost wish himself a Christian. But leave New England, study the character and habits of the swine of New Jersey, Pennsylvania and the Southern States, and what a contrast is presented to the view. In those portions of our country, the hog seems to have entirely lost his character as an honest, well-meaning, contented quadruped. Like Ishmael, his hand is against every man and every man's hand is against him. Thrown from his tender years, upon the cold charities of the world, he becomes prematurely vicious, and the grinding hand of adversity seems to have sharpened his wits and his snout at the same time. Compelled to forage for a livelihood, along the highways, and in the gutters, the mere pressure of necessity makes him an arrant, poaching vagabond. Long, low and sharp built, with a rakish cut of his jib, and great for speed, he is *prima facie* a suspicious looking craft, and when captured in any of his depredations, he is sure to forfeit all the privileges of the common law, and to be condemned as a pirate, without benefit of clergy. And after all he is a good fellow at heart, the vic-

tim of circumstances, an involuntary scoundrel and "more sinned against than sinning."

It is difficult to assign any cause of the neglect which this valuable and interesting animal has so long experienced. Whether it be Jewish prejudice, or Mahometan superstition, or something else, to which the hog owes his depressed condition, it has certainly not always been so. In other periods of history, the swine has not been without honor.

There is extant, a Latin poem of some hundred lines, in regular heroic verse, every word of which in honor of this animal, commences with the letter P the initial of his Latin name, Porcus. It is entitled "Pugno Porcorum per Publium Porcium Poetam." We quote a few lines containing a part of the speech of the Porconsul Porcorum, in which he tries to win over the younger pigs to peace.

Propterea properans Proconsul, poplite prono,
Præcipitem Plebem pro Patrum pace poposcit,
Persta paulisper, pubes preciosa, precamur.

So in Virgil, old Father Tiber takes pains to appear to Æneas with this important message, "Thou shalt find reclining under the oaks upon the shore, a huge snow white sow, and around her a litter of *thirty* pigs. This shall be the site for your city, and in remembrance of the circumstance it shall be called "*Alba*," (white.) Pious Æneas found the sow and pigs as predicted, and very cruelly as we think ordered them all to be sacrificed to Juno. Not a pig of them however, did Juno ever see. They were all transferred to the private larder of Æneas, whom it is impossible to justify for thus cheating the gods, even though assailed by so sore a temptation as roast pig. Roast pig! Who but Charles Lamb has fitly sung thy praise!

"Of all the delicacies in the whole munbus edibilis, I will maintain it to be the most delicate—princeps obsoniorum. I speak not of your grown porkers, but a young and tender suckling, guiltless as yet of the sty, his voice as yet not broken, but something between a childish treble and a grumble, the mild fore-runner of a grunt. There is no flavor comparable, I will contend, to that of the crisp, tawny, not over-roasted *crackling*, as it is well called—the very teeth are invited to their share of pleasure at this banquet in overcoming the coy, brittle resistance—with the adhesive oleaginous, O call it not fat! but an indefinable sweetness growing up to it, the tender blossoming of fat—fat cropped in the bud, taken in the shoot, in the first innocence, the cream and quintessence of the child-pig's yet pure food—the lean no-lean, but a kind of animal manna—or rather, fat and lean (if it must be so) so blended and running into each other that both together make but one ambrosian result, or common substance."

Mahomet commanded his followers to abstain from pork, declaring there was a particular joint in every swine, which no good musselman

might taste on pain of excommunication. But he forgot to tell what joint he meant, and so the matter was left uncertain. The learned doctors fell to speculating on the matter, and their speculations being assisted by their fleshly appetites, they soon discovered how to eat pork and sin not.

“For one piece they thought it hard
 From the whole hog to be debarred ;
 And set their wits to work to find
 What joint the prophet had in mind.
 Much controversy straight arose
 These choose the back, the belly those ;
 By some 'tis confidently said
 He meant not to forbid the head ;
 While others at that doctrine rail,
 And piously prefer the tail,
 Thus conscience freed from every clog,
 Mahometans eat up the hog.”

And for it we admire their good sense as well as their ingenious casuistry. It is certainly the most pious and least fraudulent *pious fraud* that we remember having read of.

Respectfully submitted,

JOHN E. EMERSON.

ON FAT CATTLE.

Your Committee report eight entries of Fat Cattle. We award the first premium of six dollars, to Mr. Moses Stebbins of South Deerfield ; and the second premium of four dollars, to the same gentleman, for the second best pair. Mr. ——— Thayer of Belchertown, presented a prime pair of cattle whose *fattening qualities* were equal to any, and we would recommend to him a gratuity of two dollars. The *quality* of all the cattle was good, and they were mainly of the native breed or a cross of the Native and the Durham.

The business of fattening cattle is important and extensive in this county. Our farmers feed out their hay and grain, and return their fertilizing properties to their farms. We speak advisedly when we say, that at least one hundred and twenty-five thousand dollars worth of beef are annually fattened within the limits of the society. Yet, but eight yoke of fat cattle were entered to day ! Your Committee hope that our farmers will bring out a larger number of Fat Cattle, at the next exhibition.

LEVI STOCKBRIDGE.

ON BREAD.

The Committee on Bread, report that they have examined with as much care as the limited time would permit, the great variety of specimens which were presented for inspection. They have no hesitation in saying that the present exhibition of bread has not been surpassed by that of any former year, either in variety or excellence. 102 specimens were presented. It was a most difficult duty to discriminate among the several excellent specimens exhibited. The varieties were Wheat, Rye, the Graham, Indian and Wheat, Rye and Wheat Rye and Indian. The Committee were highly gratified with the exhibition of such specimens of skill in the manufacture of the "staff of life," by the wives and daughters of our citizens, and they are earnestly invited and strenuously urged to continue, in years to come, the exhibition of such specimens of their skill and labor. They cannot refrain from including in their report, some fine verses on Rye Bread, attributed to Mrs. Geo. Baker of Amherst.

STATEMENT OF MRS. ADAMS.

My wheat bread was made with skimmed milk, a suitable quantity of yeast, a bit of shortening, and well kneaded,

STATEMENT OF MRS. CHARLOTTE C. HASKELL.

For the yeast use equal parts of new milk and boiling water, make a thin batter, and let it stand in a warm place five hours for rising, when light, add a little saleratus and salt and milk if preferred, flour sufficient to mould, rise one half in the pans, bake one half hour.

STATEMENT OF MRS. CLARK.

This bread was made of rye flour of our own raising, ground at Mr. Puffer's Mill, North Amherst, mixed with sweet milk and hop yeast. When first mixed, it stood one hour in pans, to rise, and it was baked in the oven one hour and a quarter.

STATEMENT OF MRS. EDMUND SMITH.

Mix four quarts of rye flour, one tea spoonful of salt, a gill of yeast and some new milk. After kneading fifteen minutes, let the bread rise till sufficiently light, and bake one hour and a quarter in a brick oven.

STATEMENT OF MRS. GEORGE BAKER.

RYE BREAD.

A loaf of bread ! t'would seem strange
That this should come within the range
Of *Cattle Show and Fair*,
But since it does, I'll do my best,
And let all other business rest
Till I a *specimen* prepare.

I don't expect to gain the boon
Of honor, due to her alone,
Who the best bread shall make ;
But yet I'll try—no harm will come,
To me, though not the favored One,
The meed of praise to take.

And first, the process must be told,
Or there's no chance to get the *Gold*,
The *Premium* to draw,
Good House-wives say bread must be *light*,
To keep their husband's temper right,
And that I'll strive to do.

Of good *rye flour* I'll take a share,
Warm *milk* and *yeast* enough I'll spare,
To *mix* it rather thin ;
In a *warm place* it needs to be,
Till I a *fermentation* see,
Then add *more flour* again.

And if *proportions* I must state,
I think the flour is at the rate
Of *two quarts* to a *loaf* ;
Three pints of milk a *gill* of yeast,
Will make *two* small sized *loaves* at least
And *bake one hour*, enough.

