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THE
PROCEEDINGS AND REPORTS

OF THE

Massachusetts Board of Agriculture,

FOR 1851-2.

PUBLISHED FOR GRATUITOUS DISTRIBUTION BY THE MASSACHUSETTS
SOCIETY FOR THE PROMOTION OF AGRICULTURE.

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1852.



MASSACHUSETTS BOARD OF AGRICULTURE.

IN publishing the Transactions of the Massachusetts Board of Agriculture, it may not be uninteresting to give a sketch of the origin of the Board, with some account of the doings of the Convention, which immediately preceded it.

At a meeting of the Trustees of the Norfolk Agricultural Society, January 28, 1851, it was *voted*, "that the president and secretaries be a committee to mature and adopt a plan for a convention of delegates from the various agricultural societies of the Commonwealth, to be holden at some convenient time and place, the object of which shall be to concert measures for their mutual advantage, and for the promotion of the cause of agricultural education."

In the discharge of their duty, the president, MARSHALL P. WILDER, and the secretaries, EDGAR K. WHITAKER and EDWARD L. KEYES, as this committee, addressed communications to the presidents of the several agricultural societies in the State, who cordially approved of the plan of the convention and united in calling it. The convention was accordingly announced to be holden at the State House, in Boston, on Thursday, March 20th, 1851, and in order to increase the interest and usefulness of the occasion, the officers and trustees of the abovenamed societies, and such delegations as might represent them, were invited to attend.

ASSOCIATED AGRICULTURAL CONVENTION.

On the day named, the convention assembled, at 10 o'clock, in the Green Room, and was organized by the choice of the following officers, the vice presidents being the presidents of the several societies represented by them :

PRESIDENT.

MARSHALL P. WILDER, OF THE NORFOLK SOCIETY.

VICE PRESIDENTS.

JOHN C. GRAY, . . .	OF THE STATE SOCIETY.
LEVI LINCOLN, . . .	“ WORCESTER SOCIETY.
JOHN W. PROCTOR, .	“ ESSEX SOCIETY.
E. R. HOAR,	“ MIDDLESEX SOCIETY.
MORGAN LEWIS, . . .	“ BERKSHIRE SOCIETY.
SETH SPRAGUE, . . .	“ PLYMOUTH SOCIETY.
J. H. W. PAGE, . . .	“ BRISTOL SOCIETY.
WILLIAM CLARK, . .	“ { HAMPSHIRE, HAMPDEN AND FRANKLIN SOCIETY.
JEREMIAH MAYO, . .	“ BARNSTABLE SOCIETY.
JOSIAH HOOKER, . .	“ HAMPDEN SOCIETY.
GILBERT MONSON, . .	“ HOUSATONIC SOCIETY.
ALFRED BAKER, . . .	“ EAST HAMPSHIRE SOCIETY.
HENRY W. CUSHMAN,	“ FRANKLIN SOCIETY.
GEORGE DENNY, . . .	“ WESTBOROUGH SOCIETY.

SECRETARIES.

E. K. WHITAKER, OF NEEDHAM,
 E. L. KEYES, OF DEDHAM,
 WILLIAM S. LINCOLN, OF WORCESTER,
 SAMUEL A. DEAN, OF TAUNTON.

The blessing of Heaven was invoked upon the convention by Rev. Mr. Huntington, of Boston.

The President, in his opening remarks, said :

It may, perhaps, be expected that your presiding officer should propose business for the convention. There are many subjects which may be introduced, and which, in the opinion of the chair, require attention ; but the suggestion of them will more properly emanate from a business committee, who may be charged with the duty of presenting such topics as are deemed most important.

It may not, however, be improper, in this stage of proceeding, to allude briefly to a few points which may be deemed worthy of consideration.

Among these may be named,

1. The expediency of so arranging the annual exhibitions

of the various local societies, as to permit of more frequent intercourse and interchange of civilities, for the promotion of the great object of their organization.

2. The propriety of adopting a more uniform system as relates to premiums, and the principles upon which they are awarded.

3. It may be important for the convention to inquire into the expediency of constituting a central committee, consisting of representatives from the various county and district societies, who may meet semianually for consultation in regard to their general interests. Individual societies can accomplish much, but associated effort, more.

4. It is also to be hoped that the cause of agricultural education, now about to receive the consideration of the Legislature, will not be overlooked in the deliberations of this body, and if it be the opinion of this convention that agriculture may be promoted by the application of science, that such a sentiment may be expressed in terms so explicit as not to be misunderstood, and that the aid of government may be solicited for this purpose.

And, gentlemen, I submit, in view of the present condition of agriculture in our Commonwealth, whether there is not occasion for the assembling of this convention; whether there is not a necessity for improvement in this most important branch of human industry, and for the patronage of government to place it on a par, at least, with other arts in point of wealth, honor and influence. For if agriculture is the parent of all arts; if it is the basis upon which rests individual and national wealth and prosperity; if it is intimately connected with the virtue and happiness of the community, then it is the duty not only of philanthropists to foster it, but also of government to make it one of the first objects of her guardian care and protection.

Agriculture should especially receive the encouragement of government, because it embraces more than three fourths of our population, because from it is derived a very large proportion of her revenue, and because that large class, who are engaged in it, are, to a great extent, the conservators of the

public good in times of danger and peril. Agriculture is the prominent pursuit. It employs more capital and labor than all other trades and professions, and in proportion as it prospers, will the welfare of the community advance. But how has agriculture progressed with other callings in Massachusetts?

Facts warrant the assertion that there is occasion for great improvement. This is apparent from the rapid increase of population and the comparative decrease of agricultural products in this State. By the report of the valuation committee, it appears that although since 1840 there have been added to the area under improvement in Massachusetts, 342,000 acres of land, which at that time were classed as "*unimproved*," or "*unimprovable*,"—and although the tillage lands have been increased more than *forty thousand acres* in the same time, yet the grain crops have largely decreased; and although, during the same period, the upland and other mowing lands have increased nearly fifteen per cent., yet the hay crops have been increased only about three per cent.

In 1840, the population of Massachusetts was 737,700, requiring, at six bushels per head, 4,426,200 bushels of bread stuffs for their subsistence. Of this, the soil produced 3,705,261 bushels, leaving 700,000 bushels to be supplied by foreign production. But in 1850, the population of the Commonwealth is *one million*, an increase of thirty-three and two thirds per cent., requiring *six millions of bushels of bread stuffs* for consumption, and of which she raises but about *three millions*, leaving *three millions* of bushels to be supplied by foreign production, showing a depreciation in her cereal grains of more than 600,000 bushels; and should the inhabitants of this Commonwealth increase in the same ratio for the next, as for the last ten years, and without a corresponding increase of the grain crops, we shall, at the close of that term, be dependent on foreign sources for nearly *five millions* of bushels of bread stuffs annually.

These facts show that however productive other labor may have been, agriculture has not progressed proportionably with the other arts. It should, therefore, receive the special attention of Massachusetts in **SELF DEFENCE**; for unless our farms

can be made more productive and profitable, we shall continue to be dependent on other portions of our country for a large share of the necessities of life, and her sons will look to other and more fertile lands for a residence.

Agriculture should receive our SPECIAL ATTENTION, for although we may, for the present, purchase with our manufactures the grain and beef and other products we consume, yet the time will come when the manufacturer and mechanic will place himself down by the side of the producer, thus saving the expense of transportation to both, and when Massachusetts will be obliged to rely, more than she now does, on the products of her soil for the support of her population.

Shall we learn wisdom by this experience? Or shall we continue the exhausting process of perpetual cropping, without the application of science to restore the productive energies of the soil? So devastating has been this practice, that *one thousand millions of dollars*, it is estimated, would not more than restore to their primitive richness and strength, the arable lands of the United States, which already have been partially exhausted of their fertility; and that, should this prodigal system continue to the close of the present century, the natural fertility of all the remaining American territory, will, long before that period, have been abstracted.

Is it not, then, a question of vital importance to the Commonwealth whether the great interest of agriculture shall remain stationary, or whether it shall move on in the line of improvement with the other departments of human industry? It is undoubtedly wise policy to encourage and foster any species of industry which is adapted to the wants and conditions of a community; but just in proportion to the prosperity of the agricultural interest, will ultimately be the ratio of success in all the other great industrial pursuits.

Who doubts that our lands are capable of yielding more than double their present productions, with little or no increase of expense? How many thousands of acres there are in the Commonwealth, also, which produce no income whatever, and which, in reality, are the richest portions of our soil, and by the application of science may be made to produce abundantly?

If, therefore, we desire to retain the young farmers of our Commonwealth,—the future pride and support of the State,—we must place within their reach the means of producing a result so desirable.

Similar advances may be realized by the application of science in the improvement of our cattle, horses, swine, &c., and in the saving and scientific application of manures.

Take an example :—

We have 150,000 cows in this Commonwealth. Suppose science enable these, or improved breeds, to yield *one* additional quart of milk per day ; this, at three cents per quart, would increase the productive capital of the State, \$4,500 per day, or \$1,642,500 per year ; or, if *two* quarts per day, a gain of more than *three million dollars* annually.

We have 70,000 horses in the State, and which might, by a better knowledge of the principles of breeding, be improved so as to command at least *fifty dollars* each, more than they are worth at present ; this would increase their value *three millions and five hundred thousand dollars*. Who doubts that with a better understanding of the laws of agricultural chemistry, and the proper adaptation of crops and manures to the soil, that our cereal grains might be increased *ten bushels* to the acre, without additional expense ? This would add *several millions* of dollars to the present amount of products.

Doubtless these results can be attained, or science is a chimaera, and all the laws of animal and vegetable physiology a delusion.

It is susceptible of proof that the loss of manure in the Commonwealth, by misapplication and waste, is more than two millions of dollars per year. Now suppose this enormous loss were appropriated scientifically, who can estimate the additions which it would make to the products of the soil ?

We need information in all these branches of husbandry. We have materials, but they need system ; they need the encouragement and patronage of government. We make no objections to what the Commonwealth has done for educational and charitable purposes. Our Common School Fund now amounts to nearly a million of dollars ; but great as are the

blessings which have flowed from this, why should not a portion of the State income, from the same resource, be appropriated for agricultural education ?

With the view we have taken of the present condition of agriculture in this Commonwealth, is it not the imperative duty of all associations like those we represent, to enlarge their fields of usefulness, and to awaken, if possible, a more earnest interest not only in the minds of our State and National legislators, but throughout all classes of the community on this most important subject.

In conclusion, if agriculture can be promoted by the application of science, then it is the manifest duty of government to extend to it the hand of protection. Massachusetts is world-wide renowned for her system of education. Let her perfect it by extending it to all her sons,—to the farmer as well as to the professional man. Let her legislators take up the subject in earnest. Let them look at the matter with no narrow or grudging policy, but with generous and enlightened liberality. An appropriation now of a *few thousand dollars* for this cause, will add, ultimately, *millions* to the productive capital of the State, and will be of more substantial benefit to her citizens, than any similar appropriation ever made.

Massachusetts has always taken a leading part in most of the great enterprises which mark the progress of society, and we trust that she will not now hesitate to promote by her legislation an interest, which, more than any other, will redound to her future glory and permanent prosperity.

Gentlemen of the Convention : I congratulate you on the large attendance of delegates, all of whom I am most happy to meet on this occasion, and I doubt not that the results of this meeting will not only be productive of good to ourselves, but it is hoped will be of some advantage to those who may come after us.

Upon motion, it was voted, that an invitation be extended to the Governor, Lieutenant Governor, members of the Council, and both branches of the Legislature, to attend the afternoon and evening sessions of the convention.

AFTERNOON SESSION.

The convention assembled in the Representatives' Hall, at 3 o'clock. The attendance was quite large, and among those present were many of the leading agriculturists of the Commonwealth.

Mr. Sewall, of Medfield, from the Business Committee, reported for the deliberation of the convention the following preamble and resolutions:—

Whereas, Agriculture, the parent of the arts, is essential to the subsistence and preservation of the human race, and embraces in itself the elements of national wealth and power,—therefore, be it

Resolved, 1. That the encouragement and advancement of agriculture, should be with us, as it has been with other civilized nations, a leading object of public regard, to be cherished by a generous public sentiment, and liberally sustained by the resources of the Commonwealth.

Resolved, 2. That it is expedient to establish a Central Board of Agriculture, to be composed of delegates from the various incorporated agricultural societies of the Commonwealth, whose duty it shall be to meet semiannually, or oftener, if it shall be deemed expedient, and to recommend to the several societies uniform rules of action, and to take into consideration all subjects pertaining to the interests of agriculture.

Resolved, 3. That, whether acting as individuals, or as representatives, the citizens of the Commonwealth are bound to encourage the application of science to all those branches of industry which minister to human comfort and happiness, and thereby to the wealth and prosperity of the State.

Resolved, 4. That agricultural schools having been found, by the experience of other nations, efficient means in promoting the cause of agricultural education, which is so essential to the prosperity of farmers and to the welfare of communities, it becomes at once the duty and policy of the Commonwealth to establish and maintain such institutions for the benefit of all its inhabitants.

Resolved, 5. That the several plans for an agricultural school, recently reported by the board of commissioners appointed for that purpose, are worthy the profound consideration of the people of Massachusetts, and their representatives in the General Court, as indicating the feasibility and practicability of an establishment worthy that exalted character which the State has secured by the endowment of kindred institutions, designed, like these, for the diffusion of useful knowledge among the people.

Resolved, 6. That inasmuch as agriculture is the chief occupation of her citizens, the Commonwealth, in the organization of its government, should be provided with a department of agriculture, with offices and honors commensurate with the importance of the duties to be discharged, of the abilities to be required, and of the labors to be performed.

Resolved, 7. That the several county and local agricultural societies, (already the adopted children of the Commonwealth,) by their pioneer efforts in diffusing useful knowledge among the people; by their agency in arousing and directing the energies of the farmer in the course of modern improvement, and by the encouragement they offer to every worthy effort of agricultural skill and industry, recommend themselves still more powerfully to the protection and patronage of the Legislature.

Resolved, 8. That the convention respectfully suggests to the Legislature the propriety and expediency of reserving the entire proceeds of the sales of the public lands of the Commonwealth,—from and after the period when the Common School Fund shall have reached the maximum fixed by the act of 1834,—for purposes of education and charity, with a view to extending that aid and encouragement to a system of agricultural education, which the importance of the subject so imperiously demands.

Upon motion of Mr. Sewall, the resolutions were taken up in order, with the exception of those relating to agricultural schools, which were deferred until the last.

The first resolve was read and adopted on motion of Mr. Keyes, of the Norfolk Society.

The second resolution was next read, whereupon Mr. Page, president of the Bristol Society, addressed the convention as follows :—

I do not like to have this resolve pass in silence. I think there is matter there which will commend itself to the judgment of every gentleman who has given the subject of agriculture and agricultural societies in Massachusetts any consideration. We have had agricultural societies for years, in various parts of this Commonwealth. Each has gone on, in its own way, to accomplish the good objects which are proposed by all. But, sir, the action of each of these societies has been isolated, confined to itself, communicated, with very few exceptions, to nobody, except those who happened to be present at the annual exhibitions; and even, sir, where a report is annually prepared, as it has been in the two years of the existence of your society, and in Essex and one or two others, it is a local matter after all, and finds its way into the hands of but very few of the practical farmers of the Commonwealth. The result of this state of things,—this want of coöperation,—has limited the benefit that agricultural societies are capable of accomplishing. The objects for which premiums are awarded

are substantially the same, so far as my observation of the bills of fare has gone, throughout the Commonwealth; differing somewhat according to the peculiar features of the industry in the different parts of the Commonwealth; but, on the whole, they are about the same. The amount of premium offered, differs very essentially. The amount of encouragement which it is thought necessary to bestow upon different branches, differs very materially in different places, though the subject is of equal importance in different parts of the Commonwealth. The mode of operation, the mode of putting on paper that which is thought worth recording, and the extent to which that is done, differs materially in one county from another. There is no concentration. There is no permanent recording. There is no distribution of information. So that these societies, though they have accomplished vast good, have failed, in my judgment, to accomplish the greater amount of good that they might have done.

The proposition before you is for the organization of a Central Committee. The details of the constitution of that body are not carried out in the resolve. But the idea has been suggested that it should be composed of some of the officers of the different societies of the Commonwealth; that they should periodically meet, as suggested in the resolve itself, to devise and recommend to the other societies some uniform mode of action; and that they, beyond that, should take into consideration all those subjects which are useful in agricultural societies.

Now it seems to me, that this proposition needs only to be stated, in order to commend itself to the approbation of every gentleman. It is a very innocent matter, at any rate. Whether the Commonwealth of Massachusetts shall or shall not extend that aid to agriculture, which it has given already to almost everything else,—whether the action of this day shall result in any important good or not to the farmer of Massachusetts,—whether any dollar shall now or hereafter be appropriated to the promotion of agriculture or not, this matter is required equally to be done under the existing state of things, and under any possible future state of things,—whether you have schools or not. They are necessary in order that little county

collections may be made, and that the farmers may there interchange views and may get ideas which they will reduce to practice. They will be necessary in order that men may encourage each other by acting together, to talk over these subjects of common interest. If you have your agricultural schools or not, carried on under any plan, still I think you need these same agricultural societies, as their business is distinct entirely from that of your agricultural schools, each working in its own department in the same great cause. And, in any event, while you have these agricultural societies you will need this central association in order that they may all stand on the same platform, that they may have the same object in view, and the same general mode of carrying out and attempting to accomplish that object.

It is supposed that this association, formed of delegates from each of the societies, would come together at stated periods, and have meetings other than stated ones, whenever occasion may require ; that facts of interest may be laid before them ; that the light of minds from all parts of the Commonwealth may be brought to bear ; that they may devise rules which may be presented to the several societies throughout the Commonwealth ; and that we might, by concerted action, accomplish that, which, by acting separately, it has been heretofore impossible to produce, and probably to all time, in the past desultory mode of action, would be impossible to produce.

Mr. Proctor, president of the Essex Society, remarked :— I fully accord with most of the views that have been suggested, and believe that there is room, by delegates coming together from the different societies, of very much improving their mode of administering their affairs. I think, sir, these societies owe to the Commonwealth something of this kind. They have now been established, many of them, about thirty years. The Commonwealth has appropriated \$5,000 to \$7,000 annually, for their support. Generally, if I understand it, they are in a good degree of favor throughout the Commonwealth. I believe they are thought, in their different spheres, to have done much useful service.

Now the remark has been made, that their meetings con-

flict with each other. Several of these meetings come on the same day. It would be well that there should be an understanding that they should come one after the other, so that individuals could go into other counties and see what was done there; that they could, by their practical observations, carry home that which they might find valuable. In this way the objects of the premiums would be suggested to them, and the manner of offering them. In this way there might be very great improvement in the discharge of the duties of committees in reporting on the subject.

I believe, it has been found by the gentleman who has prepared the annual abstract which has been published by the Legislature, that in different counties there is a very great variety of the degree of attention paid in preparing those reports. In some counties it has been an object to make those reports worthy of notice; to make them the means of disseminating useful knowledge. And when they are embodied together, a useful book is furnished. If the State is to be at the expense of publishing annually the reports of the several counties, it is very desirable that the digest should be drawn up in such a form as to be creditable to the State. Any gentleman who has examined the reports of the state agricultural society in New York, will find that it gives a fund of original information,—a treasury of valuable knowledge every year. Constitute this board, and Massachusetts, though far inferior to New York in size and means, would still come into respectable comparison with her as affording useful information on this subject. Until the Legislature shall carry out the more general recommendation of the establishment of a board of agriculture, as one of the departments of the State, it seems to me proper that the agricultural societies, who are now the foster children of the State, should be so far organized as to do this as well as they can.

E. K. Whittaker, of Needham, remarked:—The gentlemen who have addressed the convention upon the resolution which is now before it, have very properly explained what is the object of this resolution. But they have not said what I think

may very well be said, and with saying that, I shall take my seat. It seems to me that what is proposed to be carried out in this resolution, is very fully exemplified in what we see here to-day; and that is. the gratifying circumstance, that on a call issued, gentlemen without hesitation have come up here for the purpose of seeing whether we cannot do something for agriculture. And, in accordance with that desire, it is proposed to bring the active minds of the State, who want to see improvement, into a committee who shall examine in detail the matters on which the different societies are interested, and see if something cannot be done to waken the people to more interest in this department of industry, which seems almost to have been forgotten, though it was once the main interest of the State. We may accomplish what we want to see carried out by the movement, without difficulty. We may feel satisfied, from what we see here to-day, that with a committee organized as is proposed, something will be obtained which will create the new interest we wish to secure. I think that the faces we see here to-day are the best proof of this; and I hope that not only will the resolution be passed, but that gentlemen will feel that that is not the last of it; that if they are to carry anything into effect in their county organizations, they should meet at once for the purpose of selecting out the most active minds they have, for the purpose of doing something in the different departments of agriculture.