I now have told how I shall make
My bread, and let me do it quick—
Or I shall lose the chance,
Of competition with the Dames,
Who with their loaves must send their names,
Or forfeit recompense.

S. C. CARTER, *Chairman*.

ON BUTTER, CHEESE AND HONEY.

Twenty-two entries of Butter, of fine appearance and of superior quality, contributed largely to the exhibition in Sweetser's Hall.

The statements of the process of making butter, might have been more full, and therefore much more valuable. The entire method may be familiar to housewives, yet it is not probably uniform. The best mode is to be ascertained by comparison of statements, the publication of which will put them within the cognizance of every farmer's wife and daughter.

The *manner of milking* has much to do with the quantity of butter produced. Let the cow's bag be thoroughly exhausted of milk; for it is believed, that *one pint at the close of milking will make as much butter, as four pints, at the commencement.*

The most suitable place for the milk, while the cream rises; the proper time for this operation; the right depth of the pans; whether the cream, after it is skimmed, should be put in buckets or in pans; in the well, or in the cellar, or in a cool vault constructed under the cellar floor, are matters of importance.

It is desirable, that the degree of temperature of the cream, during the churning process, and that the form of churn—which produces the best quality and largest quantity of butter—be ascertained, and generally adopted.

After the butter comes, the most delicate part of the process remains, the removal of all particles of the buttermilk. It is suggested, that our dairy-women could afford to apply, here, double their usual labor to half the quantity of butter; for this half would be worth more, for the table or for the market, than the whole in the condition it is usually prepared. The removal of buttermilk is effected by some, with the use of water; by others, without water; and by others, with sweet milk. Which is preferable? Experiments will furnish the most satisfactory answer, and the statements, accompanying the butter at the annual Cattle Show, will disclose it to the agricultural community.

The salting process is of no small consequence. "To salt to suit the taste" or with half, or three fourths of an ounce of salt or more to the pound, are some of the methods. So various are the rules of good housewives, that we can easily account for all the differences, in the quality of their butter.

Notwithstanding the utmost skill in the process of butter making—from the milking of the Cow to the moulding of the yellow lumps for the table or for the market—it will be found that one quart of milk from some Cows will yield as much or more butter, than two quarts from others. The Cow that yields the greatest quantity of milk, may not yield so good a quality of milk for butter, as another.

Hence, it is for the interest of the farmer, who is about to purchase cows for their butter making qualities, to test their milk. And here it may be proper to state, that although the breed imported from the County of Ayr in Scotland, is celebrated for great milkers; yet, the most productive Cow in butter, found in England, by the late Mr. Coleman, was a *North Devon*; she made 21 lbs. of butter per week, for several successive weeks, without extra feed. *An imported Bull and Cow of the North Devon breed*, are in possession of this Society, at the residence of the President, for the convenience of the farmers of this region.

CHEESE.

Sixteen parcels of excellent Cheese were presented to your committee for inspection. The statements are satisfactory, although they might have been more extended. May the day soon arrive, when our Dairies shall become to old Massachusetts, all that the dairies of New York are to the "Empire State." The average annual product, in 1846, of the Dairies of Herkimer County, ranged from 500 to 650 lbs. of cheese per Cow. A Mr. Rottier of Jefferson County, N. Y., in 1849, produced from 26 Cows an average, of from 125 to 150 lbs. of butter, and from 300 to 400 lbs. of cheese, per cow.

When the farmers of the Connecticut valley *will* to have such products; with the blessing of God, *they will come*.

STATEMENT OF MRS. WM. MERRICK.

I herewith present for your inspection a sample of six cheeses from a Dairy of eleven cows. The following is a statement of the process of making. The night's milk is strained into a tub; to which is added the morning's milk. After having taken from the night's milk about two gallons, turn in the cream and place it in a kettle of scalding water. When heated to a temperature of about 90 degrees, add rennet sufficient to bring the cheese in about an hour; when wheyed off, press about two days, and turn daily till cured.

STATEMENT OF MRS. OREN WILLIAMS.

The milk, when taken from the cow at night, is permitted to stand in a tub for that purpose, until the next morning. Then the cream

is taken from it, and warmed with a quantity of milk ; then it is turned back with the morning's milk and rennet is added to it, after which it is to stand until the curd separates from the whey. It is then scalded, dipped off, permitted to drain until afternoon, and then manufactured into cheese.

HONEY.

Two large specimens of honey in the honey comb graced the tables. They attracted attention and were much admired. The Society had not offered premiums upon the products of the "busy bee." The Committee manifest their high estimate of the two parcels, by awarding gratuities to the gentlemen who introduced them, Mr. Ransom Dickinson and Mr. Stoughton D. Crocker, both of Sunderland.

For the Committee,

J. W. BOYDEN.

REPORT

TO THE SECRETARY OF THE COMMONWEALTH.

In compliance with the Statute, the Hampshire Agricultural Society, by its President and Secretary, submits the following Report :

The annual Cattle Show was held at Amherst, October 22, 1851. It was honored with the presence of several prominent friends of Agriculture, living in other parts of the State. The attendance of the farmers of the County of Hampshire, and even from several adjoining Counties, was very large.

The Exhibition opened with the trial of Horses, at half past nine o'clock, in presence of the Officers, Examining Committees, Invited Guests and Spectators. The number, quality and appearance of the horses, received general commendation. The whole number, on the ground, was *One hundred and twenty-three*; viz: Five Stallions; twelve Geldings: forty Working Horses; twenty-two Breeding Mares; and forty-four Colts.

The *Plowing Match*, commenced at ten o'clock, on the premises of E. Pomeroy Cutler, near the village. The number of Entries was twenty-three. Sixteen lots were plowed. The land was hard, somewhat stony, and adapted to exercise the highest skill of holders and plows. Professional plowmen, interested for rival manufacturers, were excluded from the contest. The manufacturers' offer of plows to the competitors, to use for the occasion, was generally accepted. The Society furnished to Messrs. Ruggles, Nourse, Mason & Co., Messrs. Prouty & Mears, and T. K. Whitmore & Co., every facility for the introduction of their plows, into the Connecticut Valley. The Michigan Plow (or Morton Plow, as it is called in France,) with two coulters, was much admired. Each competitor, at the time of his entry, drew lots for his place in the field, and was required to do his work in silence. The plowing was creditable to all the holders and very attractive to the spectators.

The *Trial of Working Oxen*, was made at half past ten o'clock. The number of Entries was twenty-five. The load was stone, about two tons in weight, drawn up an ascent in the highway of six or seven degrees, by single teams. The work was well done.

The Show of Cattle was very extensive. *Five hundred fine Cattle* were securely stationed in Pens, or upon the Common. There were Five Calves; Seven Milch Cows; Nine Heifers; Twelve Bulls; Sixteen Fat Cattle; Sixty Steers, one, two and three years' old; and Three Hundred and Ninety Working Oxen.

The *Belchertown String* contained two hundred and two working oxen, in pairs, decorated with banners and attached to a spacious car,

appropriately decorated, and occupied by one hundred and eighty one persons, including the Belchertown Brass Band. The arrival and departure of this long column of Cattle, amid the stirring notes of martial music, elicited the applause of all beholders. The *Granby String* was composed of eighty eight excellent cattle, preceded by a banner, with the motto, "*Granby is coming.*" A large part of this string and its drivers arrived the evening before the exhibition, and received hospitable entertainment during the night from the Amherst farmers. The *Leverett String* had forty-eight fine Cattle, and we learn that it would have counted two hundred, had the weather in the morning been more favorable. Parsons West of Hadley, exhibited eighteen very nice working oxen, from his own farm.

The exhibition of Sheep and Swine was not extensive as it might and should have been. There were but ten Bucks, five lots of Ewes; three Boars; four Sows and Litters of Pigs. The Show of *Poultry* was very large, containing *six hundred specimens*.

The exhibition of Fruit was of a superior order. The whole number of Plates was four hundred and four, with not less than five specimens on each plate. There were three hundred and forty-five plates of Fall and Winter Apples; fifty five varieties of Pears, fifty-three of which were contributed by Hon. Marshall P. Wilder, Orator of the day; sixteen plates of Quinces and six entries of Grapes. Asher Shepard of Northampton, exhibited one hundred and twenty plates of choice apples.