Remarks of Mr. Sprague, president of the Plymouth Society:—It was not designed by the committee, that the resolution should at all reflect upon or interfere with the character or operation of the State Agricultural Society.

The State society have done much for agriculture in importing different breeds of cattle, and distributing them gratuitously through different parts of the Commonwealth. They have done a great deal for agriculture; and gentlemen who have been eminent in public life, who have now gone to their graves, and who were devoted to agriculture in the arduous labors they performed in connection with that society, deserve our highest acknowledgments. But the State society cannot make arrange-

ments for the time of the agricultural societies to hold their meetings. The State society cannot well arrange the premiums and the details of the operations of the several county agricultural societies. They have no means of doing it. It is utterly out of their power to do it.

Now this Board will be composed of gentlemen knowing the wants of the several agricultural societies and their manner of doing business. They can there consolidate their views and information, and carry out the details as regards the premiums, the reports, the publications, and the various operations of the different societies. Many of our premiums, as given by our agricultural societies, do very little good. They are a mere name. We give, in the Plymouth society, a premium for the best milch cow. Now we have no report of the sizes or dams of those cows. We have no report of their blood; whether they are of one breed or another,—of their shape or their size; but we have merely the quantity of milk and the feed which they have had. This affords us very little opportunity for improvement. It is so with our working oxen. We want the information that some gentlemen in the Commonwealth have acquired. We want, as the gentlemen have said before, to know something of what they have learned. And if we have anything to communicate, we will communicate with them. This is the grand object; and it seems to me that it might be carried on without interfering with the State society. It is not intended to interfere, and if it should be thought that it does reflect on that society, I hope that it will be so managed as that it will not do so.

Remarks of Mr. Gray, president of the State Society:—I see nothing in this resolution which reflects upon the State society. While I say that the State society, or the gentlemen who have had the administration of it, have done all in their power to promote the interests of agriculture, and would have been happy if their power had been greater, I think I may say for them that they will feel no objection to this resolution. The State society, if they had done anything for agriculture, are bound to say that their labors have been fully appreciated. They were the earliest society in existence, and I believe that

from the beginning they have been treated with the utmost liberality as well from the government of the Commonwealth, as from the county societies.

But I have said more than once, that if the State society has conferred any benefit upon the Commonwealth, one of the greatest has been this,—that by the impulse which they gave to the study and practice of agriculture, whatever it may be deemed to have been, they led to the formation of the county societies. They were, if they may be allowed to call themselves, as teachers, in the situation of many other teachers, who very soon taught their scholars to go beyond themselves. The local societies have advantages which no board of a State society, or of any one society can well have, because the officers who compose any one board, though having the interest of the State in view, cannot well be collected from all parts of the State, because they cannot well meet without inconvenience. I understand that this resolution contemplates that the State society shall be represented as well as the local societies in this board which it is now proposed to establish. I have only to say that any measure calculated to bring together the knowledge which exists in the agricultural districts of the Commonwealth in this way, or in any other way, in my opinion ought to meet and would meet the full concurrence of any member of the State society, or of any other agricultural society in the Commonwealth. I am entirely satisfied that we have one object, and I cannot see, for my own part, anything in this resolution to which the society to which I have the honor to belong would find any cause to object.

The question was then taken and the resolution adopted.

Mr. Page then offered the following resolution, which was adopted :—

Resolved, That the President and Secretaries of this Convention be a committee with power to take measures for the organization of the Central Board of Agriculture, as recommended by the first resolve, and that such Board be authorized to petition the Legislature for an act of incorporation, if they shall think it expedient.

The question was taken on the third resolution, and it was adopted.

The sixth resolution was taken up, on which B. V. French, of Braintree, spoke as follows :—

This proposition is so expedient, and commends itself to the approbation of so many, that perhaps it should pass without remark. But I can see much in it to interest every mind. We should have an organization which can combine and unite the interests of the several societies, by means of which communications can be kept up between them. In New York this is left with the secretary, who corresponds with the other organizations, and looks after the interests of the various societies. A few evenings since, this proposition was suggested to me, and it struck me that we did want a place which would answer for a kind of head-quarters, where we could exhibit agricultural implements, models of everything that could interest the farmer, such as a committee could approve of, and where a person could go and see the instrument which is most valued by the committee. I think this is a resolve that is calculated to do an immense amount of good to the cause.

George Denny, president of the Westborough Society :—The resolve was considered a very innocent one,—that agriculture was of so much importance that it demanded the same stand among the people that the other branches of education had. The machinery which should be connected with it was not determined upon, but was left to the future.

Edward L. Keyes :—These resolutions, it may have occurred to the gentlemen who have seen the report of the late commission, are all based on that report. This resolution is but one of their recommendations. It is, simply, that a State department of agriculture should be established. Of course, the details are to be in accordance with the purposes and objects of the department. The department of the militia has its adjutant-general and its arsenal. The educational department has a board of education, and secretary, and agents. It is proposed that this department of agriculture shall have a board, and a secretary, who shall lecture, collect statistics in relation to agriculture, make digests of the reports, and publish such facts and statistics as will be necessary to promote the welfare of agriculture. This resolution simply acknowledges the principle.

The details are to be arranged, provided the principle is adopted, by persons having charge of that matter.

Mr. Page:—The report of the agricultural commission has not fallen into the hands of many gentlemen in the remote part of the State. How fully it has been understood in this part of the Commonwealth, I am unable to say. But I beg leave to read a section to which this resolution has reference. The section refers to a plan for the promotion of agricultural education, that goes before it, but will be sufficiently intelligible by itself:—

Section third is as follows:—"The undersigned recommend the establishment of a State department of agriculture, to consist of a board of commissioners and a secretary, whom they shall annually appoint, which board shall sustain a similar relation to agriculture and the schools connected with it, as the board and secretary of education do to primary schools."

This recommendation of the commissioners, has reference to a previous recommendation of theirs for the establishment of an agricultural school or a system of agricultural schools. And a part of the recommendations in this section would presuppose the existence of such institutions, and a part of the duties would be dependent on such existence. But if none of the institutions are ever established, there are duties there which would be profitable, if faithfully performed, in my part of the State, and I apprehend elsewhere also.

"The duty of the secretary shall be, under the direction of the board, to give lectures in various parts of the Commonwealth, whenever it may be deemed expedient, on the science and practice of agriculture." That subject has been hinted at again and again, at agricultural meetings for years. The hint is thrown out in the enthusiasm of the moment, when the people are thought to be more agriculturally inclined than at any other time, and then is forgotten.

A wise man going among the people would do undoubtedly a vast deal of good to the farmers and to their sons. I am of the opinion, that the establishment of such a secretaryship, in efficient hands, would be as effective an instrument as could be established for the improvement of agriculture.

Sir, our young men want something more than their fathers know how to teach. What is known now by the farmer about farming? Precisely what was known about it fifty years ago, with very little variation! I heard an anecdote from one of the committee to-day which illustrates the position of our young men. A wealthy farmer, with a large farm, died recently in this vicinity. He left five sons, ranging from ten years, upward. He is hardly cold in his grave before they determine to give the farm up. When remonstrated with, they say, "We want to know something. We shall know just as much as our fathers did, and we wish to know more." Now it is a fact that our young men want to know more than their fathers. It is desirable that this knowledge shall not be like the Indians' knowledge, traditionary, handed down from generation to generation. But we want the printed page, that the farmer can take in his hands as he sits by his fireside, and that his sons can take in their hands in their leisure hours,—the printed page, upon which are the results of the practical knowledge of wise men, brought to bear distinctly upon this subject. Now I pray to ask, if you do nothing else here for this vastly neglected branch of industry, how you can do a better thing than to say that you will send out into the community just such a man as is spoken of here. He will not only carry knowledge to the young men, but he will create a thirst for knowledge. I think that the time is ripe for the Commonwealth to take this step, at least, and that the people will say amen to their action, however liberal, in sending them such knowledge as that.

Well, sir, that is one thing that the secretary will do. He will go forth as a scientific and practical farmer, to enlighten the people throughout the Commonwealth. He will carry information and he will gain information. But, then, it is proposed that he shall "receive the returns of the incorporated agricultural societies, and make a digest of the same in the form of an annual report to the Legislature," instead of having it the duty of the Secretary of the Commonwealth, who has, I believe, always delegated it to other hands, who have annually formed an abstract and thrown it through the press. The

Secretary of the Commonwealth has enough to do. He never has done this duty personally, and I think he never will do it except through other agencies. It is proposed to place it in the hands of a man whose life is agricultural, the breath of whose nostrils is agriculture, who eats it and drinks it, and who is given up to agriculture, accomplished in it throughout. Make it his duty to do it, and I will venture to say that it will be not only as good a book as is now produced, but one which will be read throughout the Commonwealth. He will contribute to make it better in this way. He will suggest to the local societies what are the subjects to which their minds should be directed. He will have the elements in a far better condition than the Secretary of the Commonwealth has ever received them from the secretaries of the agricultural societies.

The secretary is required "to collect agricultural statistics and information in the various departments of this science ; to correspond with local societies in this and other lands." Here is an instrument by means of which the secretary can get information from all over the world, and this little report will tell him where he can get his information. He will produce a volume which will be valuable to the practical farmers, and not to the book-farmers alone, (though I speak that word with a great deal of respect, and not with the sneers which some have used,) applicable to all farmers all over Massachusetts.

The secretary shall have it a part of his duty to devise the means of improving agriculture in general throughout the Commonwealth. Well, sir, if the government of the Commonwealth should, in their wisdom, see fit to establish an agricultural school, it seems to me that this thing would be necessary. This kind of organization, this bureau of the government, would be necessary in order to carry that plan into effective operation, and to bring it to a point so that it can act in connection with the local societies that now exist. If those schools are not established, then this precise thing, so far as it can be applicable, is needed by the people of this Commonwealth in order to bring to a focus the information that is had now and is to be had all through the State, and to put life into our societies and make them more active in promoting the cause of agriculture.

John Brooks, of Princeton :—This resolution seems to squint towards a college. If it has that tendency, I shall be opposed to it ; for I do not believe that the farmers are prepared to spend money in instituting a college. I think it would do them no good whatever. This resolution seems to interfere with one which has just passed. We have passed a resolution for a central board, making it their duty to collect this very information and compile it into a book. It seems to be the same duty here. If that is the case, two such resolutions are not necessary. As for lecturing to the people, I doubt whether that is advantageous for the very best reason to my mind in the world,—that the lecturer will not know what to say ; that he has no data on which to make out any speech, because science, as I understand it, is based upon facts. What facts has this commissioner that are applicable to agriculture in this State ? I say, sir, generally speaking, no fact. And why ? Because the science of agriculture has not yet grown up in this country. We are dependent entirely upon Europe, as I understand it, for our agricultural science. You may pile this room full of European agricultural books, and you may condense all the knowledge which they contain applicable to this country into a primer. Therefore, if this gentleman goes out to lecture, he has nothing to found his lecture upon. And to be dependent upon Europe, is of little or no use to us, inasmuch as our circumstances, our facts, our influences are entirely different in connection with agriculture here, from what they are in Great Britain or in Europe.

I have not had the pleasure of reading the report of the commissioners. But I understand it gives an account of a vast number of agricultural schools in Europe. Suppose we take the Prussian system ; do you believe it can be carried out here ? I believe that the farmers will not agree that it can do good. For that reason, and for the reason that I have said that we have no science yet formed, it seems to me that an agricultural school cannot be a benefit.

There is another reason. We must begin at the end ; that is, we must begin at the bottom. We must create ourselves. This board, so far as it might be made useful, is a very good

thing ; and if it does not squint towards a college, I might be in favor of it. It might be useful in collecting information all over the State. The gentleman says that young men abandon their farms because they cannot improve. Perhaps that may be the case. If so, it is for the reason that I have said, that we have no science. We have no data to go upon. We have only our own experience.

Remarks of Professor Wm. C. Fowler, of Amherst :—Science is, in itself, the same the world over. In its applications it may be varied according to circumstances. The application of science to agriculture in this country may vary from its application in England, in consequence of the peculiar circumstances connected with our climate or soil. We must, therefore, first determine what these peculiar circumstances are, and then we shall know how to employ science in aid of agriculture in our own country. If it be true, as the gentleman says, that we have no American science and no Massachusetts science, then upon this assumption of his, the very first thing which we ought to do is to have an American science, and a Massachusetts science.

But leaving the ground assumed by the gentleman, I come back to the true ground, namely, that science is the same all over the world. It is our business to see that its applications to the art of agriculture in Massachusetts are such as they ought to be. In the first stages of civilization, art precedes, science follows. In the advanced stages of civilization, science precedes, art follows. All the higher processes of the useful arts are dependent on science.

There have been immense additions made during the last fifty years to science in general, and to those particular sciences which relate to agriculture. This is true of chemistry, of geology, of mineralogy, of botany, and vegetable physiology, of zoölogy, and animal physiology. Accordingly, the governments of Europe, as we learn by the excellent report of the agricultural commission, lately published, are extensively taking measures, by means of agricultural colleges and schools, first to apply these sciences to the art of agriculture, and next, to communicate extensively a knowledge of the applications

thus made, for the general benefit of the profession of agriculture. I would take the liberty to recommend to the worthy gentleman who last spoke, to read this report before he makes objections to a plan for the improvement of agriculture in Massachusetts, based on that report. You need only to read this work, or one of the reports of the patent office, or the better class of agricultural newspapers, in order to know that there have been immense additions to agricultural science, strictly so called, and to those sciences in general which may be applied to the art of agriculture.

The fact, indeed, seems to be generally admitted that there has, in one quarter and another, among men of science and the cultivators of the soil, been a great increase of knowledge, both theoretical and practical, on this subject. But the light is scattered, not concentrated, and, therefore, not effectual. It is light such as has, by some, been supposed to exist after God said, "Let there be light, and there was light," and before the sun was created. According to this theory, they suppose that the light thus diffused through space, thus ineffectual, thus incapable of being applied to any useful purpose, was collected by the Creator and concentrated in the sun, which he "set in the firmament of the heaven, to give light upon the earth," so that "the greater light should rule the day, and the lesser light the night," and order thus be brought out of chaos.

Something like this may be true of the science and of the practical skill which is scattered over the land and the world. What we need is an organization, under the authority of the State, which shall collect this scattered light, whether in this or in another hemisphere, so that it shall become effectual, and not any longer be "light shining in darkness, and the darkness comprehending it not." What we need, is an organization which shall collect the light of science and of practical experience into an agricultural institution, as into a focus, from which it can go forth, as from a radiant point, over the Commonwealth and the country, and, if you please, the world.

Remarks of Judge Mack, of Salem :—It has been said, sir, that we have no science. It is too true that we have not much science on the subject of agriculture in Massachusetts. And this

fact makes it imperative that we take some means by which we can collect facts. All science has been built up upon facts. And unless we take measures to collect them upon the subject of agriculture, we never shall have any science here. There is science enough upon the subject of agriculture to apply these sciences to the art of agriculture, and next, to communicate extensively a knowledge of the applications thus made, for the general benefit of the profession of agriculture. I would take the liberty to recommend to the worthy gentleman who last spoke, to read this report before he makes objections to a plan for the improvement of agriculture in Massachusetts.

Remarks of Hon. Amasa Walker, Secretary of the Commonwealth :—

Before we admit that confusion exists in relation to agriculture, and all this chaos which the learned gentleman from Amherst supposes, the question naturally arises, how happens it that, at this late period, there should be so much chaos and confusion with reference to agriculture? For I believe that they do exist ; that there is all this chaos, confusion, uncertainty and the want of application of true science to agriculture. And why, sir? I have had occasion to notice recently some very good reasons why all this should be true ; and the general reason is this.

We have a great number of agricultural societies in different parts of the Commonwealth. Those societies carry on their operations through the year. They have their exhibitions. They offer their premiums. They have their reports. And what does it all amount to? It amounts to this,—that all these different societies, as a general remark, have been operating upon different principles, that is, without any well established and uniform principle, and hence they do not arrive at any well established and uniform results.

For instance, in the article of Indian corn, what do we ascertain from the reports of all the agricultural societies in this State? We ascertain nothing that is true in relation to any one point in regard to the raising of Indian corn in this Commonwealth, because we have no uniform system on which statistics are made. For instance, in one society they have it

weighed and in others measured; and in three societies that I know of, they include the cob, allowing seventy-five pounds to the bushel. Statistics which must be based on such various methods of ascertaining the quantity of an article raised, do not establish anything.

Just so in relation to the product of milch cows! We have no statistics which can be brought together, by which an average can be made of the product in different parts of the Commonwealth. My learned friend, from Amherst, used the right figure, "perfect chaos." It proves nothing.

This is the fact in relation to agriculture so far as I understand the matter. What then must be done? What is contemplated in that resolution? A central board! A board of agricultural education! A board of agricultural statistics! A board which shall establish a uniformity of action among all the societies, so that their statistics will be valuable! We all feel the vast importance that has been given to the cause of education by the establishment of the Massachusetts Board of Education, and the great improvement that has been produced in our common schools in consequence of the action of that board. I suppose we have there a board similar to what is wanted in agriculture, if we wish to accomplish what our friend from Worcester County desires,—a board which shall establish uniform returns from all the counties.

We do establish such regulations with regard to education. Every district school in this Commonwealth has to make its returns precisely on the same data and the same principle. Then we can make out our aggregates, we can make our deductions, and we can learn lessons of wisdom in relation to our schools. Now I suppose that precisely this is wanting with regard to agriculture. And since this State makes liberal grants every year for agricultural societies, would it not be right, would it not be expedient, that the State should require systematic and regular returns, the same as are made from the common schools; and unless those returns are accurately made, according to the prescribed form, that the society should not receive the bounty of the State. Without that, I have no hope of anything being done,

From the position in which I stand, I have had this subject brought home to me. The returns have been sent to me. They are all chaos. But by the assistance of a very able gentleman, a sort of abstract has been made from the returns of all the societies. They are somewhat interesting at least, but they do not prove anything. And my mind has come to the conclusion, very recently, that if we hope for any progress in agriculture, we must have a central board; we must have everything arranged as it is in the common school board; and we must have one mind devoted altogether to agriculture. Out of the million we can easily spare a single mind. What person in the Commonwealth is devoted entirely to agriculture, I mean to the broad field of agriculture, to the theory and practice of agriculture? I do not know any such one. Is the president of any of our agricultural societies, or the secretary, or the treasurer, thus devoted? No! they do what they can, and we are much obliged to them for it. But we want one mind devoted to the subject.

You have seen what the Secretary of the Board of Education accomplished. It surprised us all. Yet I think far greater results would be accomplished if we had a Secretary of the Board of Agriculture, who should lecture, who should try to ascertain facts, and to awaken a general interest in the subject of agriculture. If this were the case, if such a board and secretaryship were established and sustained, nothing could be more gratifying to the farmers of the State.

Remarks of Johnson Gardner, of Seekonk :—

I have supposed that science was science all over the world; that so far as regards chemistry, geology, and all other sciences pertaining to agriculture, what they had learned in Europe we might learn; that a chemist there, analyzing air and finding it contained oxygen, hydrogen, &c., would merely find the same article essentially which a chemist analyzing air here would ascertain. I suppose the same with regard to agriculture. I would establish this board. I think it would be one of the best things we could do. I do not precisely agree as to the effect of the local societies. I believe they are doing a vast good. I believe every town in the county of Bristol has felt

the effects of the Bristol Agricultural Society. I believe if you make the additional appropriation of one hundred dollars to every society, raising a thousand dollars, that these societies will do much more than at present.

Simon Brown, of Concord, made a short and practical speech, suggesting that if the secretary should only present a single new idea to his auditors in each of his lectures, it would prove very valuable to the farmers; illustrating his position by stating that if he should only teach them how to analyze the soil in such a way as to be able to determine what are the constituents of a given amount of earth, and what parts are wanting in order to make it yield the largest crop of a certain article, an incalculable amount of good would be derived by the community.

EVENING SESSION.

The Convention was called to order at 7 o'clock. The seventh resolution having been taken up for consideration, the chair called upon his excellency, Governor Boutwell, who addressed the convention as follows:—

This resolution has reference to what has been accomplished already by the societies which exist in our State. They constitute a part of the imperfect system of agricultural education. There are various town societies,—few in number at present, but efficient in their operation,—which constitute another part of this system. And it would seem expedient, if efforts are to be made to extend and elevate agricultural education, that those means which exist ought to be employed.

The first question which a convention of this character would naturally consider, is, whether there is a necessity for improvement in agricultural education? And, upon this point, I suppose there would not be much difference of opinion; for it cannot but be as true of agriculture, as of any department of industry, that it is to be advanced and perfected by the operations and labors of intelligent and scientific men.

It cannot be denied, that while other departments of indus-

try in this Commonwealth, and in this section of the country to a considerable extent, have had the benefit of scientific education and scientific improvement, agriculture, in this respect, has been almost entirely neglected. If, then, it is conceded that there is a necessity for agricultural education, and for improvement in it, we are to inquire, who are to be the teachers? What are the means to be employed? and, who are the men or individuals in the community to be taught?

It would seem proper that we should avail ourselves, so far as possible, of the means which exist. We should use what we possess, if it be efficient, rather than attempt to create more than is absolutely necessary. Now, if we have institutions that to any considerable extent can be made available for these purposes, for the present,—even though they should be inadequate for the future,—I apprehend it would be regarded proper, on all hands, that we should use those institutions and those means.

In some countries, science may be in the possession of a few individuals in the community, and may be used in such a way as to control and give direction to the manual labors of other men. But in this country, science is not in that way to be applied. We have no masters controlling large bodies of laboring men. But if we are to educate the farmers of this Commonwealth, it must be by educating the great mass of them. The majority must in some way be reached. It will not do to give to certain individuals the *science*, with the expectation that certain others are to apply that science without knowing something of the reasons which exist for its application.

We are, then, to carry the knowledge to the great mass of the people. And the question is, how is it to be done? If we educate a few men, it may happen, and very likely will happen, that from the nature of their pursuits, they will be unable to approach and communicate with the mass, so as to make their knowledge available in this department of industry.

It is not more than twenty years since, that we had two classes of teachers in our public schools. And it is not too much to say that they entirely failed. The one class was composed of young men sent out from our colleges into the interior

towns and small districts of the State ; and, as a general thing, it may be said that they failed to produce the result which good teachers ought to produce.

We had another class which acted as teachers. They came from the mass of the people. They possessed some of the qualifications for teachers, but they were deficient in many particulars. Neither of these classes met the wants of the community. Now it may happen that we shall constitute a class of men who, in some respects, will resemble the young men who went out from the colleges to the district schools ; and if we do, they will most certainly fail to accomplish the results which we expect.

We have instituted, with regard to our common schools,—and, I take it, we can reason somewhat from analogy,—we have instituted Normal Schools to furnish instruction to young men and women as teachers. They go there for the purpose of qualifying themselves as teachers. And, I take it, these institutions have accomplished most perfectly the object which the State and their patrons had in view at their establishment.

Now we are, in some way or another, to connect the science of the college and the laboratory with the labor of the farm. And the great question I apprehend is, how is this to be done ? It was said here the other night, at the legislative agricultural meeting, that if you take young men and send them to college, for the purpose of instructing them in science, with the expectation that they would go out and instruct the farmers of the State, they would fail. I thought there was some force in the remark.

Now we want, in the agricultural system of education, a class of men who shall combine the science of the school with the labor of the farm. Now, to my mind, it is apparent that they must be drawn, in the main, from among the farmers themselves.

You must begin with the farmers, and work up,—infusing into the great mass of the people an increasing desire for scientific knowledge, which shall enable them to apply agricultural sciences to agriculture itself.

In what way, then, can you reach the great body of the

farmers of the State most effectively? I think we may do it by using, to some extent, the agricultural institutions which exist,—the town societies and the county societies. As in the common school system, the people have been led to maintain it voluntarily, so, I take it, the agricultural system of education is to be maintained voluntarily in the small communities of the State. You cannot establish any great system, which shall act upon the people directly and exclusively. You may encourage agriculture, but its support must come from them.

Hold out, then, the inducement to the people to educate themselves, and you will succeed. If you have an institution to educate men to go among the people, you will do something in that way. If you were to adopt the system of employing a certain number of scientific men, as we have employed common school lecturers, you might create an educational feeling which would be efficient. For example, if there are, at this moment, fifty town societies, and if you were to employ a certain number,—perhaps five scientific men,—whose duty it should be, in the summer season, to go where these institutions exist, (and nowhere else, that their establishment may be encouraged,) to receive and communicate information in relation to manures and crops; and if, in the winter, it were their duty to give lectures adapted to the wants of these localities, I take it you would do a great deal of good.

And if your munificence were confined to the towns where these associations exist, lecturers would increase as rapidly as the demand; and without extraordinary effort, you would introduce a system of agricultural education which should reach every young man, give him information, and cause inquiry among the great body of agriculturists. It would be the duty of those individuals to collect and distribute information, so that you would have a great system of lectures and experiments extending over the whole Commonwealth.

Remarks of William Buckminster, editor of the *Massachusetts Ploughman*:—I was surprised to hear the assertion, this afternoon, that we had made no improvement in agriculture for forty or fifty years past. If there is any useful agricultural knowledge in the country, I ask you where it is. It rests with

the practical farmers. They possess all the practical knowledge which is of any value. Chemists may talk as much as they please, with high flown language. The farmers have the practical knowledge.

The word science has been used. Science, we are glad to learn, is knowledge. Farmers understand that. There was one gentleman a little alarmed at science. He would not have it. Now, what is the use of telling us, farmers, that there has been no improvement for a dozen years past? I live in the vicinity of Worcester. Forty years ago, it was the practice there, among all farmers, to let their cattle run at large, saving none of the manure; and not one man in forty attempted to increase his manure by carting in substances to preserve the essences. Fifty years ago, the hogs ran in the road, and no manure was saved from them. Have not we made improvement? Your foreign chemists and your foreign professors will all tell you that manure is the very foundation of all production connected with agriculture; and yet gentlemen will tell you, and repeat that we have made no improvement with regard to farming, even when we produce four or five times as much on a given piece of land as we used to make, forty or fifty years ago. I want this thing well understood. We have been led astray ten times by chemists where we have got real information from them once.

But I would not undervalue chemistry. A farmer cannot do anything, unless he makes more from his farm than he spends. What we want, is to circulate the knowledge we possess. I know there are some farmers who never make any improvement. What we want is to wake these gentlemen up. And the way to do it is the very mode suggested this evening by his excellency, the governor.

The resolution was adopted.

The fourth and fifth resolutions, which were passed over in the afternoon, were now read by the chair.

The President.—There is a gentleman present who made the investigations in relation to these schools in Europe, President Hitchcock, of Amherst. I have no doubt the convention will be pleased to hear from him.

President Hitchcock.—I fully agree, sir, with the remarks which have been made by his excellency, and other gentlemen whom I have heard to-day, on the importance of using other means for promoting agriculture, besides establishing a school or schools. I hope no gentleman will imagine that the establishment of a school, however judicious a plan is adopted, is going at once to make any great change in our agriculture. It is only *one* of the means which are employed in Europe for that purpose. I am not going to compare the means. I do believe that agricultural societies are indispensable. It is one of the reasons why I could wish to see schools established, that they may form a channel by which we may communicate with the agricultural world, by which we can receive information of what is doing in other parts of the world, of what is doing in the cultivation of land, in the raising of stock, and in a multitude of subjects connected with agriculture. If you had a school, it would be a channel through which there would come this information; and it would be a sort of ordeal to pass through.

Now there comes floating somehow or other on the winds, an account of an improvement in agriculture. An individual farmer hears of it, and undertakes to make the experiment. He fails, perhaps. Then he is disgusted with everything of the kind. Now one grand object of a school of this kind, is to try experiments, to try suggestive experiments. For it is an indispensable adjunct of all the schools in Europe that I visited, with the exception of only one in Edinburgh, that they should have a farm connected with the school; that they should live upon the farm; that the professors and officers, at least a part of them,—those who have the management of the whole concern,—should engage in actual labor on that farm. Some of them do not do it for wages, and some do. But they all engage, more or less, in the duties of the farm, in the work on the farm, and in every kind of work, too. Even those who do not expect to labor in after-life, but who expect to have the superintendence of the labor of others, all go through the work.

I have mentioned in this report, the case of a school in France about twenty-five miles from Paris, where the director

of the school, a scientific man, conducted us out to the piggery ; and there we met the young men connected with the school, evidently from wealthy families, all of them, including the director himself, with their frocks on. But I noticed that all the young men were engaged in some business about the farm. Each one had his duty to perform. One was to attend to such a thing, and another to such a thing. There was one young man who had a broom and a pail of water, and who was cleaning an ox's leg in a stable. The director whispered to us that that young man was the son of a wealthy banker.

The truth is, the farm is considered an indispensable adjunct to the school. Unless those who have the management of it, show better crops than others in the neighborhood, the government withdraws its patronage. And they do show better crops. I never saw better ones than those at Glasnevin, near Dublin. There, oats were raised eighty bushels to the acre ; and other crops, wheat, flax, beans and potatoes in the same exuberance. This removes one of the great difficulties about these schools. I do not wonder that people shrink from making additional experiments, when they hear that this application of lime is going to work wonders, or guano, or something else, and when they have already made the experiment once and failed. A great many suggestions which are made by chemists are tried by the farmers with failure. I do not wonder that they fail. And, after all, they say, this science does not answer. We would better follow our fathers. That is to some extent true.

The first object of an agricultural school, as I understand it, is to collect together the experience of the best farmers in Europe or in the world, and to make that experience the basis of their operation. For, after all, the principles of science, although certain, if we understood them, yet are not well enough understood now, to be in all cases applied with certainty to the growth of plants. We acknowledge that. And, therefore, I would place first in the advantages of an agricultural school, the getting together all the experience, the important experience which farmers have had on the subject of farming, and testing it on the farm connected with the school, and then, if it proves good there, to recommend it to the public generally.

But as we are now situated, one farmer takes one method, and another, another; and it is difficult to ascertain what is best, what is correct. And that is one of the advantages of these societies; that they serve to collect these scattered rays, to bring them together to a focus, and to make out what is the best result of this experience. But, after all, we must have the sciences taught in such a school, and we may hope to get a great deal of advantage from it. For no man will deny that the plants which are raised upon a farm, grow according to the principles of botany and physiology, so far as those principles are understood.

Now botanists and physiologists have learned some things about how plants grow, what they require for food, what is the best mode for them to thrive. There is a great deal more to learn, and we want these schools to find it out. The chemist, too, can tell us something about the composition of the soil. He tells us that often a crop fails, because there is not a half per cent. of a certain ingredient. There are a great many other things which may be told in future. We may hope a great deal from the application of a great variety of the principles of science.

But, sir, I say that this business of raising plants, as men who conduct a farm do it, is a very complicated affair, and a very delicate one. I have been a lecturer on chemistry for twenty years. I do not now lecture on it. I have tried a great many experiments during that time. But I do not know of any experiments so delicate as the farmer is trying every week. I do not know any so difficult. The experiments of the laboratory are not to be compared with them. Will not a knowledge of the principles of chemistry help a man in his agricultural pursuit? Knowledge is not perfect yet. Will not such an acquaintance guide him somewhat? You have half a dozen sciences which are concerned in the operations of a farm. There is the science of meteorology, the condition of the atmosphere, the state of the weather, storms, sunshine, temperature; all these things have to be taken into the account. There is to be a delicate balancing of all these, as every farmer knows. A man who would understand the delicate operations

of farming, must know something about chemistry. The chemical operations are constantly going on in a plant.

That brings in another science,—physiology. He must know the laws of life, how this or that influence will affect the growth of plants ; just as a physician has to learn physiology, in order to know how this thing or that thing will affect the life of individual men. You have then the science of physiology to be applied extensively. And so I might speak of botany and physiology, which are very much concerned in agriculture, the character of the soil, and a number of other sciences.

To suppose that a man is going to be able, at the present day, without any knowledge of these sciences, to make improvements in agriculture by haphazard experiments, is, it seems to me, absurd. Now, if we can gain, from the establishment of a school, a little advantage at first, we shall gain a great deal in time. We learn one thing after another, so as to make progress. That is what is doing in Europe. They have found there unless they have these schools, that scientific men, who are distinguished, will not attend to the matter of conducting these experiments, so that benefit will result. The French government have just established a school at Versailles, at the old kingly domain. And this is one of the reasons they have given for it,—we must have, they say, men who will devote their attention to this subject, who will push their discoveries to get some new thing, not expecting, at once, to obtain any great improvement.

Now these principles, the principles resulting from experience, the principles resulting from these sciences, can all be taught the young men who go to those schools. And it takes a great while to learn them. They are not applied extensively in our country, although we are making some progress. Only think, sir, this whole matter, the most difficult of all the arts, depending upon experiments the most delicate, and influences the most potent, for success or failure, whose dynamics, if I may so say, being such as to require the most acute mind, is all left for each individual man to find out. The wonder is, that the farmers of New England have done so much, not that they have not done more ; because they have one of the most

difficult of all tasks to perform. And hence it does seem to me that a school is important, as one of the means for assisting in obtaining this information; not that it is going to work wonders. The people must come up to it.

It does appear to me that the question about the establishment of agricultural schools in Massachusetts, is merely a question of time after all.

The subject has made such rapid progress in Europe, within a few years, that I was perfectly amazed to find the facts develop themselves as they did, one after the other; to discover such a multiplicity of facts with regard to them. Gentlemen who have not seen this report will, perhaps, be surprised when I tell them that I give there an account of 350 schools, of three different grades. Though some of them have been in operation for fifty years, the most have been recently established. Gentlemen there did not seem to know how many schools there were.

I recollect getting acquainted with the Chevalier Bunsen. I thought I should know from him all about the number of schools in Prussia. He gave me a list of four schools in that country. When I went there, I found thirty. Probably he had not heard of them. Some of them were small. In France there are seventy-five. In Ireland they have fifty. And the Irish schools pleased me more than any others except the French. I had an opportunity, in Ireland, of hearing examinations of the young men. They were called in from the farm and asked questions on the subject of practical agriculture, as to draining, and how to adapt crops to different soils, and other matters of that sort. And then, as to agricultural chemistry, they were asked, What would you do in such and such circumstances? What does a soil with such and such properties need? and so on. I do not believe there is a class of students of any kind in our country, who would be able to answer one-tenth of the questions which those young men answered, very readily. And going out, as they do, to take charge of other schools, they will accomplish much for the benefit of unfortunate Ireland; and being concerned with their own hands in raising these crops, for other farms applying in the field those

principles which they learn in the school, I do not know how it strikes others, but it did strike me that it was a good way to promote agriculture. The societies are doing much, but it seems to me that these schools are to elevate the societies.

The remarks of his excellency are very proper. The people must do this thing. Such is the nature of our institutions, that if the people do not wish a school, the government cannot sustain one. If the people are not ready to force the government to help them, it will do no good. That was the case in Europe. Individuals there, even from the year 1774, struggled and sacrificed their property and their lives in this cause. They were repelled by the government again and again before they could get any assistance. Then they would start a private school, and would find it a heavy affair, as any such school must necessarily be. It must be a weighty concern, and individuals, one would suppose, would sink under it. But the thing has been done there, and the government has been, as it were, compelled to take hold of it. There is a feeling among the people which makes the government feel as if it must act. And availing themselves of the general peace in Europe, they have been trying to establish schools of agriculture.

Remarks of Richard Bagg, Jr., of Springfield :—Agricultural education is our great theme. It has become a very popular theme. The *phrase* is quite familiar, and yet we hardly know what is meant by it.

Our fathers are held in grateful remembrance, as philanthropists, because their first public acts were to lay broad and deep in the virgin soil of New England, *foundations* for those educational and religious institutions which have contributed, more than anything else, to give her importance and her sons influence.

Let it not be supposed, however, that intelligence is a natural production, indigenous to the soil of New England. It is the result of that *educational system*, whose genial influence permeates her every nook and corner; not only teaching "the young idea how to shoot," but teaching also the great lessons of *self-reliance* and *self-control*; *disciplining* New England mind to

conflict, to patient, persevering, arduous *effort*, and *accustoming* it, by these means, to *overcome* every obstacle.

Such mind has resources,—resources flowing at every step of its progress. *Such mind* can never be entirely baffled; it is made *enthusiastic* by difficulties, and is never enervated by success. *Such mind must* accomplish its purpose, and *will*, even though the “iron be dull.” *Such mind*, applied to the cultivation of the soil, will never assume the garb of the mendicant and “beg in harvest.”

Let us remember that if the State provide the means and appliances for a scientific course of agricultural study, the young man must “wake up from his drowsy nap,” and *qualify himself* “to go up higher.”

Remarks of William S. King, of R. I.:—The two great evils agriculture has to contend against, are torpor and prejudice. That old torpor has been driven away by the persevering efforts of societies. They began their operation,—and I am not so young but what I remember their commencement,—and have continued their exertions faithfully to the present time. Men found that the secret in every combat was combination.

But there is a terrible power yet to encounter; and that is prejudice. How is this prejudice to be encountered? It is to be encountered by education. The man with maturity of years has grown up with all his prejudices. The old gnarled oak must stand as the winter of its youth has left it; but the young twig remains to be trained in the way it should grow.

Let the young farmer learn, at the start, that his occupation is the noblest of all. Let him remember that Washington called it “the most useful, the most healthy, and the most noble occupation of man.” We want nothing stronger than that. Let him know that the farmer’s path can be the path to greatness. There are men, I might say, perhaps, within the sound of my voice, who have passed directly from behind the plough almost to the pinnacle of political honors.

On motion of Mr. Denny,

Voted, That the Central Board, provided for in the second resolution, consist of three delegates from each incorporated

Agricultural Society, and that the president and secretaries be requested to inform the societies of this resolution.

FIRST MEETING OF THE MASSACHUSETTS BOARD OF AGRICULTURE.

This association, composed of three delegates from each of the incorporated Agricultural Societies in the Commonwealth, was convened September 3d, 1851, at the State House in Boston. On motion, it was ascertained that delegates from all of the fourteen County Societies were present, and that the State Society was also represented.

The following list of officers, for a permanent organization of the board, was reported and accepted:—

MARSHALL P. WILDER, *President.*

HENRY W. CUSHMAN, }
JOHN W. LINCOLN, } *Vice Presidents.*

ALLEN W. DODGE, *Corresponding Secretary.*

EDGAR K. WHITAKER, *Recording Secretary.*

The President stated, briefly, the objects of the organization of the board, and especially directed attention to the great importance of concert of action on the part of the different societies.

John C. Gray, of the State Society, recommended that a committee be chosen, to report business to the board, and that said committee be constituted from the local societies. The State Society had set the example of instituting annual shows, and the County Societies had adopted the same course, and had even eclipsed the parent society. Mr. Gray gave a highly instructive statement in relation to the movements of the State Society, and the efforts it was now making to obtain from Europe the most valuable kinds of stock to improve our own.

On motion, voted, that Messrs. B. V. French, J. W. Proctor, and George Denny, be a committee to report business to the board.

On motion of Mr. Denny, it was voted that a committee, to consist of one from each society, be appointed to take into consideration the time of the several societies' exhibitions, so that they may not interfere with each other. While this motion was pending, a spirited discussion ensued upon the indispensable importance of systematizing the action of the various agricultural societies in the Commonwealth, so that the best interests of the farmer might be promoted. In this discussion, delegates from all parts of the State participated, and the committee was constituted agreeably to the motion.

At the AFTERNOON SESSION, the committee on recommending specific days for the annual exhibitions, submitted the following report:—

For Essex,	.	.	.	last Wednesday but one in September.
“ Worcester,	.	.	.	last Thursday but one in September.
“ Worcester (West,)	.	.	.	last Thursday in September.
“ Norfolk,	.	.	.	last Wednesday in September,
“ Middlesex,	.	.	.	first Wednesday in October.
“ Plymouth,	.	.	.	first Thursday in October.
“ Barnstable,	.	.	.	second Wednesday in October.
“ Bristol,	.	.	.	second Thursday in October.
“ Hampden,	.	.	.	last Thursday and Friday in September.
“ Housatonic,	.	.	.	last Wednesday and Thursday in Sept.
“ Franklin,	.	.	.	last Wednesday and Thursday in Sept.
“ Berkshire,	.	.	.	first Wednesday and Thursday in Oct.
“ Hampshire, Franklin & Hampden,	.	.	.	second Wednesday and Thurs. in Oct.
“ Hampshire,	.	.	.	third Wednesday in October.

Voted, That the officers and delegates to the board, be requested to invite the coöperation of their different societies to carry into effect the above recommendation.