The Ladies' Department contained one hundred and eight specimens of Fancy Articles; one hundred and two Loaves of Wheat and Rye Bread; thirty Cheeses and twenty lots of Butter.

The remaining departments of the Exhibition were well filled. There were sixty entries of Vegetables; two of Honey; one of Maple Sugar; a good display of Cotton and Woolen Manufactures; of Agricultural and Mechanical Implements; of Hadley Brooms; South Hadley Paper; Amherst Board Paper, Wrapping Paper, Hammers, Planes, Boots, Shoes, Harnesses, Trunks, and other specimens of the Mechanic Arts.

The Address was delivered at noon, by Hon. Marshall P. Wilder. It will be published with the Committees' Reports, a list of Premiums and Members, at the expense of the Society, for gratuitous distribution among the Members.

This Society has received an accession of three hundred Life Members during the year. The whole number of Life Members is 640.

The above statement indicates the plan of promoting Agriculture and Mechanic Arts adopted by this Society. It proposes premiums, and distributes among its members, a printed copy of the Address, Reports and Statements of competitors.

J. W. BOYDEN, *Secretary*.

ALFRED BAKER, *President*.

LIST OF PREMIUMS

AWARDED BY THE

HAMPSHIRE AGRICULTURAL SOCIETY,
FOR THE YEAR 1851.

TOWN STRINGS—THREE ENTRIES.		CALVES—THREE ENTRIES.	
Belchertown, (102 yoke,) 15	15	Samuel Prince, Amherst,	1
Granby, (44 yoke,) 10	10	Spencer Church, Amherst, best	
Leverett, (24 yoke,) 5	5	Heifer Calf,	1
COMPOST MANURES—THREE ENTRIES.		Asa Wilson, Belchertown,	75 cts.
Samuel Powers, Hadley, 10	10	BULLS—TWELVE ENTRIES.	
David Rice, Leverett, 6	6	Oliver Williams, Sunderland,	4
WORKING OXEN—TWENTY-SIX ENTRIES.		Edmund Smith, South Hadley,	3
J. H. Preston, Granby, 5	5	SHEEP—FOURTEEN ENTRIES.	
Edmund Smith, South Hadley, 4	4	Geo. A. Whipple, Amherst, Ewes,	2
William Thayer, Belchertown, 3	3	Linus Green, Hadley, "	1
Jonathan Cowles, Jr., Amherst, 2	2	Jonathan Cowles, Amherst, best	
FAT CATTLE—EIGHT ENTRIES.		Buck,	50 cts.
Moses Stebbins, Deerfield, 6	6	Phillip D. Spaulding, Amherst,	50 cts.
Moses Stebbins, Deerfield, 4	4	BOARS—THREE ENTRIES.	
STEERS—3 YEARS' OLD—SIXTEEN ENTRIES.		Elijah Fitts, Leverett,	3
Cephas May, Conway, 5	5	George Farrar, Shutesbury,	2
Horace Belden, Amherst, 3	3	SOWS & PIGS—THREE ENTRIES.	
Joseph Dickinson, Amherst, 2	2	Hubbard Graves, Sunderland,	2
STEERS—2 YEARS' OLD—ELEVEN ENTRIES.		Bela U. Dickinson, Amherst,	1
Lyman D. Potter, Enfield, 4	4	LITTERS OF PIGS—TWO ENTRIES.	
Samuel Prince, Amherst, 3	3	Charles Hamilton, Shutesbury,	1
Cephas May, Conway, 2	2	POULTRY—FIFTY ENTRIES.	
YEARLINGS—FOUR ENTRIES.		About 600 of all kinds.	
William Boltwood, Amherst, 3	3	BEST LOT TURKIES.	
Ezra Ingram, Amherst, 2	2	Ashley Hubbard, Sunderland,	1
MILCH COWS—SEVEN ENTRIES.		BEST LOT FOWLS.	
Spencer Church, Amherst, 5	5	R. B. Smith, Enfield,	1
John Sanford, " 4	4	BEST LOT CAPONS.	
J. P. Dexter, " 3	3	Frederick Lyman, Hadley,	1
H. L. Burnham, " 2	2	BEST LOT DUCKS.	
HEIFERS—NINE ENTRIES.		George H. Brown, Granby,	1
T. P. Huntington, Hadley, best 2 yrs. old, 2	2	HORSES.	
Rev. John Sanford, Amherst, best yearling, 1	1	Total Entries, 100.	
		STALLIONS—FIVE ENTRIES.	
		Orrin Trow, Hardwick,	6
		GELDINGS—TWENTY FOUR	
		Emory H. Needham, Amherst,	3
		Josiah Dickinson, "	2
		Eli Hawley, Hadley,	1

WORKING HORSES—TWENTY-ONE ENTRIES.		James Kellogg, Amherst, lot Tools, \$1
Levi Smith, Granby, \$5		Joseph Adams & Sons, Hadley, lot Bent Rims, Felleys, Hubs, Sawed Lath and Timber, &c., 1
Edwin Smith, Hadley, best Farm Horse, 2		H. T. Filer, Belchertown, 1 Buggy, 1
BREEDING MARES—TWENTY-FIVE ENTRIES.		E. S. Church, Amherst, Cheese Press, Curd Cutter, and Churn, 75 cts.
Moses Ruggles, Hardwick, \$5		Eli Warner, Hay, Straw and Stalk Cutter, 75 cts.
George Warner, Amherst, 3		Aaron Rugg, Montague, Rakes, 50 cts.
Wm. Kellogg, " 2		Daniel Purington, Pelham, Tool Handles, 50 cts.
COLTS—TWENTY-FIVE ENTRIES. THREE YEARS' OLD.		Horace Grey, Pelham, Clamps, 50 cts.
Edmund Smith, Hadley, \$3		Porter Dickinson, Amherst, Hammers, 50 cts.
TWO YEARS' OLD.		Jas. H. Derver, Tire Iron, 50 cts.
Henry A. Dickinson, Granby, \$2		E. Bogue, Amherst, Perambulator, 50 cts.
Elijah Cowls, Hadley, \$1		Frink & Co., Amherst, Corn Shelter, 50 cts.
MAPLE SUGAR—ONE ENTRY.		A. L. Wellman, Amherst, Horse Shoes, 50 cts.
Walter Field, Leverett, gratuity, \$1		Graves & Hatch, North Leverett, superior Hoes, 50 cts.
BUITER—TWENTY SIX ENTRIES.		BROOMS, BRUSHES, PAPER, &c.
Mrs. H. Henderson, Sunderland, \$2		R. B. Hills, North Hadley, 12 Corn Brooms, 75 cts.
Mrs. Samuel T. Hill, Amherst, 1,50		R. B. Hills, North Hadley, 12 Corn Brushes, 75 cts.
Mrs. John Lyman, " 1		Hubbard Lawrence, gratuity, for Brooms, 50 cts.
Mrs. Simeon Clark, " 50 cts.		J. S. & C. Adams, Amherst, Letter and Printing Paper, \$1
CHEESE—THIRTY ENTRIES.		Gilbert A. Smith, So. Hadley, Wrapping Paper, 50 cts.
William Merrick, Amherst, \$2		E. & J. Cushman, Amherst, Board Paper, 50 cts.
Mrs. Stillman Kellogg, Hadley, 1		D. H. & H. C. Kellogg, Amherst, Boots and Shoes, 50 cts.
ONE HUNDRED AND TWO LOAVES OF BREAD.		Oliver Watson, Amherst, Boots and Shoes, 50 cts.
Mrs. Charles Adams, Wheat Bread, Amherst, \$1,50		Nathan Clark, Hadley, Plated Wire, 25 cts.
Mrs. Mark Haskell, Amherst, 1		Henry P. Kingsbury, Amherst, Trunk, 25 cts.
Mrs. Eliphalet Clark, Rye Bread, Sunderland, 1,50		A. S. Downs, Amherst, Collars and Hames, 25 cts.
Mrs. Edmund Smith, South Hadley, 1		FARMS—FOUR ENTRIES.
Mrs. George Baker, Amherst, Rye Bread, gratuity, 1		E. Pomeroy Cutler, Amherst, \$12
HONEY—TWO ENTRIES.		Linus Green, Hadley, 8
Ransom Dickinson, Sunderland, gratuity, \$1		RECLAIMED MEADOWS—FIVE ENTRIES.
Stoughton D. Crocker, Sunderland, gratuity, 50 cts.		John Shipman, Hadley, \$10
AGRICULTURAL AND MECHANICAL IMPLEMENTS—FORTY ENTRIES.		Leonard Barret, Belchertown, 6
Ruggles, Nourse, Mason & Co., Worcester, Plow No. 73, \$2		
Prouty & Mears, Boston, five Plows and Cultivator, 1		
J. K. Whitmore & Co., Chicopee Falls, 11 Plows, 2 Hay Cutters, 1 Scraper, 1		
Oliver Williams, Sunderland, Corn Planter, 2		

PLOWING—SIXTEEN LOTS PLOWED.		Daniel Currier, Amherst, 1 Beet weighing 9 lb. 10 oz., 25 cts.
Joseph Fogg, Deerfield,	\$6	The Winter Wheat for which a gratuity was awarded to E. Sanderson, was of the white flint variety, and a specimen from 37 bushels 22 qts. grown by him on 140 rods of ground. The pumpkins of Asa Wilson, one of which weighed 49 lbs. were from a lot of 25 tons, grown by him on 6 acres. The bushel of potatoes, for which a gratuity was awarded to Willard M. Kellogg, was grown from one potato, brought from Michigan. The potatoes of B. F. Carter, 44 bushels, were grown from 1½ bushels of seed on 16 rods of ground. They were a variety of Rhode Island potatoes. Samuel A. Newell of Pelham, entered a lot of common English Turnips, weighing 18 lbs. each, and Geo. Dickinson of Hadley, a box of pole Beans, numbering 896, grown by him the past season from a single bean.
William Stroug, Northampton,	4	
Levi D. Cowles, Amherst,	3	
APPLE ORCHARDS—FOUR ENTRIES.		
E. Pomeroy Cutler, Amherst,	8	
Alfred Baker, “	5	
Samuel Harrington, “	3	
PEACH ORCHARDS—FOUR ENTRIES.		
Ephraim Montague, Belchertown,	\$4	
Ezra Willis, Leverett,	2	
PEAR TREES.		
Samuel Harrington, Amherst,	\$3	
VEGETABLES—FIFTY EIGHT ENTRIES.		
Eli Sanderson, Sunderland, Seed Wheat,	\$1	
R. Dickinson, Sunderland, Seed Corn,	75 cts.	
N. Harlow, Amherst, Seed Corn,	50 cts.	
Walter Graves, Leverett, “ “	25 cts.	
H. L. Boltwood, Amherst, basket onions,	75 cts.	
B. Lee, Leverett, specimens on- ions,	50 cts.	
E. Whitney, Montague, basket on- ions,	25 cts.	
B. U. Dickinson, Amherst, lot Squashes,	50 cts.	
Dr. S. Fish, Amherst, 1 Squash,	50 cts.	
Asa Wilson, Belchertown, 2 Pump- kins,	50 cts.	
Elijah Ayres, Amherst, 2 do.,	25 cts.	
T. P. Huntington, Hadley, 5 vari- eties Potatoes,	\$1	
B. F. Carter, North Hadley, Clark Potatoes,	50 cts.	
D. S. Cowles, Hadley, Beets, Car- rot and Turnips,	75 cts.	
George Dickinson, Hadley, 4 Pars- nips,	25 cts.	
Levi D. Cowles, Amherst, two varieties turnips,	25 cts.	
E. C. Thompson, Pelham, 1 Nut- meg Squash and blood beets,	50 cts.	
Miss Eunice Green, Amherst, 2 Cabbages,	25 cts.	
Moses Stebbins, Deerfield, 3 sorts Corn,	25 cts.	
Walter Fuller, Amherst, Cabbage,	25 cts.	
		CARPETING, UNRESSED FLAN- NEL AND HEARTH RUGS—FIFTY ENTRIES.
		CARPETS—THIRTEEN ENTRIES.
		Miss G. Ingram, Amherst, \$1,50
		Mrs. Vienna Cutler, Hatfield, 1
		RUGS—NINE ENTRIES.
		Mrs. Reuben Roberts, Jr., Amherst, \$1
		Miss Cynthia Clark So. Hadley, 50 cts.
		FLANNEL BLANKETS—SIX ENTRIES.
		Mrs. J. A. Clark, Hadley, \$1,50
		Mrs. J. Mary M. Josselyn, Sunderland, 1
		HOSE—SEVEN ENTRIES.
		Mrs. Susannah Kellogg, Amherst, \$2
		Mrs. Robert Cutler, “ 1
		Mrs. Susan D. Shaw, Belchertown, gratuity, for Knitting Work, 50 cts.
		MITTENS—FOUR ENTRIES.
		E. C. Bogue, Amherst, best 2 prs., 50 cts.
		FROCKING.
		Geo. A. Whipple, Amherst, \$1,50
		BROADCLOTH.
		David Mack, Amherst, \$2
		DOMESTIC MANUFACTURES & FANCY ARTICLES—SIXTY-TWO ENTRIES.
		COUNTERPANES.
		Mrs. David Mack, Amherst, \$1,50

- Mrs. Linnell, Amherst, \$1
 Miss P. C. Hastings, Amherst, gra-
 tuity, 50 cts.
 Mrs. Mary C. Fuller, Amherst, coun-
 terpane, gratuity, 50 cts.

FANCY ARTICLES.

- Charles O. Parmenter, Pelham, for
 specimens Monochromatic Draw-
 ing, gratuity, 50 cts.
 Miss Nancy Cutler, Amherst, for
 Worsted work consisting of Stand
 Spread and Ottoman Covering, 50 cts.
 Miss Emeline Prevear, Amherst, raised
 Worsted work, 50 cts.
 Miss Mary E. Pomeroy, St. Louis,
 Portfolio, Worsted work, 25 cts.
 Misses A. J. Chamberlain & A. A.
 Fay, Amherst, Moss Cottage, 25 cts.
 Miss Mary Hitchcock, Amherst,
 Lamp Mat, 25 cts.
 Master A. E. Warner, Amherst,
 Worsted Chair Cover, 25 cts.
 E. E. Hayward, Hadley, Court Plas-
 ter, 50 cts.
 E. S. Snell, Amherst, Box of Tama-
 rind wood, Ceylon, together with
 13 other kinds of wood, skilfully
 inlaid and polished, \$1
 Master Truman Thompson and Miss
 Anna Nash, Amherst, pencil draw-
 ings, each 25 cts.

- Misses P. C. Weeks and S. H. Rob-
 inson, Amherst, Book Marks,
 each 10 cts.
 Miss Martha B. Kellogg, Hadley,
 Straw Bonnet, of queen's braid,
 made of straw grown in Amherst,
 together with specimens of straw
 braid and millinery, 50 cts.
 D. J. Bartlett, and E. S. & F. A.
 Pierce, Cases of Millinery, each \$1
 Miss Fanny Smith, Granby, Worst-
 ed work, 25 cts.
 Specimen artificial Pinks not num-
 bered, 20 cts.
 Miss Sarah Ingram, Amherst, for
 wrought Slippers, 25 cts.
 Mrs. Sobia Wright, Northampton,
 1 pair Silk Stockings, 25 cts.
 The Committee also noticed a speci-
 men of a new system of Drawing,
 adapted to secure peculiar accuracy and
 ease in copying from nature, by Mr. B.
 S. Harris of North Brookfield.

A case exhibiting some beautiful
 specimens of Book binding, also Port-
 folios of Papier Mache, also some beau-

tiful Mathematical instruments, with
 various other articles to please the eye
 and adorn the parlor or the student's
 table, were exhibited by Messrs. J. S.
 & C. Adams, Amherst.