Mr. French, from the business committee, reported that committees of three be appointed on each of the following subjects, including the premiums to be offered, and the principles upon which they are to be awarded, viz.:—on Ploughing, Milch Cows and Dairy products, all other Live Stock, Farms and improvement of lands, Cultivation and Measurement of Crops, Agricultural Implements, Manufactures.

This report was accepted, and the President submitted the

following list of committees, who were requested to report upon the various subjects referred to them, at an adjourned meeting of the board.

PLOUGHING.—John W. Proctor, Seth Sprague, and Johnson Gardner.

MILCH COWS AND DAIRY PRODUCTS.—George Denny,* B. V. French, and Allen W. Dodge.

ALL OTHER LIVE STOCK.—Paoli Lathrop, Joseph Howe, and W. A. Gorham.

FARMS AND IMPROVEMENT OF LANDS.—J. T. Buckingham, John Daggett and Horace Collamore.

CULTIVATION AND MEASUREMENT OF CROPS.—J. W. Lincoln, Alfred Baker, Richard Bagg, Jr.

AGRICULTURAL IMPLEMENTS.—Simon Brown, S. Reed, and Charles S. Bursley.

MANUFACTURES.—Charles C. Sewall, Samuel Chandler, and Samuel Powers.

On motion of Mr. French, a committee of five were chosen to report on the subject of agricultural education, and the best measures to be adopted for the encouragement of such education.

Upon this motion, a very able debate followed. The speakers did not differ as to the necessity and propriety of legislative action; but, several of them advocated the action of public-spirited individuals jointly with the Legislature, as in the foundation of the State Normal Schools, and Reform School, at Westborough. The discussion occupied most of the afternoon session.

The following gentlemen were then chosen this committee, viz.: the President, and Messrs. Proctor, Fowler, Page and Reed.

On motion, a committee of one was chosen to visit each of the agricultural exhibitions, the present year, and report at the adjourned meeting of the board. The names of the delegates to the several societies or those who were substituted in their place, will appear in connexion with the reports, which they respectively submitted.

* John W. Lincoln substituted, after the decease of Mr. Denny.

Voted, That a committee of three be chosen to report a constitution and by-laws, and what further measures are necessary to organize the board. Henry W. Cushman, W. C. Fowler, and James H. Knowles, were chosen said committee.

SECOND MEETING OF THE MASSACHUSETTS BOARD OF AGRICULTURE.

The board met, according to adjournment, at the State House, Boston, January 14th, 1852. The attendance was large, and nearly every county society in the State was represented.

Lieut. Gov. Cushman, from the committee appointed for that purpose, reported a constitution and a series of by-laws for the government of the board.

CONSTITUTION AND BY-LAWS OF THE MASSACHUSETTS BOARD OF AGRICULTURE.

1. The objects of this association are the encouragement of agricultural education, and the improvement of agriculture in all its departments in this Commonwealth.

2. The members of the association shall consist of three delegates from each of the incorporated agricultural societies in the Commonwealth, that receive a bounty from the State. And the delegates now in office shall continue as such until the 2d Wednesday of January, 1853.

3. The officers of this association shall be a president, two vice presidents, a corresponding and a recording secretary, treasurer, and an executive committee of five, of which the foregoing officers shall be, *ex officio*, members; and said officers shall perform all such duties, as are usually incidental to their respective stations.

4. The officers elected on the 3d of September, 1851, shall hold their respective offices until the 2d Wednesday of January, 1853, and until others are chosen in their stead.

5. The annual meeting of the board of agriculture, shall be held at the State House in Boston, on the 2d Wednesday of January annually, at which time the officers shall be elected:—and meetings may be held at such other times as the executive committee shall determine.

6. Delegates shall be annually appointed by this board, to attend the cattle show and exhibitions of the several incorporated agricultural societies in the Commonwealth, and said delegates shall report at the annual meeting of this board.

7. These by-laws may be altered at any annual meeting of the Board, or at any special meeting called for that purpose.

The report was accepted, and the constitution adopted.

The President nominated the following gentlemen to constitute, with the officers of the board, the executive committee : Edward Everett, John W. Proctor, J. H. W. Page, B. V. French, W. C. Fowler, of Amherst ; and they were unanimously elected.

The death of George Denny, of Westborough, having been announced by his colleagues from the Worcester Society, the following resolutions were submitted by Mr. Dodge, corresponding secretary, and adopted :—

The Massachusetts Board of Agriculture, having learned the death of Hon. George Denny, recently associated with them in the prosecution of the objects of the board : therefore,

Resolved, That this Board have learned with deep regret the decease of their late efficient and intelligent co-laborer, the Hon. George Denny, of Westborough.

Resolved, That whilst we bow with submission to the Divine will, that has removed from the scene of his earthly labors one whose life was so useful, we cherish with profound respect the memory of his valuable services in the cause of progressive agriculture.

Professor Fowler submitted the following resolution :

Resolved, That the President of the Massachusetts Board of Agriculture be requested to enter into a correspondence with the presidents of the several State societies and of other agricultural associations, on the subject of the expediency of calling a national convention for the purpose of taking into consideration the interests of agriculture in the United States.

It was discussed and unanimously adopted.

The President then presented the following report on

AGRICULTURAL EDUCATION.

The undersigned, in behalf of the committee to whom was referred the subject of agricultural education, submits the following preamble and resolves, as expressing the views of said committee :—

Whereas, Agriculture embraces within itself the elements of individual and national wealth and power ; and *whereas*, this most important department of science has been in a great measure overlooked and neglected, while other branches have received the attention of the Legislature : therefore, be it

Resolved, That Agriculture is paramount to all other interests of society and should be considered an object of special regard and patronage both by the government and by the people ; and that whether acting as individuals or representatives, the citizens of this Commonwealth are bound to encourage and sustain every laudable effort for the advancement of this great department of human industry.

Resolved, That while this board gratefully acknowledge the pecuniary aid hitherto afforded by the Commonwealth to local agricultural societies, yet, in the judgment of the board, it is believed that neither these, or any other means now in operation, are sufficient for the full development of the agricultural resources of the State, or the continued and permanent improvement of this time-honored art.

Resolved, That the necessity for additional State patronage appears from the low condition and slow progress of agriculture, when compared with the thrift, industry and intelligence so conspicuous in almost all other departments of labor ; especially does this necessity appear, from the rapid increase of population and the decrease of agricultural products in the State, and from the large quantities of produce brought annually into Massachusetts from the southern and western states, much of which, by a proper knowledge of the constituents of soils, crops, and manures, and their proper adaptation to each other, might be raised by our farmers in sufficient quantity for home consumption, and at a profit which would enable them to maintain a successful competition with cultivators in the more naturally fertile regions of the West.

Resolved, That the necessity for this improvement is apparent from the report of the valuation committee to the last Legislature, and by which it will be seen, that although there have been added to the lands, under improvement, since 1840, more than *three hundred thousand* acres, and although the upland and other mowing lands have been increased more than *ninety thousand* acres, or nearly *fifteen* per cent., yet the hay crops have increased only about *three* per cent., showing a relative depreciation of *twelve* per cent. ; and although the tillage lands have been increased more than *forty thousand* acres in the same period, yet there has been no increase in the grain crops, but an absolute depreciation of more than *six hundred thousand* bushels ; and although the pasturage lands have been increased more than *one hundred thousand* acres, yet there has been scarcely any augmentation of neat cattle, while, in sheep, there has been a reduction of more than *one hundred and sixty thousand*, and in swine, of more than *seventeen thousand*.

Resolved, That to prevent a further depreciation in the great interest of agriculture, and to raise this most important pursuit to that point of perfection which has been attained by most other arts, *a knowledge of the natural sciences is indispensable* ; for if there are scientific principles on which successful cultivation depends, then no effort can be well directed unless it is founded on these principles.

Resolved, That Massachusetts, by an enlightened policy and wise legislation, has rendered her system of education worthy of her exalted reputation, and that this board most earnestly desire her to complete that system, by providing

kindred institutions for the scientific education of the farmer, upon whom is levied so large a share of the taxes for the support of governmental and philanthropic objects.

Resolved, That it is the duty, as well as the interest of the State, to aid in furnishing the means for such an education, and that for the want of this education, millions of dollars and a vast amount of time, energy and money, are annually lost to the Commonwealth, by the misapplication of labor and capital in husbandry; and *resolved, further*, that this loss is mainly to be attributed to the want of a proper system for the acquisition and diffusion of correct information, as to the most approved arts of cultivation, and the best means of perfecting this unfailing source of independence and happiness.

Resolved, That a thorough systematic course of education is as necessary to prepare the cultivator of the soil for preëminence in his calling, as to secure excellence in any of the schools of science or art;—that this necessity is universally acknowledged when applied to other pursuits, and that the yeomanry of Massachusetts have a right to claim from the government the same fostering aid which is extended to other great interests of the community.

Resolved, That inasmuch as agriculture is the chief occupation of her citizens, the Commonwealth, in the organization of its government, should be provided with a *Department of Agriculture*, with offices commensurate with the importance of the duties to be discharged, of the abilities to be required, and of the labors to be performed.

Resolved, That while this board would respectfully refer to the wisdom of the Legislature the maturing of a system by which the wants of agriculturists shall be supplied, and thereby the prosperity and wealth of the people of the State increased, they most earnestly invite the attention of legislators to the several plans and recommendations submitted by the commissioners concerning agricultural schools, to the last General Court, showing the advantages of such institutions in other lands, and indicating the feasibility and practicability of similar establishments in our own country.

Resolved, That this board respectfully suggests to the Legislature the propriety and expediency of reserving a portion of the proceeds of the sales of public lands of the Commonwealth, in accordance with the recommendation of said commissioners, and with a view to extend that aid to a system for the promotion of agricultural science, which the importance of the subject so imperatively demands.

Resolved, That Massachusetts has always taken a leading part in most of the great enterprises which mark the progress of society;—that she is worthy of the high character she has secured, by the endowment of institutions for the diffusion of useful knowledge among the people, and that by the adoption of efficient measures for the professional education of her farmers and the better development of her agricultural resources, she will add another wreath to her renown, for the elevation of her sons and the advancement of the best interests of society.

MARSHALL P. WILDER, *Chairman*.

An animated and interesting discussion took place upon these resolves, in which A. W. Dodge, Dr. Gardner, Mr. Tower, of the Berkshire Society, Mr. Lincoln, and Harvey Dodge, of the Worcester Society, Mr. Caldwell of the Worcester (West) Society, Mr. Daggett of the Bristol Society, and others, participated. Strong ground was taken in favor of a farm-school, where experiments in tillage, in breeding and feeding stock, tests of manures, &c., should be made by practical men, and reported for the general good ; and where farmers' sons could learn the occupation of their life under the most competent farmers of the state ; aided by a course of instruction that would enable them to analyze their soil, learn its deficiencies, and prescribe remedies. The further discussion of the resolves was postponed till the next meeting of the board.

REPORTS OF DELEGATES.

The reports from the delegates appointed to attend the exhibitions of the different agricultural societies in the State, which took place during the past autumn, were read and accepted. From these reports, and those read at a subsequent meeting, the following extracts are made of such portions as are deemed to be of general interest, and as embody suggestions valuable to those who have the management of these exhibitions.

EXHIBITION OF THE ESSEX SOCIETY.

The Essex Society has, in many respects, been the model agricultural society of Massachusetts. It has, for a long series of years, not only *done*, but has had the wisdom to *record* its doings. Among its members have been numbered some of the most distinguished agriculturists and friends of agriculture in this country. It has not yet failed to have among its members those who worthily wear the mantle of its departed prophets.

In attending their exhibition, held at Salem, the 25th of September last, I expected to learn much and was not disap-

pointed. The change to this from the young, vigorous, and enthusiastic society of Norfolk, whose exhibition I had attended the day previously, at Dedham, was remarkable. Here as there, all was activity and life, but calm; and while the spectator admired, he was struck with the apparent unconsciousness of the actors that they were doing anything out of the ordinary course of business. You would think that they had been doing the same thing all their lives. Another striking difference was, that while, in Norfolk, many amateurs took part in the matter, here almost all were, or appeared to be, practical farmers. Salem, like Dedham, was full of people. Here as there, all were intent on one thing, the cattle show; all, good natured and obliging; and every one seemed disposed to do his share to make the day, which God had made so glorious, agreeable to his fellow-men.

The cattle pens were arranged in excellent order around the public square. The number of animals was not so great as I expected to see. Essex could do better, if she would, and she ought to do better. I saw none of those long strings of working oxen, such as the western counties are said to show. Essex could make a good exhibition in that way. I saw, however, in the pens, two pairs of working oxen, owned by Richard S. Rogers, of Salem, which, on that day, were "wisely (?) kept for show." They were noble looking animals—I think the handsomest I ever saw. They ought to have been in the field, and have tried their strength and skill with some dozen other pairs of fine animals, well trained, who may well "stand on tip-toe when that day is mentioned."

Of cows I cannot remember any that struck me as specially worthy to be handed down in history. The fat cattle were neither numerous nor remarkable. Of bulls, were the Devon, Ayrshire, Native, No-horns, and mixed breed, and some good animals of each class. There were some fine specimens of swine, and the show was, on the whole, very good.

Horses and colts, a great number and many noble animals. This was the best exhibition, in this department, that I have ever seen in Eastern Massachusetts. The breeding mares exhibited, do not promise well for the next generation.

The exhibition of poultry far surpassed any that I had ever seen. If any of the domestic feathered tribe was unrepresented, I know not what it was. There was a vast congregation of ducks, turkeys, geese, and hens in endless variety, and some that would put to shame old Grimes's hen, of classic memory, if their owners' reports were true.

At the hall the show was good. The Horticultural Society held its exhibition on the same day, at another place, and I was surprised to find an exhibition of fruits only second to that at Dedham. Articles of use and beauty, of domestic manufacture, seem to be abundant, but, alas! this crowd and this hurry prevent my looking at them as I would; and the fair matrons and maids who exhibit them, deserve that they should have more time bestowed upon them. Of manufactures not domestic, Essex could make a wonderful show, if she were disposed; but I see very few articles exhibited.

The ploughing match was well contested. The entries were not numerous,—not above ten or fifteen, I think,—too few surely for that county. How quiet the men are! how well disciplined their teams! How beautifully smooth the furrows are turned! But here is an exception—here is a strange looking furrow; how came such a bungler to enter the lists? Ah, ha! That is the Double Michigan Plough, is it? The president has got hold of it now. Let me watch it. By your leave, sir, I will step on here. How handsomely it turns over that sod and places it in the bottom of the furrow, and then the other share throws six inches of pulverized earth upon it. That must be a great implement. Bravo, Mr. President—the Emperor of China never did such as that.

A procession was formed and proceeded to the church, without music. On cattle show days, men, and women too, are in a state of exaltation. A little more "pomp and circumstance," would be better. A sound and interesting address was delivered, before a large audience, by Rev. Milton P. Braman, of Danvers. After the address, we proceeded to dinner. It was in a large and commodious hall. Some four or five hundred persons at table, and nearly all genuine Essex farmers, is a sight worthy to be seen and never to be forgotten. The occa-

sion passed off delightfully. His excellency the Governor was present, and made some remarks. Only one thing was wanting. No ladies were present. The Essex Society, which has taught others so many good things, may, in that particular, learn a good lesson of others. Here, as in Norfolk, two days are required to see what one would desire to see; to transact the business properly, and to do justice to the exhibitors.

J. H. W. PAGE.

EXHIBITION OF THE MIDDLESEX SOCIETY.

This exhibition took place at Lowell, on the 24th day of September last, and the undersigned had the satisfaction of attending it, in company with Messrs. John C. Gray and Edward Everett, of the State Agricultural Society.

Being there, however, as an invited guest of the society, and not as a delegate from this board, and having no expectation of being called upon for an account of the exhibition, the undersigned did not pay that close attention to its details, which would enable him to describe them with anything of discriminating justice. He can only offer to the board, therefore, a general view of the occasion; and even in doing this at so late a day, he must be allowed to borrow from the accounts which were prepared by others at the time.

The festival was opened by a ploughing match, at which twenty-two teams were entered for the prizes. Of these, eight were double teams of four oxen each; ten single teams of a pair of oxen each; and four horse teams of two horses each. In the language of one well able to judge of such operations, "the ploughmen exhibited great skill in the use of their implements, in avoiding stones, and in the nice movements and changes of the plough in passing uneven places, in order to leave a smooth and workman-like furrow."

Next followed a drawing match, at which seven teams appeared on the ground. Some of the cattle engaged in this trial, were of great strength and beauty, and seemed under excellent discipline. They performed the work of drawing a load of

8,512 pounds, (wagon included,) for a distance of 40 rods, up hill, with remarkable steadiness.

The show of cattle in the pens, was large, and of a high order. Several native cows attracted attention as presenting the best points of the animal. Among them, was one belonging to Samuel Horn, of Lowell, which was said to have yielded twenty-six quarts of milk per day, during the months of June, July, and August; and another very fine cow, belonging to Alexander Wright, of Lowell, which was said to weigh 1,400 pounds. There were also a number of good specimens of the Durham, Devon, Alderney, or Jersey, and Ayrshire breeds. One yoke of fat cattle was on the ground, weighing 5,500 pounds.

There was no display of horses, or of sheep, the society not having been accustomed to offer premiums for those animals; and the show of swine, though presenting a few fine Suffolk boars and breeders, was small.

The exhibition of fowls was extensive and of the highest character. There were twenty-nine competitors in this branch of the show, and they offered for the prizes excellent samples, both of the best of our common breeds and of all the imported varieties.

The most striking peculiarity of the occasion, was the union of this agricultural festival with the exhibition of the Middlesex Horticultural Society, and with the fair of the Middlesex Mechanics' Association. Hitherto, for half a century past, the cattle shows of this oldest of all the county societies have been held at Concord, and the occasion has been one of purely agricultural interest. The late festival was held within the limits of the great manufacturing capital of New England, and in immediate connection with extensive and brilliant displays of the products of other branches of industry.

There was felt, however, to be no incongruity in the scene, and the gratified spectator passed along from one part of the exhibition to another, with only a deeper sense of the mutual dependence and common interests of all departments of human labor.

The show of fruits and vegetables was, of course, left to the horticultural halls, in which all that taste, skill, cultiva-

tion and science could accomplish, was witnessed in ample measure.

The exhibition of farming implements was confined to the mechanics' fair, where they were displayed in connection with every variety of curious machinery and exquisite fabric, which American invention and American industry have produced.

An address by the Hon. Linus Child admirably illustrated the great lessons of the day, and an agreeable meeting at the social board afforded an opportunity for the expression of those sentiments of patriotic interest in the promotion of the agriculture and the arts of our State, and of our whole country, which such an occasion could not fail to inspire.

The day was most propitious, and the multitude assembled evinced the interest taken in such shows by the people of the county and of the neighborhood. The presence of a larger number of those interested in agriculture, from other parts of the Commonwealth, was undoubtedly prevented by the fact, that the festival of the Norfolk Agricultural Society took place on the same day. It is hoped that one of the good results of the organization of this board, will be such an arrangement of these festivals hereafter, as will prevent them, as far as possible, from interfering with each other.

ROBERT C. WINTHROP.

EXHIBITION OF THE WORCESTER SOCIETY.

In obedience to the appointment by this board, I attended this exhibition on the 18th of September last. As on all former occasions, within my observation, here was presented much to interest and instruct. No county society has done more to aid and enlighten the farmers of the Commonwealth. For thirty years or more, the life-blood of information has flowed hence, as from the heart, and pervaded all the extremities, and the whole community has been greatly benefited by these influences.

By the kind attention of W. S. Lincoln, secretary of the society, I have been favored with a complete statement, (for four

years last past,) of the entries made and animals presented, at their shows. This statement, which is appended as part of this report, will sufficiently explain all inquiries on these points, and be a model, worthy to be imitated by other secretaries. A uniform system of reports, from the several secretaries, would greatly facilitate a knowledge of the comparative condition of the societies, and afford the means of preparing a condensed view of the exhibition of animals and products throughout the Commonwealth.

The ploughing match was the first object that demanded attention. Here were sixteen teams in the field, all single teams of one pair of cattle, without a driver. On inquiry of the chairman of the committee, whose experience is equal to that of any other man among us, I found it to be the deliberate opinion of the trustees of the Worcester Society, that one pair of cattle, without a driver, was a sufficient team for ordinary ploughing, and that it was not necessary or expedient to use more. If this be so it should be known. A large part of the farmers, so far as my observation extends, do not adopt this rule of action, in the ploughing of their own lands.