Three beautiful specimens Lamp
 Shades, were furnished by Mrs. G.
 Cook, Mrs. S. C. Carter, and Mrs. Dr.
 Belden of Amherst.

Specimens of Penmanship by C. E.
 Tapley, Amherst, and G. H. Brown
 of Granby.

Specimens of Daguerreotypes Mr. J.
 D. Wells of Northampton and E. G.
 Shumway of Amherst.

A very beautiful boquet of flowers,
 made of the plumage of South American
 Birds, was furnished by Mrs. Leander
 Dickinson of Amherst. Also beautiful
 boquets of artificial flowers, by vari-
 ous contributors.

Specimens of Silk Cocoons, and Ori-
 ental Manufactures, were furnished by
 Dr. Stebbins of Northampton, viz : 4
 cards Persian Silk, one card American
 and other samples; one card of Mul-
 berry Canton leaf, one pair Silk Socks
 knit by Mrs. Sophia Wright, Northamp-
 ton; Silk Apron of bark made with-
 out the instrumentality of the worm.

FRUIT AND FLOWERS.

Whole number of entries of fruit, 51.
 Different varieties 404. Entries of Ap-
 ples 26, varieties 345; Pears 3, vari-
 eties 55; Quinces 16, varieties 3; Grapes
 6, varieties 1, Isabella.

APPLES.

- J. S. Adams, Amherst, \$1
 Daniel Dickinson, " 75 cts.
 Asher Shepard, Northampton, \$2
 Rufus Scott, Hadley, 50 cts.
 Edwin Smith, South Hadley, 50 cts.
 Daniel Stockwell, Hadley, 50 cts.
 Josiah Ayres, Amherst, 50 cts.
 Linus Green, Hadley, 50 cts.
 Edward Hitchcock, Amherst, 50 cts.
 Ezra Willis, Leverett, 50 cts.
 Samuel Prince, Amherst, 50 cts.
 Dwight H. Kellogg, Amherst, 50 cts.
 S. K. Eastman, " 30 cts.

PEARS.

- Hon. M. P. Wilder, Dorchester, \$1
 Samuel Harrington, Amherst, 50 cts.

QUINCES.		Ransom Dickinson, Sunderland, 25 cts.
A. S. Bartlett, Granby,	50 cts.	Ephraim Montague, Belchertown, 25 cts.
William Boltwood, Amherst,	25 cts.	Luke Sweetser, Amherst, gratui-
J. P. Grey, Amherst, gratuity,	25 cts.	ty, _____ 25 cts.
GRAPES.		Miss Abby F. Adams, Amherst,
Mrs. Emerson, Amherst,	50 cts.	for Lemon Tree, 25 cts.
Prof. W. C. Fowler, "	25 cts.	

TREASURER'S REPORT.

EXPENDITURES.

In anticipation of grant of State Bounty for 1851, \$600.

PERMANENT FUND.

Amount securely invested and bearing interest, \$3,150.

J. W. BOYDEN, *Treasurer.*

OFFICERS OF THE SOCIETY.

1851.

PRESIDENT

ALFRED BAKER, of Amherst.

VICE PRESIDENTS.

LUKE SWEETSER, of Amherst.

JOSEPH SMITH, of Hadley.

PAOLI LATHROP, of South Hadley.

JOSIAH B. WOODS, of Enfield.

HORACE HENDERSON, of Sunderland.

SECRETARY AND TREASURER.

JAMES W. BOYDEN, of Amherst.

EXECUTIVE COMMITTEE.

HORACE KELLOGG, of Amherst.

SAMUEL POWERS, of Hadley.

CHARLES ADAMS, of Amherst.

WILLIAM THAYER, of Belchertown.

ASA L. FIELD, of Leverett.

BENJAMIN WITT, of Granby.

WILLARD M. KELLOGG, of Amherst.

HAMPSHIRE AGRICULTURAL SOCIETY.

LIFE MEMBERS.

AMHERST.

Adams, Charles	Bogue, Elisha Mrs.
Adams, Charles Mrs.	Boyden, James W.
Adams, John S.	Boyden, James W. Mrs.
Adams, John S. Mrs.	Brewster, John M. Jr.
Ainsworth, Forrester	Bridgman, Guilford
Allen, Benjamin W.	Bridgman, Henry A.
*Allen, Hiram H.	*Bridgman, Jonathan
Allen, Hiram H. Mrs.	Bridgman, Mary S.
Allen, Martha L.	Briggs, Ebenezer
Allen, Nathaniel	Briggs, Ebenezer Mrs.
*Ames, Edwin	Brown, Smith
Angier, Asubah Mrs.	Burnham, George Jr.
Ayres, Elijah	Burnham, George Jr. Mrs.
Ayres, Elijah Mrs.	Cadwell, Aretas J.
Ayres, Josiah	Cadwell, Aretas J. Mrs.
Baker, Alfred	Carter, Samuel C.
Baker, Alfred Mrs.	Carter, Samuel C. Mrs.
Baker, Enos	Chandler, Aaron M.
Baker, George	Church, Elihu S.
Baker, George Mrs.	Church, Elihu S. Mrs.
Baker, Joel	Clark, Simeon
Bangs, Charles H.	Clark, Simeon Mrs.
Bangs, Danforth K.	Colton, A. M. Rev.
Bangs, Danforth K. Mrs.	Colton, A. M. Mrs.
Barnard, Alvan	Colton, Joseph
Barnard, Alvan Mrs.	Cook, David S.
Bartlett, David	Cook, David S. Mrs.
Bartlett, David Mrs.	Cook, Edwin E.
Belden, Aaron	Cook, Enos F.
Belden, Horace	Cook, George Rev.
Belden, Timothy C.	Cook, George Mrs.
Blodgett, Henry	Cooley, Alden
Boltwood, Lucius	Cooley, Moses D.
Boltwood, William	Conkey, Ithamar
Boltwood, William Mrs.	Conkey, Ithamar F. Mrs.
Bogue, Elisha	Converse, Daniel

- Converse, Daniel Mrs.
 Cowles, Chester
 Cowles, Chester Mrs.
 Cowles, Clinton J.
 Cowles, Clinton J. Mrs.
 Cowles, Enoch
 Cowles, Enoch Mrs.
 Cowles, Erastus
 Cowles, Erastus Mrs.
 Cowles, James
 Cowles, James Mrs.
 Cowles, Jonathan
 Cowles, Jonathan Mrs.
 Cowles, Jonathan Jr.
 Cowles, Jonathan Jr. Mrs.
 Cowles, Julia B.
 Cowles, Levi D.
 Cowles, Levi D. Mrs.
 Cowles, Moses
 Cowles, Moses Mrs.
 *Cowles, Oliver
 Cowles, Ransom
 Cowles, Ransom Mrs.
 Cowles, Submit Mrs.
 Curtis, Oliver H.
 Curtis, Oliver H. Mrs.
 Cushman, John R.
 Cushman, John R. Mrs.
 Cutler, Esther
 Cutler, Elisha P.
 Cutler, George
 Cutler, George Mrs.
 Cutler, Robert
 Cutler, Robert Mrs.
 Cutler, Samuel F.
 Cutler, William
 Cutler, William Mrs.
 Dana Joseph
 Darling, Benjamin R.
 Dexter, David
 Dexter, David Mrs.
 Dickinson, Asa & Noble
 Dickinson, Bela U.
 Dickinson, Bela U. Mrs.
 Dickinson, Charlotte
 Dickinson, Daniel
 Dickinson, Daniel Mrs.
 Dickinson, Daniel A.
 Dickinson, Emily E.
 Dickinson, Edward
 Dickinson, Edward Mrs.
 Dickinson, Enos
 Dickinson, Enos Mrs.
 Dickinson, Enos 2d
 Dickinson, Enos 2d Mrs.
 Dickinson, John
 Dickinson, John Mrs.
 Dickinson, Joseph
 Dickinson, Josiah
 Dickinson, Lavinia A.
 Dickinson, Lovina
 Dickinson, Lucius
 Dickinson, Marquis F.
 Dickinson, Marquis F. Mrs.
 Dickinson, Moses B.
 Dickinson, Moses B. Mrs.
 Dickinson, Oliver
 Dickinson, Oliver Mrs.
 Dickinson, Sarah M.
 Dickinson, Samuel S.
 Dickinson, Samuel S. Mrs.
 Dickinson, Waitstill
 Dickinson, Waitstill Mrs.
 Dickinson, William
 Dickinson, William Austin
 Dickinson, William 2d
 Dickinson, William E.
 Dickinson, William W.
 Downs, A. S.
 Draper, Lewis L.
 Dutton, Alonzo
 Dutton, Alonzo Mrs.
 Eastman, Austin
 Eastman, Austin Mrs.
 Eastman, Baxter
 Eastman, Baxter Mrs.
 Eastman, Solomon K.
 Eastman, Solomon K. Mrs.
 Edwards, Simeon
 Ferry Sarah P.
 Field, D'Estaing Mrs.
 Fish Cummins.

- Fish, Seth
 Fish, Seth Mrs.
 Fitch, Newton
 Fitch, Newton Mrs.
 Fowler, Emily
 Fowler, William C.
 French, Mary F.
 Fuller, Walter
 Gaylord, Flavel
 Gaylord, Ebenezer
 Gaylord, Ebenezer Mrs.
 Gaylord, Eleazer
 Gaylord, William
 Godfrey, William B.
 Goodell, Noble T.
 Goodell, Rufus
 Goodell, Rufus Mrs.
 Gray, Joseph P.
 Gray, Joseph P. Mrs.
 Green, Eunice
 Gridley, Timothy J. Dr.
 Grout, Austin
 Gunn, Lyman
 Gunn, William F.
 Hammond, Salem
 Hammond, Salem Mrs.
 Harlow, Nathaniel L.
 Harrington, Samuel
 Harrington, Samuel Mrs.
 Hastings, Edmund
 Hastings, Edmund Mrs.
 Hastings, Joseph C.
 Hastings, Joseph C. Mrs.
 Hastings, Thomas
 Hastings, Thomas Mrs.
 Haven, Joseph Prof.
 Haven, Joseph Mrs.
 Hawley, Charles M.
 Hawley, Harrison
 Hawley, Justin
 Hayward, Charles F.
 Hayward, Charles F. Mrs.
 Henderson, Timothy
 Hills, Leonard M.
 Hills, Leonard M. Mrs.
 Hills, Liberty
 Hills, Liberty Mrs.
 Hills, Samuel
 Hills, Samuel T.
 Hitchcock, Edward
 Hitchcock, Edward Mrs.
 Hobart, Edmund
 Hobart, George W.
 Hobart, George W. Mrs.
 Hobart, Jeremiah W.
 Hobart, Joshua
 Hobart, Stillman
 Hobart, Stillman Mrs.
 Howard, H. C. & M. W.
 Howard, H. C. Mrs.
 Howe, Albin P.
 Howe, Albin P. Mrs.
 Howland, Warren S.
 Howland, Warren S. Mrs.
 Hubbard, Ethan D.
 Hubbard, Ethan D. Mrs.
 Hubbard, Orton
 Ingaam, Ezra
 Ingram, Harrison
 Ingram, Harrison Mrs.
 Ingram, Rufus
 Ingram, Zaccheus C.
 Ingram, Zaccheus C. Mrs.
 Jackson, Henry
 Jewett, George B.
 Johnson, Earl
 Johnson, Earl Mrs.
 Johnson, Orren
 Jones, Thomas
 Jones, Thomas Mrs.
 Kellogg, Ansel W.
 Kellogg, D. H. & H. C.
 Kellogg, Eleazer
 Kellogg, Horace
 Kellogg, Horace Jr.
 Kellogg, James
 Kellogg, Lyman
 Kellogg, Lyman Mrs.
 Kellogg, Wells Sanford
 Kellogg, Willard M.
 Kellogg, Willard M. Mrs.
 Kellogg, William

- Kellogg, William Mrs.
 Kellogg, William Jr.
 Kingman, Cyrus
 Leland, John
 Leland, John Mrs.
 Loomis, Austin
 Lyman, John
 Mack, David
 Mack, David Mrs.
 Marshall, Ansel C.
 Marshall, Joseph E.
 Mather, William E.
 Mather, William F. Mrs.
 McMaster Charles
 McMaster Charles Mrs.
 Merrick James E.
 Merrick, James E. Mrs.
 Merrick, James L. Rev.
 Merrick, James L. Mrs.
 Merrick, Leander
 Merrick, William
 Merrill, Calvin
 Merrill, Calvin Mrs.
 Merrill, Harriet O.
 Montague, Isaac W.
 Moore, Phœbe
 Mosman, Abner G.
 Nash, Charles
 Nash, Charles Mrs.
 Nash, J. A. Rev.
 Nash, Luther
 Needham, Emory H.
 Needham, Emory H. Mrs.
 Nelson, Julia C.
 Newton, Walter
 Nutting, Truman
 Nutting, Truman Mrs.
 Palmer, Frederic A.
 Palmer, Frederic A. Mrs.
 Payson, Joseph R.
 Pierce, E. S. & F. A.
 Pierce, Francis A. Mrs.
 Pomeroy, David
 Pomeroy, David Mrs.
 Potwine Thomas
 Prince, Samuel
- Rankin, John
 Reed, Thomas
 Reed, Thomas Mrs.
 Rice, Alpheus
 Roberts, Fanny H.
 Robins, Alva
 Robins, Z. W.
 Robins, Z. W. Mrs.
 Robinson, Ferdinand Mrs.
 Robinson & Ainsworth
 Russell, Chauncy R.
 Russell, Emerson
 Russell, Emerson Mrs.
 Sanford, John Rev.
 Sanford, John Mrs.
 Sears Simon
 Segraves, Horatio
 Sheperd Charles U.
 Slate, Jonathan S.
 Smith B. F. Dr.
 Smith, B. F. Mrs.
 Smith, Charles
 Smith, Charles Mrs.
 Smith, Cotton
 Smith, H. B. Prof.
 Smith, Newman Dr.
 Smith, Newman Mrs.
 Smith, Samuel D.
 Smith, Timothy
 Smith, Timothy Mrs.
 Smith, William
 Snell, E. S. Prof.
 Snell, E. S. Mrs.
 Spaulding, Phillip D.
 Spear, Ebenezer P.
 Spear, Lyscum
 Spear, Lyscum Mrs.
 Spear, Myrick N.
 Sprague, Joseph G.
 Stanley, Edward A.
 Stratton, Chester
 Stratton, Chester Mrs.
 Strickland, William G.
 Strickland, William G. Mrs.
 Sweetser, Hannah
 Sweetser, Luke

Sweetser, Luke Mrs.
 Tapley, George W.
 Taylor, Stillman
 Thayer, Jason
 Thayer, Jason Mrs.
 Thayer, Jonathan
 Thayer, Jonathan Mrs.
 Thayer, Reuben
 Thayer, Savannah A.
 Thayer, Savannah A. Mrs.
 Trumbull, James R.
 Trumbull, James R. Mrs.
 Turner, Rodolphus
 Tyler, Wm. S. Prof.
 Tyler, Wm. S. Mrs.
 Warner, Aaron Prof.
 Warner, Aaron Mrs.
 Warner, David S.
 Warner, George
 Watson, Oliver
 Watson, Oliver Mrs.
 Wheelock, Dana
 Wheelock, Russell T.
 *Whipple, David
 Whipple, George A.
 White, Samuel N.
 White, Samuel N. Mrs.
 Whitney, Simon W.
 Williams, Ebenezer
 Williams, Enos D.
 Williams, Frederic
 Williams, Orren
 Williams, Orren Mrs.
 Woodman, George S. Dr.
 Woodman, George Mrs.
 Woodworth, Charles L. Rev.
 Woodworth, Charles L. Mrs.
 Wright, Sylvanus M.
 Wright, Sylvanus M. Mrs.