Dry and hard as was the earth in this field, it was apparent that the labor of ploughing was quite too severe for the team employed. By many of the teams the work was done with extraordinary ability, considering the disadvantages under which they labored. My opinion has ever been, that the operation in the ploughing match should be, as far as possible, an illustration of the best manner of operating on the farm, and that the work should go on in such manner, as it might be continued for three hours at least, without special inconvenience to the team employed. Because of the over-exertion on the part of the cattle in this contest, I except to the performance, and not because the work was not done with signal ability.

Among the ploughmen on the field, was a lad of fifteen years only, by the name of Stockwell, from Sutton, who deservedly took a high premium. When boys can thus contend with men, it is time for men to stand aside. What better diploma can the farmer's son take with him, than a certificate

from an ex-governor of the Commonwealth, and a president of an agricultural society of thirty years' standing, that he is one of the best ploughmen in the best county in the State ?

Of the stock presented, my attention was particularly drawn to the fine specimens of Durham, Devon and Ayrshire breeds, grown in this county. Very early, fine animals of this description were introduced here, the traces of which are distinctly visible. If I do not mistake, there is no county in the Commonwealth that has been more vigilant in this matter ; and judging from the general appearance of the stock in the pens, there has been no mistake in their partiality for these breeds. I forbear to extend remarks upon particular animals, because it will be done with so much more discrimination by the committees whose duty it was to compare them. It is with farm animals as with men, the traits of a good character spread far and wide, and are often to be found long after the originals have ceased to be remembered. With the fine specimens of young stock, presented by that model of good farmers, John Brooks, of Princeton,—with whom has been stationed the State Ayrshire bull,—and which were understood to be the offspring of that animal, I was particularly pleased. Equally well pleased was I with the specimens of stock from the farm of Harvey Dodge, of Sutton, who has in keeping the Devon bull, from the State Society. There is something either in the animals themselves or in the manner of keeping them, that ensures superior stock. This was so conspicuous on a comparison of these with other young stock, that no one could mistake the fact. I would not say that there were not single animals present, that would compare well with any of the offspring of these bulls, but there were no families that would compare advantageously with them.

The exhibition of fruits in the horticultural department of the show was splendid and imposing. Rarely, if ever, have I seen a finer display of peaches. Among these, the Early Crawford was conspicuous, some of the specimens measuring thirteen inches in circumference, and tinged with colors, rivalling in beauty the most charming objects of view. Magnificent pears, and products of the field and garden, evincing luxuri-

ance of soil and fidelity of culture, were exhibited in great profusion.

The products of the dairy, in fine specimens of butter and cheese, also appeared to good advantage. In no part of the Commonwealth, so far as my observation has extended, is the making of cheese more successfully pursued than on the farms of New Braintree and the towns adjoining.

This society, like most others in the Commonwealth, still continues to crowd its operations, at the annual exhibition, into one day. The thought occurred to me, when passing hastily from one object to another,—as was necessarily done,—whether more time could not be beneficially used at these exhibitions. What is worth doing at all is worth doing well. This consideration was more fully impressed on a subsequent visit at the show in Bristol County, which embraced two days, where everything seemed to be done to the best advantage. The conclusion to which I arrived on a view of these exhibitions, as well as those of the society with which I have long been connected in the county of Essex, is, that our agricultural societies, under a proper subdivision of duties, can advantageously make use of two days at their exhibitions. The first, perhaps, in preparatory arrangements and in examinations by the committees; the second, in views by the people and assemblies for mutual instruction.

A reference to the secretary's return, will show that the number of animals presented was quite equal to that of former years. This is highly gratifying, when it is considered that within a short time, several new societies have grown up within the limits of the original Worcester Society, almost rivalling this in magnitude of exhibition. If "he who makes two blades of grass to grow where but one grew before," is entitled to be considered a public benefactor, we can see no good reason why the rule should not apply to societies. Still, we should regret the arrangement that would essentially mar or impair the symmetry and completeness of any of our time-honored associations.

JOHN W. PROCTOR.

STATEMENT OF ENTRIES AT THE SHOWS OF THE WORCESTER
AGRICULTURAL SOCIETY FOR THE FOUR LAST YEARS.

	1848.	1849.	1850.	1851.
Ploughing, - - -	13	11	13	19
Bulls, - - -	9	18	22	17
Bull calves,* - - -		6	9	9
Cows, - - -	24	19	19	17
Heifers, - - -	51	62	69	60
Heifer calves, - - -	16	3	6	5
Pairs working oxen, -	21	30	24†	25
Pairs steers, - - -	31	26	30	31
Pairs steer calves, - -	4	2	3	5
Fat cattle,‡ - - -	33	11	20	13
Sheep, - - -	12	13	6	12
Swine, - - -	28	24	20	15
Poultry, - - -	10	15	30	57
Butter, - - -	9	11	11	11
Cheese, - - -	14	15	17	15
	<hr/> 275	<hr/> 266	<hr/> 299	<hr/> 311

The entries of sheep, swine and poultry, are of the distinct entries, and give no idea of the number of animals included in each entry. As, for instance, of ewes and weaned pigs, the rules require that there should be not less than four in each lot ; of poultry, not less than five ; in reality, the number in each lot of pigs frequently exceeds the required number, perhaps as high as ten or twelve.

WILL. S. LINCOLN, *Recording Secretary.*

* No premium offered for bull calves in 1848.

† Seth Wyman offered a team of 25 yokes owned by himself, in this year ; no premium had been offered.

‡ There were 23 fat oxen, 7 steers and 3 cows in 1849, but subsequently there has been no premium offered for fat steers.

EXHIBITION OF WORCESTER WEST SOCIETY.

The county of Worcester is so large in extent, that the outermost towns on her western border are distant from the town of Worcester, where the shows of the county society are held, more than twenty miles. The roads, too, leading thither, are over many hills. So that the driving of animals, especially fat cattle and new milch cows, was a matter of risk, of expense, and of loss of time. Hence, ten towns, Barre, Phillipston, Petersham, Dana, Hardwick, New Braintree, Hubbardston, Oakham, Dana, and one other town, were either unrepresented at the county show, or appeared at great disadvantage, beside the towns less remote.

This whole region of country is celebrated for its fine fat cattle, and for its working oxen and milch cows; its farmers have a laudable desire to exhibit their stock for inspection and comparison, and they determined to erect a new society within the county limits. An act of incorporation has been procured; a large sum of money has been subscribed, enough to entitle them to the bounty of the Commonwealth; a fine lot of land has been donated by an enterprising inhabitant of Barre, and on the first day of October last was held the first show of the new society.

At an early hour, long lines of neat kine appeared on the ground and took their appointed positions for the day. Swine grunted their gratification that they were to be pronounced upon, unsalted and unboiled. The fowls noisily greeted the assembling crowd. By and by, to the sound of spirit-stirring music, a long cavalcade of horsemen and led horses unrolled upon the plain. The Green Mountain Morgan exhibited his unequalled face in the van, and behind him appeared his progeny, fine scions of an illustrious stock. The display of horses attracted universal attention and admiration. At ten o'clock there was a fine trot around the common, open to all comers. Ninety yoke of cattle in fine condition appeared to compete for the premium of excellence; and of these there were but two yoke that would not have been creditable to any farmer. Of swine and sheep, the show was very select, but smaller than

it should have been. A proper enthusiasm in the poultry line prevails, and good specimens were exhibited.

The horticultural exhibition was gratifying to the most sanguine friends of fruits, flowers, and vegetables. In apples, the show was better than any other witnessed by your delegate this season. Of pears, there were good specimens of several varieties, and of vegetables the collection was large and excellent.

One great object of the appointment of delegates to visit the shows of the various societies, is to collect whatever may be found peculiar and praiseworthy in the arrangements of the show visited, and as well to report for the consideration of this board, whatever is, in the opinion of the visitor, of questionable good.

It is the privilege of the undersigned to have seen here much to commend, and little to condemn.

1st. The show of fat cattle was remarkable; and nowhere else, to the knowledge of your delegate, has any one farmer equalled the display of Harrison Bacon, of Barre, who exhibited thirteen steers, that weighed, in the aggregate, thirteen tons.

2d. The arrangements for the show of horses, though not precisely peculiar to this society, is commended for general adoption. A course was laid out, encircling the cattle pens, and at a given hour, previously announced, and well known, the committee on horses took their stand, after having examined the horses in a state of rest, to judge of them in motion. The contest of speed at no time degenerated into a jockey-race, although the competition was at times close.

3d. The articles of butter and cheese, for which this country is famous, were entered by numbers on the secretary's books, with corresponding numbers attached to the boxes and tubs. The committee, in judging of these articles, were thus uninfluenced by the unacknowledged but often potent spell of the previous reputation of an exhibitor. The firmest men are swayed by trifles more than they themselves would desire; and common humanity is governed considerably by fear or favor; and will be, so long as human nature continues to be human nature.

4th. Your delegate finds here one practice that is growing to be an evil, though himself was convulsed with laughter at what he condemns. The report on swine was one of the most irresistibly ludicrous performances, that it has been the lot of your delegate to hear. The report was replete with wit, and was delivered in a most creditable style. So, also, with the report on poultry. The committee on swine, also, were some five or six gentlemen of the amplest dimensions, and were selected with a view solely to their avoirdupois weight in the community. All these things are vastly amusing, but the condition of our swine will never be mended by smiles. Our farmers need good solid information on this subject, and that of poultry. In these two divisions of stock, almost every farmer is a breeder, and the best instruction and advice should be afforded to him by the reports, which are frequently the only agricultural intelligence he receives from year to year.

WILLIAM S. KING.

EXHIBITION OF THE HAMPSHIRE, FRANKLIN, AND HAMPDEN SOCIETY.

For more than a quarter of a century, this was the only agricultural society in the valley of the Connecticut. There are now three others, viz., the Hampden Society, the Franklin Society, and the Hampshire Society. The name of the parent society seems almost to be absorbed by her young and vigorous offspring, and yet it is so ancient and honorable that it may well be retained. The only serious evil likely to arise in the case, is, that as the parent society covers the same ground with the other societies, it may happen that premiums may be awarded, from year to year, for the same animals or products by two societies. In multiplying agricultural societies in the Commonwealth, it could not have been the intention of the Legislature to introduce this practice; and so far, at least, as regards the funds given to them by the State, the practice, if it arise, ought not to be encouraged. It becomes all the societies receiving the State bounty, faithfully to dispense it, as, apart

from the duty they owe themselves and the State, it is only in this way they may expect to receive it for the future.

The thirty-third anniversary of this society was held at Northampton, on the 8th and 9th days of October last. The undersigned, appointed as the delegate of the board to attend this anniversary, regrets that he was unable to be present during both of these days. The first day was devoted mainly to the show of cattle and the ploughing match. The latter was contested in a very spirited manner by thirty-three teams, and, as your delegate was informed, all horse teams. Indeed, the use of horses for ploughing, seems to be far more common in the western part of the State than in the eastern, and is more encouraged at their ploughing matches than with us. The show of cattle was said to have been better than that of several former years, but not so good as the valley of the Connecticut should present. From the weight given to your delegate of some of the fat cattle, the shows are decidedly before those on the seaboard in this class of animals. And well they may be, when it is remembered that the range of pasturage in Worcester county, and onwards through the State to the west, is far greater and better than that which is to be found in the east. The middle and western counties are grazing counties, whilst the other counties have but little to depend upon in the grazing of cattle. And here it may be remarked that the old pastures in the State are fast becoming exhausted of their scanty herbage, and demand most urgently the attention of our farmers to renovate them, and the liberal encouragement of our agricultural societies to aid in the work. Had the Legislature, in the general enactments in regard to these societies, provided that this should have been done, it appears to your delegate that more practical benefit would have accrued to the community than from the encouragement of the growth of forest trees, which is the only specific subject taken under the fostering care of the Legislature.

The societies in the valley of the Connecticut have given great interest to their shows, by offering premiums for the largest number of working oxen from any town. Three of these teams were present at the show at Northampton, 30

yoke from South Hadley, 25 from Hadley, and 25 from East Hampton.

With regard to the arrangement of the cattle pens, the plan here adopted has decided advantages; not that it is peculiar to this society, but it is worthy of note in connection with the arrangements for a cattle show. The pens are placed in parallel lines, a couple or more rods apart, and the space between is kept clear, in the first place, for the admission of the animals entered for the show, and, in the second place, for the committees, officers of the society and invited guests, that they may conveniently examine the animals. The masses of spectators have the outside space for their free use and occupation. In such an arrangement, the proper course would be, in labelling the pens with the description of the animals, and the names of their owners, to affix similar labels on both sides of the pens, so that all may have the necessary information. Where cattle pens are arranged in a single line—as is not unfrequently the practice—it is with great difficulty that the committees and those who wish most to examine the merits of the animals, are able to effect their object.

On the second day, it was the privilege of your delegate to witness a fine show of horses, such as only the western societies in the State are able to present. Nearly 100 specimens of this noble animal, which Lawrence, in his *Treatise on the Horse*, says, next to a beautiful woman is the most beautiful animal in creation, were here assembled as competitors for the awards of excellence. Assembled, not in pens crowded and confined, but, as they passed under the inspection of the committee, trotted out between the long lines of spectators, who, equally with the committee, had a full and fair view of their gait and action, as well as of their different points of merit. An illustration was here furnished of the advantage of the services of the military forces at these exhibitions. By their aid, the lines of the spectators were kept in their proper places, so as to give ample space for the equestrian evolutions. In general, however, the presence of the military on these occasions is, in the view of your delegate, entirely incongruous. As the day is the farmer's holiday, devoted to the arts of peace—to the

art that of all arts most conduces to peace, and flourishes by peace, it is difficult to see the propriety of associating with it the art of war, even in its mildest aspect.

The hall, where were exhibited the fruits and domestic manufactures, is one of the largest and best adapted for the purpose, your delegate has ever entered on such occasions. It is the Town Hall of Northampton, and if the legal voters of that town, at their municipal meetings, bring forth fruits as rich and rare, as were here displayed by its farmers and horticulturists, it must, indeed, be a privilege to be at their meetings. The show of apples was superior to that of other fruits, and was of the highest order. If the apple can be generally grown in the Connecticut valley, in such perfection as the specimens here exhibited, the farmers in that region should engage largely in this branch of husbandry, and with proper skill and care they would be abundantly rewarded. The premiums on fruit, were awarded in sums of considerable amount to the best collections and the largest varieties. The practice, so common with our societies, of distributing premiums for fruit in small sums—sums less than a dollar, even to a quarter fraction of a dollar,—and to every contributor, seems to be at variance with the mode of bestowing premiums in the other departments of an agricultural show. Fifty dollars awarded in ten premiums, would accomplish more good, than if it were divided into fifty premiums, or one hundred. And yet the latter course is the most prevailing one, and thus all distinctions among fruit growers are confounded, and competition so far is paralyzed.

The reports of the different committees seem to be drawn with care, and some of them to possess not a little merit, as literary productions. The reports on fruits and vegetables, made to this society in 1847 and 1848, by the lamented Woodward, are models of their kind, and will long endure, as a perennial wreath, entwined around the memory of their gifted and philanthropic author. Fine writing in an agricultural report, merely to exhibit the author rather than the subject, is not desirable. By no means; and yet careful attention to the drafting of a report ought not to be neglected. It is indeed grateful to a mind of any perception of the just, and true, and

beautiful, to meet with well-executed reports on agricultural topics. The writers of such reports deserve all thanks for the example they set to others ; and it is worthy of consideration, whether a liberal premium might not be awarded by all our societies, to the authors of the fullest and best reports that are presented to them. The same remark might be made in reference to the best statement of competitors for premiums.

This society has, for a series of years, made it their practice to secure gentlemen of rare scientific attainments, to deliver the address at their anniversary. They have thus been enabled to reap a rich harvest from the intellectual seed, which is annually, and, as it were, broadcast, sown among them. They were equally fortunate the last year and the present, in having as their agricultural teacher, Dr. Daniel Lee, of the agricultural department of the Patent Office, at Washington. Fortunate will it be for all our societies, when they can obtain such men to address them ; more fortunate still, when they shall feel the want of such men, and zealously seek after them. The dignity and independence of the farmer have too long been the theme of our agricultural addresses ; too long have our orators flattered the vanity of farmers, and persuaded them to rest satisfied with the improvements already effected in their husbandry. The time is at hand—if it has not already arrived—when agriculture, not as it is, but *as it may be ordered*, must be the subject of discourse ; when the means of advancing it, must be pointed out, and the minds of thinking farmers excited to new efforts and higher attainments.

In conclusion, your delegate would state that the address of Dr. Lee was followed, at the dinner table, by remarks of a similar purport,—illustrating and enforcing the necessity of science to the full development of the resources of our soil. The visit of your delegate was to him most interesting and profitable, and he can only regret that from the rich field into which he was sent, he had not brought home to you more sheaves.

ALLEN W. DODGE.

EXHIBITION OF THE HAMPDEN SOCIETY.

In presenting a report of the exhibition of this society, I have to offer only such information as I could obtain from others who were present. It was held at Springfield, on the first and second days of October, under all the advantages of pleasant weather and facility of access to that flourishing town. Never, it is said, was the county of Hampden better represented, at any former exhibition, in number or quality, by men and women, and animals, vegetables and articles of domestic manufacture. Young men and maidens, old men and children, from different parts of the county, members of the society and transient visitors, spent two delightful holidays, in a manner appropriate to the high character of the community, and to the purpose for which they had come together.

There were 82 entries of horses; 17 of bulls; 12 of milch cows; 26 of heifers; 49 of working oxen; 18 of steers; 20 of fat cattle; 20 of sheep; 26 of swine; 60 of fowls; 16 for the ploughing match; 35 of butter, cheese and honey; 18 of bread; 300 of vegetables; 298 of fruits and flowers; 76 of domestic manufactures; 28 of mechanic arts; 4 of farming tools; 20 paintings and daguerreotypes; 45 of children's, and fancy, and worsted work; 1 of tobacco; 10 orchards; in all, 1179 entries.

This enumeration is of itself sufficient to show that the spirit of agricultural improvement is awake in Hampden, and, as compared with past years, is gathering force, promising, in time, to possess the whole county.

The arrangements made by the directors for the accommodation of the numerous animals, and the articles generally, appear to have been judicious and satisfactory. The oxen and cattle generally were excellent, both in size and beauty of form, and fully sustained the credit of old Hampshire in general, and Hampden in particular, distinguished as they have been for fine cattle. One pair of oxen weighed 5000 pounds, and there were twelve head that weighed each from 2200 pounds to 2500 pounds each. A number of very fine cattle were from Westfield. Some of the milch cows were uncommonly good. The one

entered by Amos Carlton, of Chicopee, in twenty-six weeks, gave 2266 $\frac{2}{3}$ quarts of milk, exclusive of the feed of the calf, at a net profit, including \$5 50 for veal and skin of the calf, of \$63 67. The show of horses was highly creditable to the society. This was especially true of the geldings and the carriage horses generally, both in respect to number and quality.

Of fruits, there were 208 entries, while last year there were only 80. Among them were fine varieties of the apple, the pear and the peach. It is extremely gratifying to mark the increasing attention that is paid to this class of productions, beautiful as they are to look at, delicious as they are to the palate, and serving as they do to make home attractive. The vegetable department is spoken of as worthy of all praise. The vegetables were arranged in bushel baskets, in triple rows around the hall, and made an imposing appearance. Some of the parsnip roots were said to be about three feet in length. A single squash vine was exhibited, having on it sixteen squashes, weighing in the aggregate 700 pounds. Some of the finest specimens of vegetables were furnished by cultivators in West Springfield.

It remains for me only to add, that the address by Professor Norton, of Yale College, was worthy of the occasion and of the high reputation of the speaker.

At the next fair, "may I be there to see."

W. C. FOWLER.

EXHIBITION OF THE FRANKLIN SOCIETY.

The fair of this society was held in the beautiful and flourishing town of Greenfield, in the fertile valley of the Connecticut river, on the 15th and 16th of October. Both days being remarkably fine, thousands were attracted to the scene. At 10 o'clock on the morning of the first day, there was a superior display of neat stock, on a beautiful field selected for that purpose, in the vicinity of the village. The number of large and well-formed bulls, and of fat oxen, was very great, whilst farm stock of every other description was all well and ably represented.

But nothing so much pleased us, or attracted from others so much attention, as the long and splendid concatenation of ox-teams from Shelburne and Greenfield. That from the former place being, in the language of the committee on that subject, "the finest, heaviest and best matched, in form and color, of any team ever shown in Massachusetts." Concurring most fully in this opinion, and deeming the beautiful and majestic appearance of these animals as presenting one of the finest features of the exhibition, we cannot refrain from earnestly recommending the example of these towns to the favorable consideration and adoption of other agricultural districts in the Commonwealth.