BELCHERTOWN.

Alden, Thomas
 Arnold, Bernard
 Barrett, Leonard
 Chandler, George

Dorman, Roderic
 Dunbar, Charles T.
 Dwight, Nathaniel Jr.
 Gilbert, Wareham C.
 Goodell, Asahel
 Hannum, Gamaliel
 Hannum, Lyman W.
 Holland, Luther
 Lawrence, Myron
 *Longley Joshua
 Montague, Ephraim
 Russell, Francis H.
 Sabin, Lyman
 Sisson, John
 Thayer, Hezekiah
 Thayer, Rufus
 Thayer, William
 Towne, Israel
 Wilson, Asa

CONWAY.

May, Cephas

DEERFIELD.

Fogg, Josiah
 Stebbins, Evander G.
 Stebbins, Moses
 Stebbins, Moses Mrs.

ENFIELD.

Fobes, Henry
 Smith, Alvan
 Woods, Josiah B.

GRANBY.

Ayres, Samuel
 Barton, James M.
 Barton, Phineas D.
 Chapin, Philo
 Ferry, Lucius
 Paterick, William J.
 Preston, John H. D.

Stebbins, Cyrus
 Warner, Alouzo
 Warner, Park
 Witt, Benjamin
 Witt, Horace

GREENFIELD.

Frink, Henry
 Frink, Henry Mrs.

GREENWICH.

Earl, Luke

HADLEY.

Adams, Benjamin
 Adams, Benjamin Mrs.
 Adams, Joseph
 Adams, Levi
 Adams, Levi Mrs.
 Carter, Benjamin F.
 Comins, Simon F.
 Cowles, Asa
 Cowles, Daniel
 Cowles, Daniel Mrs.
 Cowles, David S.
 Cowles, David S. Mrs.
 Cowles, Elijah
 Cowles, Elijah Mrs.
 Cowles, Lewis
 Cowles, Lewis Mrs.
 Dickinson, Dexter C.
 Dickinson, Elihu S.
 Dickinson, George
 Dickinson, Samuel Jr.
 Dickinson, William P.
 Dickinson, William P. Mrs.
 Granger, Lorenzo N.
 Granger, Lorenzo N. Mrs.
 Gray, Amos
 Gray, Chester
 Green, Dorus
 Green, Dorus Mrs.
 Green, Henry
 Green, Linus

Green, Linus Mrs.
 Hayward, E. E.
 Hibbard, Albert
 Hibbard, E.
 Hill, Roderic B.
 Hooker, Benjamin
 Huntington, Theophilus P.
 Huntington, Theophilus P. Mrs.
 Kellogg, Martin
 Kellogg, Martin Mrs.
 Kellogg, Sillman
 Kellogg, Stillman Mrs.
 Lamson, Charles E.
 Leonard, Dexter M.
 Marsh, Timothy S.
 Morton, John A.
 Morton, John A. Mrs.
 Marsh, John W.
 Nash, Samuel
 Nash, Samuel Mrs.
 Osborn, John
 Pasco, Theodore
 Pasco, Theodore Mrs.
 Porter, Eleazer
 Porter, Edwards J.
 Porter Edwards Mrs. J.
 Powers, Alfred
 Powers, Alfred Mrs.
 Powers, Samuel
 Powers, Samuel Mrs.
 Russell, Calvin
 Russell, Calvin Mrs.
 Russell, Horace
 Russell, Horace Mrs.
 Russell, John
 Russell, John Mrs.
 Russell, Levi
 Russell, Levi Mrs.
 Sabin, Sherman
 Sabin, Sherman Mrs.
 Scott, Rufus
 Shipman, John
 Shipman, John Jr.
 Smith, Cotton
 Smith, Cotton Mrs.
 Smith, Chester
 Smith, Edmund

Smith, Erastus
 Smith, Giles E.
 Smith, Horace
 Smith, Jeriah S.
 Smith, Joseph
 Smith, Joseph Mrs.
 Smith, Royal W.
 Smith, Thaddeus
 Smith, Thaddeus Mrs.
 Sotekbridge, Levi
 Tower, Samuel
 Wallis, Addi
 West, Parsons
 West, Parsons Mrs.
 White, Samuel S.
 Williams, P. Smith

LEVERETT.

Adams, Alden
 Ashley, Marvin
 Ashley, Marvin Mrs.
 Ball, Orus
 Ball, Orus Mrs.
 Ball, Silas
 Bangs, Howard
 Boutwell, Levi
 Eastman, David Rev.
 Field, Alden C.
 Field, Asa L.
 Field, Asa L. Mrs.
 Field, Charles H.
 Field, Harrison O.
 Field, Harrison O. Mrs.
 Field, Moses
 Fitts, Elijah B.
 Graves, Kellogg
 Graves, Levi M.
 Hobart, Baxter
 Hobart, Charles D.
 Hobart, Peter
 Hobart, Spencer
 Ingram, Elijah M.
 Porter, Cephas
 Putnam, Timothy
 Putnam, Timothy Mrs.
 Woodbury, Jason H.

NORTHAMPTON.

Arnold, W. A.
 Baker, Osmyn Hon.
 Clapp, D. M.
 Clark, William Jr.
 Clark, William
 Dickinson, George P.
 Hawks, C. K.
 Hinckley, Samuel L.
 Hillyer, Winthrop
 Kirkland, Harvey
 Sheperd, Asher
 Sheperd, Henry
 Smith, S. M.
 Strong, Elisha
 Thayer, Justin
 Washburn, Luther I.
 West, Joseph I.
 Wilson, J. W.
 Wright, Ansel

PELHAM.

Aldrich, Asahel
 Aldrich, Nehemiah W.
 Ballou, Emery
 Ballou, Hiram
 Barrows, Isaac
 Buffum, Thomas
 Carter, John
 Cook, Olney
 Fales, Abijah
 Hall, John B.
 Newell, Samuel H.
 Rankin, Ansel A.
 Russell, John
 Ward, Joseph G.

SHUTESBURY.

Adams, Silas W.
 Adams, Ward D.
 Dudley, Samuel F.
 Fitts, Edward
 Howe, Abraham S.

Shores, David

SOUTHAMPTON.

Edwards, Elisha

SOUTH HADLEY.

Allen, Levi W.

Alvord, Hervey

Bates, Emerson

Burnett, Nelson W.

Clark, Marcellus

Gaylord, Lorenzo

Kellogg, Amos

Lathrop, Paoli

Lyman, George J.

Lyman, Lorenzo W.

Montague, C. Newton

Nash, Thomas M.

Smith, Edmund

Smith, Edmund Mrs.

Smith, Gilbert A.

Smith, Jason

Smith, William B.

Snow, Sheldon

SUNDERLAND.

Cooley, Charles

Crocker, Stoughton D.

Dickinson, Ebenezer P.

Dickinson, Ransom

Dickinson, Ransom Mrs.

Graves, George W.

Graves, Hubbard

Graves, Timothy

Grover, Josiah

Henderson, Horace

Henderson, Horace Mrs.

Hubbard, Ashley

Hubbard, Ashley Mrs.

Hubbard, Avery D.

Hubbard, Rodolphus B.

Lyman, Horace

Montague, Albert

Russell, William W.

Russell, William W. Mrs.

Sanderson, Eli

Smith, Austin

Smith, N. Austin

Warner, James R.

Wiley, Dolly F.

Wiley, Ebenezer

Wiley, Ebenezer Mrs.

Wiley, John

Williams, Oliver

*Deceased.

RECAPITULATION.

Amherst, - - - - -	388
Belchertown, - - - - -	23
Conway, - - - - -	1
Deerfield, - - - - -	4
Enfield, - - - - -	3
Granby, - - - - -	12
Greenfield, - - - - -	2
Greenwich, - - - - -	1
Hadley, - - - - -	93
Leverett, - - - - -	28
Northampton, - - - - -	19
Pelham, - - - - -	14
Shutesbury, - - - - -	6
Southampton, - - - - -	1
South Hadley, - - - - -	18
Sunderland, - - - - -	28
Whole No. of Life Members,	<hr/> 641

APPENDIX.

Report to the Massachusetts Board of Agriculture, by Hon. Marshall P. Wilder, President of the Board, and Delegate to the Exhibition of the Hampshire Agricultural Society.

The undersigned, appointed to visit the HAMPSHIRE AGRICULTURAL SOCIETY, herewith submits the following

REPORT :

In pursuance of the duty assigned, your Delegate proceeded to Amherst, where he met with a cordial reception and was most hospitably entertained during his stay. Every facility was afforded by the Government of the Association, for examination of all departments of its extensive and interesting Exhibition. The excellence and variety of the contributions, was gratifying and encouraging. The whole Show was honorable to the Society, especially to the Officers and Committees, upon whom devolved the laborious duties of superintendence.

The attendance was large. We observed Representatives of several of our Agricultural Societies and many gentlemen of distinction in the cause of Agriculture from other parts of the State.

It was particularly cheering to all, who have at heart the advancement of Agriculture, to witness the large number of professional gentlemen, for which Amherst is so celebrated, coming forward, with a helping hand, and coöperating with the intelligent farmers of Hampshire County, in behalf of an Institution for the promotion of that most important and useful pursuit, the culture of mother earth.

Never, before, have we witnessed so strong a representation of the learned professions, actively connected with an Agricultural Society, as in the case of the Hampshire. Some of these gentlemen have long been distinguished, not only throughout our own Country, but in Europe, for their scientific attainments, and, particularly, in those de-

partments of science, upon which depend the arts of successful cultivation.

Located as the Hampshire Society is, in the immediate vicinity of one of the Colleges of our beloved Commonwealth:—a College celebrated for its attention to the Natural Sciences;—and in the valley of the Connecticut River, where the soil is remarkably productive and well adapted to the raising of Cattle and of Agricultural Products, there can scarcely a doubt arise, that the Hampshire Society will at once take and easily maintain an elevated rank among kindred Institutions. In truth, high as were our expectations, the Society's Exhibition very far surpassed our anticipations.

It was, also, a source of great satisfaction to notice the lively interest manifested by the Ladies—not only the wives and daughters of the farmers, but of other classes—who, as representatives of female industry, graced the Exhibition with the beautiful fabrics of Woman's skill and taste.

At the various points of interest, the number of visitors was large. The Halls set apart for the display of Fruits and Flowers, the Dairy, Domestic Manufactures, and Agricultural Implements, were thronged during the day—all anxious to participate in the triumphs of Art and in the success of the Society.

The first object, which attracted the attention of your Committee, was the long procession of Working Cattle—composed of “*Town Teams*,” occupying a large portion of the spacious common. The most extensive of these was the *string from Belchertown, numbering two hundred Oxen in pairs*, and attached to a car, ornamented with banners, containing one hundred and eighty intelligent farmers and an excellent band of music. There were long strings from the towns of *Granby* and *Leverett* and a private team of nine yoke from *Hadley*; the whole making a grand display of nearly four hundred Working Oxen. These were generally in fine order, of good size, and well proportioned. Some pairs were nicely matched, a pleasing and important feature, whether we have regard to fancy, usefulness, or value.

Your Committee noticed, also, about sixty steers in pairs, some of which were superior; also, some good specimens of full blood and grade stock; a very respectable delegation of bulls, milch cows, heifers, and calves, which purported to be of “*Native American*”

origin. The whole number of *Neat Cattle* on the common, was five hundred.

The display of horses was extensive. More than one hundred specimens occupied the stations, assigned to them and gave general satisfaction. Although there were few animals of high grade, yet there were some superior beasts; which indicated that attention had been bestowed on their breeding and that commendable efforts are in progress for the improvement of the noble Horse. In the Poultry department, were six hundred specimens—many of them of improved varieties—which affords satisfactory evidence of the interest felt in Hampshire County, in the rearing of superior Fowls. Your delegate gave a cursory examination to the sheep and swine—which formed an interesting portion of the Exhibition and attracted the attention of visitors.

The Pomological department was very well represented, particularly, with Apples. The display consisted of more than four hundred plates. Many specimens were of the most popular varieties in cultivation, and which, for size and beauty, could hardly be surpassed in New England. We were happy to learn, that an increasing interest prevails among the farmers of the Connecticut Valley in the culture of fine fruits. The perfection and general excellence of those on exhibition, indicate that Hampshire County could make this branch of cultivation successful and profitable.

The Plowing Match, always a scene of interest and excitement, was witnessed by a large number of spectators. There were about twenty teams, which entered the list for competition. The land was rather stiff and stony, well adapted to try the skill of the teams. The work was remarkably well done, under the circumstances; some of the plowmen managing with great ability and skill.

We noticed here, as well as at the Exhibitions of other Agricultural Societies, the Michigan Sod and Sub-soil Plow. It resembles, if it is not identical, with the *Plow of Morton*, described in a recent French Publication, in possession of President Hitchcock. This Plow in the opinion of your Delegate, is worthy of all the commendation, which has been bestowed upon it, in this country. From personal experience, and from an opportunity of witnessing its performance, your Committee recommend it, as worthy of adoption by every farmer. At no trial, either at the exhibition of the Hamp-

shire, or at the exhibitions of other Societies, has the work of this Plow been surpassed by others. Your Committee are happy to learn from Hon. J. W. Proctor, the experienced President of the Essex Society, that the power required for its draft is not greater, than is necessary for the common Plow, with one share. The Michigan Plow is constructed with two shares; one in advance, turning over the sod; and the other covering it with the lower soil. This process exposes to the beneficial influences of the atmosphere, the inorganic substances of the Sub-soil which are thrown up; and by covering the sod, prevents the escape of the fertilizing gasses, during its decomposition. For turning in of grass lands and stubble, this Implement is considered, one of the most important, that has recently come to notice.

The Annual Address was delivered in the Chapel of the College to a large audience. The object of the Speaker was to establish the importance of thorough education of the farmer for his business; and to show the necessity of improvement in the agriculture of the State. The strong men of Hampshire County, their intelligent wives and fair daughters; their learned Professors and Students of Science duly estimate the importance of Agricultural Education and of Agricultural Improvement.

Your Committee would not omit to mention that indispensable part of the exercises of the day, the Annual Dinner. This was attended by about three hundred Ladies and Gentlemen, who sat down to tables abundantly spread with the fat things of the land, and ornamented with the offerings of Flora and Pomona. Alfred Baker, Esq., President of the Society, after the temporal wants of the Assembly had been amply satisfied, called out Mr. Boyden, the indefatigable Secretary of the Association, who made a brief and satisfactory Report on the progress and condition of this hopeful Institution. After a song by the College Glee Club, the Chairmen of the Examining Committees announced the Premiums. The President then introduced Hon. Edward Dickinson, as Master of Ceremonies, during the intellectual treat. Mr. D. made an able and eloquent speech, and was followed by Hon. J. W. Proctor, President of the Essex Society; Hon. Geo. T. Davis, Representative in Congress, from the Sixth District; Hon. B. V. French of Braintree; the Orator of the Day; and gentlemen of distinction in the cause of Agriculture, from

other parts of the State. Letters or Sentiments were read from Col. Page, President of the Bristol Society, Lt. Gov. Cushman, President of the Franklin Society, Hon. Daniel Webster, Hon. R. C. Winthrop, Governor Boutwell and Ex Governor Briggs; After this "feast of reason and flow of soul," the members of the Society and their Guests separated, highly pleased with the events of the day.

Your Committee, in closing this Report, tenders his thanks to the Officers and Members of the Hampshire Society, and to the citizens of Amherst, for their attentions and their hospitality.

Your Delegate is convinced that this Society is destined to maintain its prominent position, among kindred Societies. The Hampshire Society has many natural advantages; great facilities for the acquisition and diffusion of scientific information, and its members display remarkable activity and enterprise.

Your Delegate, therefore, congratulates this Board, on the addition of this promising member to the Agricultural family.

All which is respectfully submitted.

MARSHALL P. WILDER.

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