At the trial of working cattle, on the same day, in the street leading to the depot, such loads were drawn as very clearly evinced the admirable training and muscular strength of the animals, to the great satisfaction of a multitude of spectators.

The ploughing match came off in the afternoon, and was uncommonly successful. The field selected for this operation, was of a stiff clay soil, but of a smooth and even surface. Arriving on the spot with a number of other gentlemen, at the appointed hour, we were detained a long time before the teams started. To many of the spectators this was not agreeable, and were we to mention any circumstance connected with this part of the exhibition, not precisely in accordance with our own taste and judgment, it would be the fact that there was too much delay in making the preliminary arrangements, after the time assigned for the commencement of the work. But this delinquency is not uncommon in other societies. It was probably unavoidable here. Twenty-four entries for the ploughing had been made—eighteen competitors were in the field. The teams, taken as a whole, were by far the finest we ever saw, being mostly single ox-teams, of great size, strength and beauty. The committee awarded the premiums, irrespective of the precise depth of the furrows, the same being from six to eight inches deep. The Michigan, or Double Plough, was also operated, and received many encomiums from the farmers present, as an implement likely to be of great utility. And to crown the whole, a plough, manufactured by Prouty &

Mears, was found to work well without the aid of human hands, and finally eclipsed all the achievements of its "illustrious predecessors."

At the late ploughing match of the Bristol County Society, it was observed that the last furrow of each of the lands ploughed, was, by the direction of the committee, left standing, without being cut or inverted; while here in Franklin county, great pains were taken to have the last furrow smoothly and nicely turned. We are compelled to say that, in our judgment, the practice of our friends in Franklin is far preferable to that referred to in Bristol.

On the second day, horses were the only stock exhibited. The display was on Maine street, which is very wide and spacious, and no part of the exhibition attracted more attention than this. Instead of being confined in pens, as is the practice at the shows of most other societies, these noble steeds were driven at full speed by their owners. As they were of all descriptions and colors, we were quite sure that no one, however fastidious might be his taste, could have failed to be pleased, and to exclaim with king Richard III, "A horse! a horse! my kingdom for a horse!"

In contrasting this with other festivals of the kind, we saw much, very much to approve and admire. The custom of the Franklin Society of having all the members of committees designated by an appropriate badge, we highly approve, and from what we saw, we are also convinced that where it is deemed advisable to have an agricultural fair occupy two days, it is preferable to have the ploughing match on the first day, as was the case here, than on the second, as, by way of experiment, was the case in Bristol. Persons coming from a distance to attend the show of stock on the first day, can thus be present at the ploughing match, also, with the same animals, and allow them to be returned home on the same or succeeding day.

The address of Professor Norton, at the church, and the remarks made by different gentlemen at the dinner table, seemed to be directed to the discovery of the best means for the promotion and advancement of the science of agriculture and agricultural education. We will only add, in conclusion, that our

visit to the county of Franklin will long be remembered by us with pleasure, as among the most agreeable events of our life.

JOHNSON GARDNER.

EXHIBITION OF THE HAMPSHIRE SOCIETY.

In pursuance of the duty assigned, to visit the Hampshire Agricultural Society, 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, were 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.

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.

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 them.

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 repre-

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 ; and 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.

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 popu-

lar 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 ploughing 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 ploughmen managing with great ability and skill.

We noticed here, as well as at the exhibitions of other agricultural societies, the Michigan sod and subsoil plough. It resembles, if it is not identical with, the *plough of Morton*, described in a recent French publication, in possession of President Hitchcock. This plough, in the opinion of your committee, 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. The Michigan plough 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 subsoil which are thrown up; and by covering the sod, prevents the escape of the fertilizing gases, 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.

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.

Your committee 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 committee, therefore, congratulates this board, on the addition of this promising member to the agricultural family.

MARSHALL P. WILDER.

EXHIBITION OF THE BERKSHIRE SOCIETY.

According to appointment by the Massachusetts Board of Agriculture, the subscriber, in September last, attended the annual agricultural fair of the Berkshire Society, at Pittsfield. This society was the first incorporated in this Commonwealth, and is among the oldest in this country; Pittsfield and the adjoining towns may be reckoned with the best farming districts in the State. These towns are surrounded by mountains, giving, in a clear September day, a fine panoramic view. Your committee was induced to stop by the way, and witness part of the exhibition of the Hampden Society, at Springfield. By this delay, he regrets that on his arrival at Pittsfield, he found most of the live stock had left the show ground; but those which remained, oxen, sheep, swine, and fowls, gave evidence that the exhibition in this department must have been excellent.

The ploughing match was commenced early on the second day of the exhibition. The morning was fine, and multitudes in carriages and on foot, preceded by a fine band of music in an open carriage, repaired to the field appropriated for this trial. The teams, with a few exceptions, were fine in appearance, both oxen and horses. The spectators gave ample room for the trial. The marshal of the day preserved excellent order, and gave, in a clear voice, the directions to be observed. There was no urging of teams,—no noise,—all was done by old whippers, or without the lash. The ploughs were from our best manufacturers, and the work was well executed. The plough

that attracted the most notice, was the Michigan sod and sub-soil plough, held by Dr. Reed, of Pittsfield. Your committee observed, that at this show, the judges on ploughing were selected from out of the county, as far as practicable.

The trial of single and matched horses, gave quite an interest to the show of the society.

The exhibition at the hall, of household goods, of fine butter, cheese, honey, maple sugar, grass seeds and agricultural implements, together with the excellent display of fruits, was much admired.

After the delivery of an excellent and practical address by Marshall P. Wilder, the awards of premiums were read and paid off on the spot to the successful competitors. Your committee would remark here, that in front of the desk, on a table gently elevated on one side, were exposed to the full view of the assembly, in a most tempting manner, the silver plate to be distributed to the numerous winners.

On the whole, your committee found much here to admire, and that can be imitated with profit by other societies. He only regrets that he was not earlier on the ground, so that he would have been able to make a fuller report. He is strongly impressed with the belief that from these interchanges of visits, and a better knowledge of the practices of the various societies, together with a free interchange of opinions at such gatherings and at all meetings of our farmers, as also from our new bond of union, the Massachusetts Board of Agriculture, much may be expected to gladden the hearts of the tillers of the soil.

BENJN. V. FRENCH.

EXHIBITION OF THE HOUSATONIC SOCIETY.

The first feature presented by the Housatonic Society, is the ardor and enterprise of youth tempered by the judgment and discretion of mature years. This society is comparatively young, but many of its members have been for years active members of the Berkshire Society, and, as would have been expected, have carried many of the characteristics of the old society to the new.

Two days are devoted to the exhibition. All animals, all agricultural productions and fruits, all manufactured articles, and indeed everything offered for premium, are presented on the first day and examined by the respective committees. At the close of this day, all animals may, if their owners choose, be taken away.

The second day is devoted to the ploughing match, which is held in the morning, and subsequently to the anniversary address, reports of committees, distribution of premiums, &c. The premiums are paid in silver plate, and distributed by the marshals of the day to the successful competitors, as their names occur in the reading of the reports by the secretary. This method of presentation, this kind of public coronation of the victor, doubtless has its legitimate influence.

This society always presents a good show of animals, particularly of cattle. The exhibition in this department would not suffer by comparison with those of former years. The fruit department is rapidly increasing in interest. Until one year since, it had not been considered worthy of a distinct committee, but was made an appendage to the duties of the committee on butter and cheese. At that exhibition, the amount and variety were so large, that a committee was appointed at the time, and at the subsequent annual meeting in the winter, fruit was made the subject of a distinct committee-ship. At the present show, a convenient room was devoted exclusively to the horticultural exhibition. The display of vegetables was finer than usual. The number of specimens of seed corn, and of grain and grass seeds, was large and the quality excellent. This is, in our view, one of the most important items in an agricultural exhibition, and one which the Berkshire Societies would do well to encourage by increasing both the number and value of the premiums. We would make the same remark in reference to agricultural implements, whether manufactured in the county, or purchased out of the county and kept in it for sale. The progress of agriculture is deeply indebted to the improvement in implements, and any course a society can take, within the bounds of their resources, to secure still further improvements, will bring a rich reward.

The Berkshire Societies, as it appears to us, deal too much in results, too little in causes. Their reports tell us who has raised the best corn, and who the best wheat and rye; who has exhibited the best cow, and who the best oxen. This is well, but it is not enough. A large part of the premiums given to a successful competitor, is given for diffusing the knowledge which will aid another person in producing another specimen like it. But this seems to be forgotten. The "what kind was it?" and the "how was it produced?" are left out. There is nothing tangible. The unsuccessful competitor and all the rest of the world, are sent back to their farms, to feel their way with such lights as their own observation and experience have given them; whereas they are entitled to all the light the recipient of the society's bounty can give. If a premium is offered for an essay, not only must the successful production be given up and become the property of others, but it must be published to the world. We would not take the farmer's wheat and distribute it among others, but we would take the knowledge by which it was raised, and scatter it broadcast through the land; and if he would keep his *knowledge*, we would keep the *silver*. In reference to crops, there is always time enough for the producer to make his statements, and the committee their report, and if omitted there is no excuse for either.

From those committees, whose work is on the show grounds, where the entire afternoon must be spent in looking, and whose report must be presented to the secretary, the next morning, not very much, under present arrangements, should be demanded beyond the award of premiums and the grounds on which it was made. Absence from home and books, the noise and bustle of a public house, and all the concomitants of a cattle show, are, to the quiet farmer, not conducive to the preparation of documents of great accuracy; and reports prepared before the specimens to be reported upon are seen, and kept on hand,—as Cicero is said to have kept the introductions to his orations,—ready, with slight modifications, to be prefixed to an award on horses, hogs, or hens, are esteemed but lightly. They usually deal largely in "dewy lawns, and sparkling gems, and meandering brooks, glowing under the effulgence of the pale

moon," and are, to say the least, no better than moonshine, to aid the farmer in raising pigs or poultry.

But no such difficulties attend the exhibitor, and every entry of an animal for premium, should be accompanied by a statement of his age, breed, and manner of being fed and used. All such statements, with those on crops, fruits, and other products, should be preserved and subsequently printed entire, or the information condensed and given in a tabular or statistical form. By this course much valuable information would be elicited and gathered, to be scattered far and wide.

S. REED.

EXHIBITION OF THE NORFOLK SOCIETY.

I attended this exhibition at Dedham, on the 24th of September, 1851. When I arrived there, the streets were filled with people, men, women, and children, all moving in one direction. Everything indicated that the day was one of great interest and excitement. Upon proceeding to the scene of action, I found that the ploughing match was nearly ended, many teams having already accomplished their work. From a hurried examination, I got the impression that much of the work was performed with a creditable degree of skill, but I have seen fields which, as a whole, were better ploughed.

The pens for animals were admirably arranged, easy of access, and being erected on the borders of the lot, afforded sufficient space for the circulation of the immense crowd of eager and interested spectators. The specimens of neat stock were numerous, and, in many cases, of excellent quality. The Alderneys, exhibited by Thomas Motley, Jr., of Roxbury, and others, were to me a new and most interesting feature of the exhibition, and attracted general attention and admiration. A large proportion of the cows at the show, were pure blood stock. The horses and colts were neither numerous nor remarkable. The exhibition of swine was of a high character; among them were many superior animals of the Suffolk breed. The show of poultry was said to be very large, but I had no opportunity to examine it.

The fruits, flowers, and vegetables were exhibited under a vast tent, or rather, under a tent which would have seemed vast, but for the crowd which thronged it. There were various articles attesting the taste and skill of the fair daughters of Norfolk, but the throng of visitors and lack of time prevented a particular examination. I did not notice many articles of manufacture other than those of a domestic character. The prominent feature of the exhibition was the fruit. The president, at the dinner table, said, in substance, that in several respects, no exhibition of fruits in the world could surpass theirs of that day. That was, I think, no vain boast, but plain prose. Quantity, variety, and quality, all considered, I have never seen it equalled.

At the appointed hour, a procession was formed, to proceed to the church, to hear an address from George R. Russell, of Roxbury. The procession was formed and marshalled with greater order and decorum throughout, than I have ever witnessed on a similar occasion. I listened with deep interest and delighted attention to words of wisdom, seasoned with most polished wit, and thought the hour most pleasantly and profitably spent.

After the address, the procession was re-formed, and the society and its guests repaired to the appointed portion of the tent, where about one thousand persons, ladies and gentlemen, with merry and thankful hearts, partook of the good things so abundantly provided. At the table, as elsewhere, beaming faces, good cheer, hearty and unceremonious welcome, and thankfulness to the God of the harvest, prevailed. Speeches were made by the venerable President Quincy, and other gentlemen.

All orders of men, and women too, seemed to conspire to make the day of exhibition an occasion of real improvement and thanksgiving. The early and accomplished pioneers and fathers of husbandry and of horticulture in the county; young agriculturists and horticulturists, in the first flush of enthusiasm, pressing forward to fill the places of their seniors; professional men of every class, as well as out-and-out farmers, and their wives, and all their lads and lasses, seemed to enter ear-

nestly into the spirit of the occasion, and to vie with each other who should most heartily contribute to make the day one of pure enjoyment.

Time only was wanting. There was, in some things, hurry, if not confusion. That society, like others, needs more than one day for its exhibition. The youth of the Norfolk Society promises excellently well. I can only say to it, in Roman phrase, "*Macte virtute esto* ;" may it go on as it has begun.

J. H. W. PAGE.

EXHIBITION OF THE PLYMOUTH SOCIETY.

In accordance with a vote of the board I attended the late annual fair of the Plymouth County Society, and transmit to you a very brief account of such parts of the exhibition as fell under my observation.

It was noon when I arrived at Bridgewater, where the fair was held, and I was consequently deprived of the pleasure of witnessing the proceedings of the first part of the day. Having no further time to lose, I immediately visited the *cattle pens*, and was much gratified to see a handsome collection of *native stock*, which, if not distinguished by the marks and superior external beauty, which are peculiar to some of the imported breeds, impressed me with the belief that they had not suffered for the lack of kind care and good feed. The *cows* looked homely in shape, but that they were cows of "quality" I shall have occasion to show further on. The *working oxen* performed very well, and were in fine condition, but I despair of witnessing anywhere such capital performances as are usually to be seen, in this department, at the *Worcester* exhibitions.

The extensive show of *fruits and vegetables* quite surprised me. The variety of garden fruits was not as great as we bring out in Norfolk, but the apples and quinces far surpassed my anticipations. These staple fruits are evidently in high estimation in Plymouth county, and the specimens exhibited were as free from blemish as the best New York varieties. The veg-

etables—especially the roots—were fully equal to the same products of Roxbury and Brookline.

But there was one feature of the exhibition which is worthy of special notice, and had I witnessed nothing else, would have fully repaid me for my visit to Bridgewater. I mean the noble display made of the products of the *dairy*. In this department the industry and skill of the women of the Old Colony were shown to the highest advantage. In no truer way either can the good management of the farmer be tested than by the condition of the dairy. If the exhibition of butter and cheese of the Plymouth Society this year, compares with the average annual show, then the native cow of Massachusetts, with huge head, body and horns, is a superior producer, and can be made to turn out butter as generously, and as rich in color and quality, as is brought to us from the green valleys of Vermont.

The display of ornamental and manufactured articles was very extensive, and many of the specimens of female taste and skill were equal to any I have elsewhere seen. Doubtless much of the success of our agricultural societies is owing to the share taken in the exhibitions by the ladies; and the Old Colony Society is entitled to a full share of credit in this respect.

The annual address before the society, by our distinguished fellow-citizen, Mr. Teschemacher, was delivered before I reached Bridgewater. High encomiums were passed upon it by several who had the pleasure of listening to it.

I have to acknowledge the kindness of Hon. Philo Leach and Jacob Perkins, Esq., who accompanied me to the various divisions of the show, and secured to me every facility for deriving pleasure and profit by my visit.

EDGAR K. WHITAKER.

EXHIBITION OF THE BRISTOL SOCIETY.

I will briefly state my recollections of the exhibition of this society, which was held at Taunton on the 9th and 10th days of October last.

The first peculiarity was, the occupation of two days. On the first day, all animals and articles were presented and arranged for the examination by committees. The society met in the afternoon, and attended to the usual business of the annual meeting. Everything went on with order and propriety. The only thing in the arrangements, that occurred to be amended, was, that no provision was made for keeping the animals on the ground, over night. This seemed to be very desirable, as most of the visitors to the show were expected on the second day; and as a loss of a view of the animals presented, would materially detract from the interest of the show.

On the second day, operations commenced with much activity, on the ploughing field, there being thirty-six teams actually engaged. Among these were teams of two pairs of oxen, one pair of oxen, one pair of oxen and a horse, and one pair of horses. It was particularly gratifying to witness this variety of teams, for, so long as teams of these several descriptions continue to be employed by good farmers, it seems highly proper to give each of them a chance in the competition. It was pleasing to find every variety of plough, as well as of team; and, as a whole, I do not remember to have seen a ploughing match,—and I have seen many,—that was carried through in a manner more instructive. Without knowing the opinion of the committees, my own impression of the best performance on the field, was a lot in the extreme eastern part of the field, ploughed by a span of horses, attached to a Michigan sod and subsoil plough, and guided by the ploughman himself. Rarely is seen, work more thoroughly or expeditiously done. This plough may be commended to the notice of all those farmers, who are desirous of pulverizing their soil thoroughly, in the least time.

Next came the trial of working oxen, in the usual manner. It appeared to be well conducted, but not witnessing it through, I forbear to enlarge upon it.

In the hall for manufactures, fruits, and other articles, was a highly gratifying display. The workshops of Taunton and New Bedford, here exhibited almost every variety of mechanic industry, many of which would have shown to advantage, even

in the Crystal Palace, at London. Here, for the first time, I saw a complete display of the apparatus used in the whale fishery, by the aid of which so many millions are annually added to the resources of the Commonwealth. Herein, we see an illustration of Yankee ingenuity and perseverance; what it cannot raise from rugged rocks and sandy plains, it will not fail to command from the depths of the ocean. So true is it, where the spirit of freedom prevails, man fails not to go ahead.

In the halls was to be seen a large variety of the products of the dairy, in the form of butter and cheese, of superior quality. Where the feed grew that produced such fine products, is better known to those familiar with the county, than to those who have observed it only upon the line of their railroads. The tables also were loaded with an abundance of the various kinds of fruits, from many of the farming towns, and particularly from the splendid gardens of New Bedford. And what is worthy of all praise, these fruits were offered, on condition that they should be used at the dinner-table, so that all might taste, as well as see, the quality of the fruits. This being done, and the facility of growing them being explained, at the same time, to be in the power of every proprietor of the soil, the consequence will be, that many of these proprietors will, ere long, grow a sufficiency of such luxuries for their own consumption.

The formal address, the usual accompaniment of our county agricultural exhibitions, was wanting on this occasion. But its place was well supplied by appropriate remarks from his excellency the Governor of the Commonwealth, and other gentlemen of distinction present. Nevertheless, it is well to have an annual address at these exhibitions. It gives opportunity for a display of talent and a condensation of information, which, when distributed among the farmers, in connection with the reports of committees, is instrumental of much good. If other counties of the Commonwealth, in proportion to their natural advantages, would do as well as Bristol has done, they would have no cause to be ashamed of their condition.

JOHN W. PROCTOR.

EXHIBITION OF THE BARNSTABLE SOCIETY.

The annual cattle show and fair of this society were held at Orleans, low down on the Cape, on the 8th of October last. The weather was very fine and a large concourse of people, some from all the towns of our long and narrow peninsula, attended. About 600 persons, one half of them ladies, dined in company at Higgins's hotel; and probably 1500 spectators in all, were upon the ground. It was the first time the fair had been held on the Cape, below Barnstable; and the occasion showed, that among the people of the more sterile portions of the county, there was a lively interest in the success of the society, and the cause of agriculture.

The ploughing match was the first thing attended to in the exercises of the day. The number of ox teams was not so large as usual, the farmers of this vicinity depending mostly upon horse-labor for their farm work. It was well sustained, and attracted, as usual, much attention. The exhibition of stock, particularly of colts, was more extensive and better than on any previous fair, and such as would do credit to any county in the Commonwealth.

There was a very good show of fowls, which was a new feature in our exhibitions; among these the Shanghae and Cochinchina predominated. Of fruits and vegetables, were good specimens of almost all the varieties of the season. The dairy was not so well represented, though there were several good samples of butter.

The articles of domestic manufactures, which were numerous and received the greatest share of attention, were displayed in the Rock Harbor Academy. The room, as on other occasions, was quite too small to exhibit the articles to advantage. In this department were several new articles introduced, shell monuments and vases of very tasteful design and workmanship, crayon and other drawings, very beautiful. While there was no lack of the usual quantity of fancy articles, of worsted work and embroidery, the more substantial and useful products of female labor, carpeting, hearth-rugs, coverlets, counterpanes, blankets, cotton and wool cloth and hosiery, occupied a prominent place.

Specimens of the cranberry exhibited, deserve particular notice. It may be doubted whether larger or better specimens of this fruit were found anywhere in the State. The cultivation of the cranberry is, in some towns of the Cape, the most important branch of agricultural enterprise. Fifty bushels, a sample of which was exhibited, were raised on a quarter of an acre of land in Harwich, and were sold for three dollars per bushel. Large tracts of peat swamp are being rapidly converted into cranberry lots by covering the turf with white sand, and setting the vines in hills, one and a half feet apart.

There is on the whole, an increasing interest in this anniversary, and the cause of agriculture generally, upon the Cape, and our experience seems to prove, that the holding of the fair in different places in the county, tends to promote that interest.

The address by Judge C. E. Potter, of Manchester, N. H., was delivered at two o'clock, in the open air, from the rising ground in front of the Methodist church. It was a very sensible and practical discourse. The speaker contrasted the early days of New England agriculture, when the colonies were sometimes obliged to obtain corn from the natives, to prevent starvation, with the present agricultural operations. He went into a description of soils, pointing out the peculiarities of that of Cape Cod, giving some of his own experience in the adaptation of soils to certain vegetables.

He spoke of the farmers of our country as ever having been the true patriots, and always found on the side of good government and opposed to outbreaks of passion, pride or ambition, that have occasionally disturbed the peace and prosperity of the country.

OBED BROOKS, JR.

THIRD MEETING OF THE MASSACHUSETTS BOARD OF AGRICULTURE.

The board met, according to adjournment, at the State House, in Boston, on Tuesday, February 3d, at 10½ o'clock. There was a full meeting of delegates, all the societies but

Berkshire, being represented. Marshall P. Wilder, the President, in the chair; William S. King, Secretary, *pro tem*.

The several committees, appointed at a previous meeting of the board to report on ploughing, stock, farms, crops, and manufactures, presented their reports, which were accepted. These reports will be found at the close of the account of the proceedings of this meeting.

On a motion to print the reports and transactions of the board, an interesting debate ensued, in which many of the delegates participated, and it was

Resolved, That the executive committee of this board be instructed to confer with the Secretary of the Commonwealth in regard to the publication and circulation of their proceedings, and to make such application to the Legislature in relation thereto, as may be deemed expedient.

Resolved, That the executive committee be also instructed to take such measures as they may deem expedient, to secure a more general circulation of the Abstract of Transactions of Agricultural Societies, published by the State.

On motion of Mr. King,

Resolved unanimously, That the executive committee be authorized and instructed to make arrangements with Professor Fowler, a member of this board, who is about to embark for Europe, to procure from him a report on the agriculture and agricultural institutions of the countries he may visit.

The President presented to the board an extract from the minutes of the Pennsylvania State Agricultural Society, which held its session at Harrisburg, January 20 and 21, recommending the calling of a convention of agriculturists of the United States, to meet at Washington, at some day hereafter to be fixed, and the choosing of a delegate from each Congressional district, to be a member of such National Society.

The following preamble and resolution were offered by Mr. Daggett, and adopted :—

Whereas, This board, at their last meeting, held on January 14th, passed a resolution proposing a National Convention; and whereas, they have received a communication from the State Agricultural Society of Pennsylvania on the same subject :

Resolved, That said communication be referred to the President of this board for further consideration and correspondence.

On motion of Mr. Sprague,

Resolved, That the executive committee be charged with the duty of

making such recommendations to the various County Agricultural Societies, with regard to premiums, as they may deem expedient.

Resolved, That the matter of calling a future meeting of this board, be referred, with power, to the executive committee.

AFTERNOON SESSION.

The board met, according to adjournment, at a quarter past 3 o'clock, P. M., in the hall of the House of Representatives.

The President read an interesting letter from Dr. Lee, on the subject of a National Convention; warmly commending the project, and promising the concurrence of several States.

A document from Hon. Abbott Lawrence, Minister to London, regarding the National Agricultural Institution of Versailles, addressed to Marshall P. Wilder, was presented to the board by the President. The document was ordered to be accepted, and referred to the executive committee, and the President was requested to convey to Mr. Lawrence the thanks of this board for his attentive kindness, and for his sympathy with the objects of its organization.

The resolutions on agricultural education, presented at the last meeting of the board, were read and offered for discussion.

Mr. Wilder, in submitting these resolutions, remarked that it was a most extraordinary fact, that while the aid of science has been invoked to all other callings, and while it has been extended to the other interests of the State and country, by the National or State governments, to this day not a dollar directly has been contributed by our National Government to aid this most important interest of agriculture. What we want now is an institution to educate young farmers for their calling. He closed by reading an extract from Dr. Lee's letter, in favor of some such means as is proposed by the board, for the promotion of a thorough and scientific agricultural education.

Mr. Wheeler, of Framingham, spoke of the low ideas which existed in his younger days, in regard to the education of the farmer. It was thought if a boy learned to read, write, cipher, and spell, he would make an excellent farmer. Too much of this want of education exists at the present day, and farmers are too willing to go on in the old way of their fathers. He

showed, by alluding to Belgium and other European countries, that Massachusetts, under a similar system of scientific agricultural practice, might be made to produce a much larger amount of breadstuffs than she now does. He was decidedly in favor of encouragement to agricultural education.

Mr. Dodge, of Hamilton, discussed the application of science to agriculture, showing that this application is practicable. Alluding to agricultural science, as developed in Europe, he contended that the same great principles are applicable in this country. In England, science is recognized as a useful ally. Chemists are employed to analyze soils and to recommend treatment. They err sometimes, but the balance of good is in their favor. The English are a wide-awake people, and from the fact that they unanimously adopt scientific agriculture, he would be willing to follow their lead.

The science which answers for England, it is said, will not answer for us. Why not? The same sun shines on land there, and the same rain descends; the same crops grow there, and science is the same there, as here. The question is, then, why is not this science shown to our farmers? The great reason is, that there are not men enough here to teach it. There are a few men qualified for this duty, such as Dr. Lee, Professor Norton, and some few others, but they cannot be expected to experiment, uncompensated, for the benefit of others. Here, then, is seen the need of aid from the State, to extend the science of agriculture to the farming community. He hoped the day was not far distant when Massachusetts would contribute at least a pittance to carry out this object.

An agricultural bureau at Washington should be established. Let agriculture go up before the Federal and State Legislatures;—go, though reeking with sweat from the plough,—let commerce stand by for a day, and manufactures wait awhile, until agriculture's voice is heard demanding this aid. But he would not wait for this. The states should go on and establish agricultural bureaus for themselves, in order that they may collect statistics to be forwarded to the national bureau when that is established. He hoped that the friends of this movement would persevere in their work until their claim is allowed.

Mr. Gorham, delegate from the Hampden, Hampshire and Franklin Society, next spoke. He said he saw in the community a prevalent apathy in regard to this subject, in the continuance of which he foresaw great evils to the State, if not to the race. The dependence of all other interests upon agriculture he dwelt upon, and said that when *it* suffers all others suffer, when *it* fails all others fail. And yet the position of this cause, in a national point of view, is most sad and humiliating. It was useless to say that this cause would take care of itself. It would not. The calling has to do with the great mysteries and laws of nature, and you can no more expect agriculture to flourish without knowledge than you can expect religion to flourish separated from the practice of virtue and morality. What science has done for commerce on the ocean, she has yet to do for agriculture on the land. The ocean was once a barrier between countries. Timid voyagers crept from headland to headland. Science furnished the trembling needle that always pointed to the pole, and the barrier became a highway. Why will not science, if permitted, do as much for agriculture. The American farmers are looking anxiously for some guiding star to direct them in their calling. He believed that star had risen; that its glimmerings can be seen, and that with faith in it, it would lead to glorious results.

Professor Fowler, of Amherst, inquired, why at this day there should be any doubt of the value of education as applied to agriculture? Especially, why should this doubt exist in Massachusetts? One reason, he believed, is that the advocates of agricultural education are not distinctly understood in their principles or purposes. It was not true that science, in its application to agriculture, was independent of labor and capital. Mere book knowledge is not better than practical knowledge drawn from experience, and the friends of this movement do not entertain or sustain any such theory. Science, without common sense, will not succeed. What they mean, is, that science, *with* common sense, energy, and practical experience, will accomplish the desirable results at which they aim. He supposed a young man about to enter into a partnership with earth and nature, in his profession as a farmer. To enter into

this partnership profitably, he should understand the elements of the soils, the laws of geology and of the vegetable kingdom, in order that he may adapt the one to the other. The laws of animal physiology it is also necessary for him to understand, in order to adapt his stock to his crops. The laws of chemistry, of the composition of soils, of mechanics, the great laws and agencies of nature, all should be known and observed by him, in order successfully to prosecute his calling.

The great improvements in other arts, by the application of science, were alluded to in this connection, and the speaker asked, Is agriculture the only art that is to receive no aid from science? Is she, the oldest daughter of nature, after having fed her sister arts, to be dismissed without any dower? This ought not so to be; the friends of agriculture ought not to allow this so to be. He came to the conclusion that it is the duty of the friends of agriculture, and the duty of the Legislature, to establish an institution independent of all others, from which this knowledge and science can go forth. Establish it with limited means at first, and then let it grow, as the occasion may demand, and its usefulness may be exhibited in its results.

Mr. Proctor said, I concur most heartily in the general views of the resolutions now before this meeting. They say, in one word, that it is the bounden duty of the government, both national and state, to do something for the encouragement and protection of the interests of the farmer. Is not this so? Who are the farmers? Are they not *three fourths* of the whole community? How are they rewarded comparatively? Look at their resources exclusive of the lands they occupy, and will it not be found that the *one fourth*, comprising the commercial and the manufacturing interests, have more than the other *three fourths*? Is there any equity in this? Is not the farmer as useful and reliable as any other class of citizens? On whom has the State ever relied in time of danger, if not on the yeomanry of the country? Those, then, who are her main stay in time of peril, have a right to aid and encouragement in times of prosperity. How can this aid be best ap-

plied? Will it not be best done by educating and fitting them to pursue their employment with intelligence and success.

But *first* and *foremost*, should the State take this matter under its own fostering and guardian care. Let there be established a department of agriculture, analogous to that of education, to whom shall be entrusted the entire supervision and direction of all matters connected with this subject, and soon will it occur to them to mark out the path of improvement. Until such a board is established, no appropriation of money is asked. And when established, the probability is, no expense will be incident thereto, except that of sustaining a competent secretary—all of whose time will be required, in connection with the operations of the board. Surely no valid objection can be made to an appropriation so trifling, compared with the benefits to be gained. Much has been, and may be said in relation to the education of the farmer. Some say this can be done best, by establishing agricultural teachers, in the existing colleges and schools. That teachers of this description may be advantageously introduced, no one will for a moment doubt;—and that it would be highly useful for all, whatever occupation they contemplate, to know something of the science of agriculture, will be readily granted; but that the smattering of information there attained will be adequate to the object in view, no one acquainted with it can for a moment believe. Agriculture is a science—a science most complicated, and difficult to be understood. Its perfect comprehension needs a combination of all the other sciences;—chemistry, geology, botany, and mathematics, are all involved in the study of the science of agriculture. No one can hope to master this science, without becoming an adept, in each and all the others. It is not sufficient to learn them *technically* and *formally*—but he must enter into the philosophy of them, and understand the reasons of the changes brought about.

Mr. Bagg, of the Hampden Society, spoke of the necessity of the appointment of a body of men competent for the work—who should collect and embody the facts which exist now among farmers, and arrange them for the benefit of the community at large. Thrift, he said, was the invariable attendant

upon knowledge, not of scientific knowledge alone, or of practical knowledge alone; but of both combined. It was the duty, therefore, of the Legislature, to encourage this thrift by spreading knowledge among agriculturists.

Mr. Nash, of the Hampshire Society, believed that common sense and experience were of the first necessity, and to these, science would lend the most valuable assistance. He did not believe that practical farmers could become distinguished chemists. But there are principles in the sciences of zoölogy, of animal physiology, &c., which any person may acquire readily, and apply in his every-day experience. Such a knowledge may be obtained in a very short time—if the student be the farmer's son, or the farmer himself is directed to the right point. He would recommend a course of study from which advantages might be received at once. In these requests to the Legislature he would advise the friends of this cause to ask for a small sum to try the experiment, and then, if "their works did not praise them," they would ask for no more. He thought that more than \$10 might be saved in each one of the 100,000 barn-yards in this State, by knowledge of a proper management of the manure. Even at one dollar, \$100,000 will be saved to the State. The proposed grant of the Legislature would hasten this result, at least, several years, and even if it hastened it but one year, still as much or more would be saved as is asked for by the friends of this cause. He said that by an application of new treatment to a piece of land which he purchased, from eight acres he had increased the crop of grass from three tons to fifteen tons. He hoped the means of extending this knowledge would be granted by the Massachusetts Legislature the present session.

EVENING SESSION.

The meeting was called to order at 7 o'clock. Lieutenant Governor Cushman offered the following resolution, which he sustained in a few interesting and appropriate remarks:—

Resolved, That the resolutions now under consideration be adopted, and that the executive committee be directed to present the same to the Legislature, and to urge such action by that body as may be thought most expedient to carry into practice the *principles* contained in said resolutions.

He said the question most important is, what shall be done? The resolutions have been ably discussed, and the unanimous opinion seems to be that the time has come when agriculture should be exalted and receive from the government that attention and aid which is her right. How shall this be done? By the establishment of a Board of Agriculture as indicated in one of the resolutions. Make agriculture one of the departments of the government.

Mr. Clark, President of the Hampshire, Hampden and Franklin Society, was called upon. He said the word science had got to be a humbug. Some of the weekly agricultural papers had held this word up as a source of terror to the farmers, threatening them with the loss of their farms. Science is truth. Knowledge is science, and knowledge is power. The man who possesses the most knowledge, finds it all useful upon his farm; the more he knows, the more he wants to know. The objections to this subject, he believed, arose from ignorance, and from those who are willing to abide in their ignorance. Farmers ought not thus to be taught to break down their own interests. We want more knowledge to prevent the misapplication of labor—and a school is required to impart this knowledge.

Mr. Daggett, of the Bristol Society, next spoke, and expressed his gratification at Mr. Nash's remarks, but thought they did not go far enough. Mr. Nash, he said, showed that the great majority of farmers could not be thoroughly, scientifically educated. Is not this, Mr. D. asked, an additional argument why a school should be established? Suppose a school be established with say one hundred and twenty scholars, and after having acquired their education, they distributed themselves through the towns in the Commonwealth, where they put theory and knowledge into practice. Their neighbors around them would copy their example—and thus, *by example*, would this knowledge be disseminated from town to town throughout the State. Why, he asked, do farmers take so little interest in the promotion of this knowledge? It is because they do not feel its importance. The great object of this school should be to disseminate knowledge throughout the State.

Mr. Sprague, President of the Plymouth Society, spoke of the pleasure he had experienced at these meetings. The opinion was expressed by farmers from all parts of the Commonwealth that more agricultural knowledge is needed in our own State; and this unanimity of opinion strengthened very much the hands of those engaged in this movement. He believed it cost more to raise a bushel of grain in New England than in any other country,—owing to the sterility of the soil. This disadvantage is to be overcome,—and he believed it could be done by farmers better understanding the duties of their profession. It was difficult to fix upon a plan for extending this education. Different schemes were proposed. He was willing to begin with a commissioner of high scientific attainments, who, if thought advisable, might be summoned by a board composed of the presidents of the incorporated agricultural societies. This board should offer premiums for experiments calculated to throw light upon practical farming; these experiments to be made under the direction of the commissioners, and the premium to be paid by the State. In this way much valuable information might be obtained.

Dr. Gardner, of Seekonk, hoped the propositions which had been advanced might be carried out. He would like to see an agricultural school, though he believed the better course would be, to disseminate agricultural information by means of the district schools. He would also advocate the establishment of an agricultural professorship in every college in the State. This course, he thought, would reach a far larger number of farmers or farmers' sons, than one exclusively agricultural school.

Rev. Dr. Choules said, the suggestion of the appointment of a commissioner, as made by Mr. Sprague, struck him favorably. Associated with such a commissioner, there might be ten or twelve persons to go through the various school districts in the State, and lecture upon the importance of scientific education to the farmer. Meetings such as these are important, but much might be accomplished by going right among the farmers themselves, in their school districts, and talking familiarly with them upon the subject. This course would make an al-

teration in the feeling of the masses upon the subject, and that is what is wanted. He believed farmers are yet to be taught that they must "magnify their office." A practical farmer was very well, but he cannot make farmers. He cannot educate others to be farmers. An educated man is a powerful man, whether he be a farmer, a mechanic, or an artizan. The man eminent in his profession, whatever it is, stands before a third or second rate man, in another calling. Power is what is wanted by our farmers, and this must be got by knowledge. Dr. Choules alluded to what he observed of farming in his recent tour through Europe. He was astonished at the results he there saw, and which showed the most extended and thorough system, connected with the most rigid economy. He eulogized the exhibition of the British Royal Agricultural Society, and believed \$10,000 would be well expended in sending a delegation of our practical farmers to the great exhibition of this society, and then let them come home and tell what they had seen. They would confer a great benefit upon the farmers of Massachusetts.

Mr. Bird, of the executive council, did not agree with the general ideas which had been presented. He did not believe a society like the Royal Society in England would help our farmers, and to show this, proceeded to contrast the condition of the agricultural population there, with ours. He believed we have now all the machinery in operation which is necessary for the diffusion of agricultural knowledge, and that machinery is our system of common schools. He did not believe in colleges of any kind, as the proper place to impart this instruction, and thought the common school system is all that is needed. He also denied that the State had afforded assistance to other interests to the neglect of agriculture.

Professor Fowler replied to Mr. Bird, and showed that other interests had been better cared for than agriculture. He said the interest of the country might be divided into three great branches. First, the agricultural branch, which produces the raw material; second, the manufacturing branch, which works the raw material into shape for the various uses of man; and third, the interest which conveys these products to different

portions of the country or the world, to supply the demand for them. Now, he would ask, is it not true that the country has done much for manufactures, and for commerce, for railroads, &c. These two branches have received much aid and encouragement, but the agricultural branch has not received aid. There was another way in which this might be shown. The last returns show that the number of native Bay State men who are engaged in tilling the soil in Massachusetts is gradually decreasing, and their places are being filled by foreigners from all portions of the old world. Our young men of talent and enterprise are forsaking their farms and going into other callings, where there is more opportunity for exercise of their powers. It is admitted that science is the proper basis for all the arts. It is important that the want of the application of science to agriculture should be felt, and then we should go on to apply it. Common schools would never meet the wants of the farmers for agricultural education. It must be taught in a substantial independent institution. He also objected to the idea, that there is an antagonism between our colleges and common schools.

Mr. Putnam, of Roxbury, said, that the best way to promote agricultural education is to teach farmers' sons to observe closely the laws and agencies of nature in their relation to agriculture. He expressed his satisfaction at the tone of the debate during the meeting, and pledged himself to use all his efforts to promote agricultural education in any position where he might have the opportunity. His own idea was, that there are few who are competent to teach all that is desirable—and yet a great deal of knowledge exists in the community. We want some spot where it can be got together. Some fifty or one hundred men to go round to the various towns as teachers, might disseminate much knowledge. We must have some such place to prepare them. He did not wish a class to be educated to be above work. It would be dangerous to our liberties. The freedom of every country might be measured by the condition of the actual tillers of the soil. Let them be intelligent but hard working. His own views were in favor of a school where farmers' sons can be taught practically in their

callings. These pupils would go forth as school teachers and disseminate this knowledge. He would have a farm managed by one of the best practical farmers he could find, to lead the boys through the field. In the school room they might have lectures from the most thoroughly scientific men who could be found.

Mr. King, editor of the *Journal of Agriculture*, illustrated the application of science to agriculture, and showed the good results which might be expected to follow this application. He closed with an appeal for a suitable school to teach this science.

Remarks were also made by Mr. Nash, of the Hampshire Society, by Mr. Harvey Dodge, of the Worcester Society, and by others, of which, from the lateness of the hour, no report was made.

The resolutions were adopted, and the meeting adjourned.

In pursuance of the resolution adopted by the board, the following memorial, with the resolves on agricultural education, was presented to the Legislature :—

To the Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled, the subscribers, officers of the Massachusetts Board of Agriculture, beg leave to submit the following MEMORIAL :

At a late meeting of the board, the accompanying resolutions expressive of the sense of the board on the importance of agriculture, and of the adoption of measures for its improvement, were unanimously passed; and they are now respectfully submitted by the undersigned as a part of their memorial, and in accordance with the following vote :—

“ Resolved, *That the resolutions now under consideration be adopted, and that the officers of the Board of Agriculture be directed to present the same to the Legislature, and to urge such action by that body as may be thought most expedient to carry into practice the principles contained in said resolutions.*”

The general subject is one which has been often brought to the consideration of the Legislature. For this reason, your memorialists deem it unnecessary, at this time, to engage in its elaborate discussion. They would particularly refer to the report of the commissioners “ concerning an agricultural school, and other subjects relative to the advancement of literature in this Commonwealth,” which was made to the General Court in the month of January, of the last year, and printed among the documents of the House of Representatives, No. 13. In this document was embodied the report of the Rev. President Hitchcock, of Amherst College, who being in Europe in the sum-

mer of 1850, was requested by the above-named commissioners, of whom he was himself one, to visit as many of the institutions for agricultural education in Europe, as would enable him to understand the system of instruction pursued in those schools, and the mode of conducting and supporting them. The commissioners, in presenting to the Legislature last year the report of President Hitchcock, expressed the opinion, that it embraced an amount of information and research never before communicated to the American people on the subjects referred to. Your memorialists concur in this estimate of the value of President Hitchcock's memoir, and they consider it as superseding the necessity of any elaborate argument, on their part, as to the expediency of extending public aid and patronage to agricultural education.

Without entering upon any general views of the importance of agriculture as the leading pursuit of the people, and of the expediency of adopting some measures hitherto untried in this Commonwealth, to promote its cultivation, your memorialists would respectfully ask the attention of the Legislature to the two practical measures which have been proposed for this end :

The first is the establishment of a Board or Department of Agriculture, as a government institution. Among the resolutions above referred to, and appended to this memorial, is the following :—

“*Resolved*, That, inasmuch as agriculture is the chief occupation of her citizens, the Commonwealth, in the organization of its government, should be provided with a DEPARTMENT OF AGRICULTURE, with offices commensurate with the importance of the duties to be discharged, of the abilities to be required, and the labors to be performed.”

This subject engaged the attention of the last Legislature, and a bill was reported from the joint committee of agriculture, providing for the creation of a board of agriculture analogous to the board of education. It was to consist of the governor and lieutenant governor *ex officio*, and of members to be appointed by the agricultural societies. It was to have power to employ a secretary, and to prescribe his duties ; and its great object was to pursue a course of measures in reference to the agriculture of the Commonwealth, similar to that which has been pursued with such success by the board of education in reference to that great interest.

Among these measures may be enumerated a visitation of the county agricultural societies, and attendance on their annual exhibitions ; the establishment of an annual State exhibition to be held successively in the different counties, with a distribution of premiums under the authority of the board ; a systematic agricultural survey of the State once in ten years, with a view to ascertain the progress of husbandry ; a full register of agricultural statistics for the Commonwealth ; and the dissemination of information valuable to the farmer, together with the formation of a State agricultural library.

It is believed that the organization of an agricultural board, authorized by law, to adopt these, and all other appropriate measures to promote the improvement of agriculture, might at a very moderate expense, render great benefit to this important interest.

The other measure above alluded to is a School for Agricultural Education. As the principal object of President Hitchcock's report is the collection of in-

formation relative to institutions for this purpose in Europe, your memorialists would particularly ask the attention of the General Court to his statements on this subject. It will appear from the facts therein set forth, that these institutions have greatly abounded of late years, and that they are most numerous in those countries which have made the greatest progress in husbandry.

Your memorialists know no reason why such an institution should not be as much wanted, and as beneficial in Massachusetts, as in any country of Europe. We possess a soil of that medium fertility, which makes it necessary to come in aid of nature, by all the resources of art and science. This circumstance gives peculiar importance to the dissemination of that knowledge, which is necessary for the greatest possible enrichment of the soil, the invention and improvement of implements of husbandry, the choice and perfection of breeds of animals, the introduction of superior varieties in the vegetable kingdom, and in a word, the more productive management of a farm in all its departments. For these purposes resort must be had directly or indirectly to almost every department of knowledge; and your memorialists know of no way by which that knowledge can be attained but by a regular course of instruction.

If it is said that this knowledge can be got out of books by individual and unaided inquiry, this is true to some extent, but no more true of agricultural knowledge than knowledge of any other description. Your memorialists are not aware that it is any more easy to get a thorough knowledge of husbandry by individual exertion and private study, than it is to acquire in that way a competent knowledge of law, medicine or divinity.

Again, your memorialists are sensible that there is a pretty general prejudice against what is called "book farming," and a preference as general for a practical knowledge of the subject. But there is, your memorialists conceive, no opposition between them. If there were, the objection would hold, not so much against institutions for agricultural education, as against the resort to books for private instruction in husbandry. An agricultural school would be provided with an experimental farm where all the processes of husbandry would be performed; with collections where specimens of all the substances useful in farming would be exhibited; and it would be provided with a teacher or teachers practically versed in the art, and able to give instruction not only in the lecture-room, but on the field. The proposition that practical knowledge is more useful to the farmer than book knowledge, certainly furnishes no argument against such an institution. It is one of the most effectual agents for imparting practical knowledge.

Mere book knowledge, if there is any such thing, that is, knowledge derived from meditation, without any experimental acquaintance with facts, must of course be too general to be of value. But knowledge derived from experience does not cease to be valuable because it is recorded in a book. On the contrary, it is in this way that the knowledge of one man becomes available to other men. In institutions for education, however, still a further step is taken. The learner is guided in the choice of books; and the instructions of the dead letter are rendered more impressive by the living voice.

Practical knowledge is got in various ways; from personal observation and experience, from the study of books, and from the instruction of others. In

whatever way it is got, it is better than ignorance. Your memorialists are persuaded that a good foundation in useful science, especially of chemistry, is the best foundation for the enlightened and profitable practice of the art of husbandry.

Your memorialists do not feel it necessary, on this occasion, to dwell at length on the details of such an institution for agricultural education as it may be proper to establish. These details may be properly left to the wisdom and discretion of those who may compose the board of agriculture, should the Legislature think it expedient to establish such a board. The most important point is to lay the foundation, and to leave the development to time and experience. It may only be observed that provision for instruction by lectures, and the use of the best text books on the one hand, and for practice in an experimental farm on the other, seem to be the two great features of an institution for agricultural education.

For further views relative to the foundation and endowment of such an institution, your memorialists respectfully refer to the report of the commissioners above alluded to.

MARSHALL P. WILDER, *President.*

HENRY W. CUSHMAN,
JOHN W. LINCOLN,
Vice Presidents.

EDWARD EVERETT,
JOHN W. PROCTOR,
J. H. W. PAGE,
WM. C. FOWLER.
BENJ. V. FRENCH,
Executive Committee.

ALLEN W. DODGE, *Cor. Secretary.*

ED. K. WHITAKER, *Rec. Secretary.*

February 4, 1852.

REPORTS OF COMMITTEES.

PLOUGHING.

Ploughing, as it is first in order of the operations on the farm, so, when viewed in all its bearings, will be found first in importance. It is a science imperfectly understood by farmers. Thousands, who think they know all about it, will laugh at this expression; but still it is the result of long continued observation. It has ever been a leading object of attention by our agricultural societies, and shared a full proportion of the

premiums awarded. We should not be surprised to learn that \$20,000 have been awarded in this Commonwealth alone, within the last thirty years, for experiments in ploughing. Certain are we that from fifty to eighty dollars, annually, have been paid by the Essex Society; and if our recollection is right, something like this sum has been paid by each of the other societies.

This being so, it is fair to inquire, what benefits have accrued from these appropriations? It is true, that very great improvements have been made in the structure of the plough. The most indifferent farmer would be ashamed to be found using ploughs, such as were used by his fathers, in the last century. This improvement has resulted, in a good measure, from the competition and diffusion of information consequent upon ploughing matches. The natural result was, to introduce to approbation those ploughs that did the work in the best manner.

It is impossible, in the brief remarks in our power to submit, to notice all those points that demand consideration. We can only mention a few of the most prominent.

1. As to the team proper to be used. In the eastern part of the Commonwealth, as far as our observation has extended, oxen are preferred to horses. Though we have seen very fine ploughing performed by a well trained pair of horses, when the farmer is content with a depth of about six inches, the work can be expeditiously done with such a team, perhaps more so than with any other. But when he would have the earth stirred ten or twelve inches deep, either by the use of a subsoil plough or otherwise, more team will be required, at least two pair of cattle. We have seen land quite well ploughed by the use of one pair of cattle and a horse. Such a team, trained to operate without a driver, we consider the most economical in the power of the farmer to use. Few farmers can get along without a horse, and, as a general remark, no one in New England, who makes farming his business, should presume to carry on the farm without owning a pair of oxen. Unite their power, and his field will be ploughed to best advantage.

2. The practice has been increasing of late years, of turning

the furrow slice as wide as possible,—say from 14 to 18 inches,—and ploughs have been adapted to this end. That plough which would cut the widest furrow and lay it flattest, has been deemed the best. In this way, an acre may be turned in the least time, but, in our opinion, not in the best manner. We prefer to have the furrow slice no wider than is necessary for the complete turning of the sod. What is gained in time is lost in the pulverization. That furrow slice is best, both in width and position, that most facilitates this process. In this respect, we admire the operation of some of the English and Scotch ploughs, and we doubt whether yankee ingenuity has gone ahead in this particular.

In some counties of this Commonwealth we have noticed that their premiums were restricted to teams of one pair of cattle, without a driver; as if it were settled that such teams are adequate to all ploughing purposes. In Worcester especially, we understand it to be “the settled conviction of the trustees, that with one of the improved ploughs, and a single yoke of well matched and well trained oxen of common size, most of the ploughing on a New England farm may be well executed;” that is, by “well executed,” as here used, to better advantage, all things considered, than in any other manner. If this be the idea intended to be conveyed, we respectfully say it does not accord with our observation. We should be willing to join the issue on this question, and try it before a jury of twelve practical farmers, drawn from any twelve towns, even of Worcester county, with or without the arguments of counsel.

If one pair of cattle are adequate to all ploughing purposes, it should be known. But that it is not generally believed to be true, is established, we think, by the fact that our farmers do not generally use such a team in the ordinary performance of the work on their farms. They would not be likely to use any more power than they believed to be advantageous. Without doubt, very good work can be done on common field land with such a team; but we think better work can be done with a team of more power, and we should prefer increasing the strength of the team and deepening the movements of the

plough. We have never yet witnessed a team of this description continue to labor, day after day, ploughing the furrow so deep as it ought to be, without encountering too much fatigue.

We have yet to learn of any serious disadvantages accruing from deep ploughing, but are fully persuaded of many advantages. If we do not mistake, the public mind is fast inclining to deep ploughing. Scarcely an agricultural paper is issued, that does not contain an account of some extraordinary crop, almost always preceded by deep ploughing. So often have we witnessed its benefits in the growth of grass, corn, grain, and vegetables, that we should be false to our duty, if, in speaking of ploughing, we did not in this manner urge upon the farmer the importance of deepening his soil. We are not able to name the crop that is not so benefited. Even those vegetables that grow apparently upon the surface, we know are much benefited by stirring the earth occasionally to the depth of ten or twelve inches. Of this we can bear testimony from much observation.

Of late, we have greatly admired the operation of the Michigan subsoil plough, and we believe it is destined to have a highly favorable influence upon our culture. By laying the tough-rooted sod underneath, especially when fully cut and fairly turned flat, as it should be, without doubling over, it is left to pulverize as the roots of the grass decay, and the ammonia thus disengaged comes forward, just at the right time, to invigorate the tender fibres of the growing vegetables. The second strata of the soil, thrown uppermost free of roots, is readily broken and commingled with the compost or other dressing that may be applied. We have heard it said, by men of much practical experience, that by the aid of this plough, in one season, the earth can be as well pulverized and prepared to be lain down to grass, as is ordinarily done by the common plough in two. This, in those sections of the country where it is a primary object with the farmer to keep his land in the best condition for the production of grass, is a decided improvement. Some of the ploughs of this description have not cut the upper furrow slice so fully and turned it so flatly, as it

should be done. This is a defect in their structure that can readily be remedied. It will not often produce any practical inconvenience, where the furrow slice is limited to a width of about ten inches, which is as wide as we prefer to have it turned. We have been thus particular in speaking of this form of the plough, because it has been among us but a short time, and because we would not say anything more in its favor than we are fully persuaded it will bear.

With many cultivators, the side-hill plough has of late been brought into general use, even on level land. It has the advantage of leaving the field in a more finished condition, by avoiding those hollows that are consequent upon the turning of the last furrow of the land ploughed, and by producing a uniformity of appearance at the end. These are slight considerations, but still of sufficient importance to be deemed material, by those who would have work done in the best manner.

Every section of the country has its favorite form of the plough, adopted, often, as much from local or personal considerations, as from any peculiar merits in the structure. For a time, after the introduction of Wood's cast-iron plough, New York took the lead in this class of agricultural implements. But of late, since the ploughs made by Ruggles & Co., Prouty & Co., and Howard and Martin, have been so generally spread abroad, Massachusetts has a ploughing fame, world renowned.

It has seemed to us that a primary object with this board should be, to ascertain what has been learned for certainty in relation to ploughing, and to mark that; and to inquire on what points information is most needed, and the best manner of obtaining it. For this purpose, to point out a mode of offering premiums, with more distinctness and precision, and to require of committees corresponding reports. If uniformity in the offer of premiums, and in the reports of societies, could be introduced, this would afford a ready mode of comparison. A series of experiments for a few years, probably conducted in this manner, would go far towards settling all those points which are deemed most material. We are not unmindful that different soils and different crops, require operations as different as are their qualities. Instance the rocky lands in Worcester, and

the sandy lands of Plymouth, which are to be moved by different machinery. But still, there are many points of common utility, in both these regions.

Much has been said of late of the advantages to accrue from subsoil ploughing. There are few, however, who can speak with confidence from their own experience on this point. The late Mr. Phinney, than whom Massachusetts has had few farmers more observing, was very sanguine as to the benefits to accrue from the use of the subsoil plough. Such, too, is the lesson to be learned from English books on agriculture, in which instruction of great utility is to be found. Without presuming to speak of it with entire confidence arising from our own experience, we think it worthy of the continued attention of the board, and would commend it to the notice of all our societies, until its advantages or disadvantages are more fully tested by actual experiment.

At what season of the year, can grass land be turned over to best advantage? Shall it be done in the spring or in the autumn? A simple inquiry, and one that must present itself to the mind of every one, that has work of the kind to do; but still an inquiry, on which very few are able to give a satisfactory reason for the faith that is in them.

We have ventured these brief suggestions, as specimens of what may be said on the subject of ploughing. We have forbore to expand our remarks, through fear of being tedious. If a more uniform system of offering premiums shall be deemed by the board desirable, we will endeavor to prepare it.

J. W. PROCTOR, *Chairman.*

MILCH COWS AND DAIRY PRODUCTS.

In the different agricultural societies in this Commonwealth, there exists a great diversity in the modes of testing the merits of milch cows, and of awarding the premiums for butter and cheese. In some of the societies, the premiums offered for these three distinct objects, are made to point to a common result, viz., the ascertaining of the merits of the cow, or herd

of cows, kept by the farmer. The yield of the animal, or animals, in milk, in butter and in cheese, is required, for a given time, as a condition and ground of awarding their premiums, evidently with a view of effecting improvement in the milking properties of the cow, and raising the average standard.

In other societies, this object seems to be wholly, or in part, overlooked. Premiums are offered for the best milch cows, but no rules are prescribed, nor statements required to determine their yield in milk, and rarer still the amount of butter made therefrom. The decision as to the comparative excellence of the cows presented at the shows, seems to be left to the committee's own judgment, formed simply from an inspection of the animals, and such information as may be gained on the spot, from their owners. It is all left to the eye and the ear of the committees; the standard varies with every new committee, and as their reports seldom give the grounds of their awards, the public derive but little or no valuable information. Premiums, too, are offered for the best butter and cheese, of a certain number of pounds in the sample exhibited,—and in some instances, is also required the process of the manufacture of the article—but no certificates are required of the amount manufactured for any specified time. The *quality* of the butter or cheese, is here the only ground, or the principal one, on which the decision is made; to the skill of the dairy-maid is in effect awarded the premium.

There can be no question, as it seems to the committee, that with regard to milch cows, their yield in milk at least, should be required, and for such a length of time, and under such circumstances of feed and treatment, as to test, fully and fairly, their character as milch cows. But the question arises,—and it is an important one,—shall premiums continue to be offered, as heretofore, for single cows, or for a number of cows sufficient to constitute a dairy, a part or all of which shall have been raised by the competitor? Besides our own practice, we find that the Royal Agricultural Society of England, the Highland and Agricultural Society of Scotland, the New York State Agricultural Society, and other of the leading societies in this country, offer their premiums for the best single cows. The Worcester Society, in this State, has recently adopted the plan

of offering premiums for the best dairy of cows; and all who have read the reports on this subject, drawn with so much sound judgment, by the lamented Denny, can there see the reasons for adopting it. The offer of premiums by this society as yet requires that only a certain number of the herd should have been raised by the competitor. It is stated to us by its secretary, William S. Lincoln, that "in a somewhat continued correspondence with Mr. Denny, upon this subject, the expediency of offering a proportionably large premium for the best dairy of cows, *all* of which the competitor should have raised, was discussed, and had he been spared to the society, such a proposal would have been offered for its consideration."

Mr. Lincoln adds, that "he thinks himself more highly of such a proposal than of any other which could be offered, viewing it merely with reference to the effect it would have upon the improvement of our stock." The advantages of the plan proposed, are, he further observes, "that you compare the actual yield of *herds* of cows for the season, instead of single ones for a limited period; that you get facts enabling you to determine the relative profit of cheese or butter making, or selling of milk, and that the farmer in towns at a long distance from the place of the cattle show, with his forty cows, can compete for the premiums with the farmer within a mile of the show, with the only difference that he must drive one cow the long distance, instead of a mile, to be examined." From this it would appear, that one cow at least, would be presented at the show, to add interest to it, and as a specimen of the herd, whose actual produce in butter, cheese, or milk, is to be certified to the committee. To this mode of proceeding, as a substitute for the offering of premiums for single cows, there seem to us to be serious objections. So far, however, as it may tend to encourage the breeding or selection of a large number of good dairy cows, we hope it may have a fair trial; though these advantages, as it appears to us, may be more easily attained, without driving any of the herd to the show, as we will endeavor to make appear in a subsequent part of this report, when treating of the products of the dairy.

We can see objections to offering premiums for single cows, more easily than we can perceive how to obviate them. It is

said that our premiums are thus bestowed on creatures of accident or feeding. Still, extraordinary cows are rare among us, and yet it is desirable that they be seen at our cattle shows, and that their good points and marks of distinction may be witnessed by all who are interested in these animals. And as the owner of a good cow is apt to believe her the best that can be produced, a large number of such cows is generally found on the show ground, thus adding to its interest, and even by the display exciting a laudable emulation. That by this course encouragement is offered for the breeding of improved stock—for the improvement which would follow from careful selection and raising of the best calves, whether from native or foreign breeds, we will not undertake to determine. To some extent this may be the effect, but we have serious doubts if it tend directly to produce this result. Where the breeding of animals is the business of the farmer, he will be stimulated to breed only the best, by the high prices obtained for them. Let the demand for good cows be general, let there be quick sales and large prices, and the self-interest of the breeder is excited to endeavor to breed and raise none but the best. Whatever, therefore, goes to enhance the price and increase the demand for good cows, tends strongly, as we conceive, to stimulate the breeding of them. The exhibition of such cows, in competition with one another, at a cattle show, adds largely to their value, both in the mind of the owner and in that of the public;—and this much, at least, can be safely said in favor of offering premiums for single cows.

But that the average standard of the cows in Massachusetts, is altogether too low, both for her interest and reputation, and that greater and more systematic efforts should be made to raise it, your committee cannot entertain a doubt. Some intelligent farmers have expressed the opinion, that by proper care in the selection of cows, the average quantity of milk might be increased, equal to two quarts per day, for nine months in each year; and that by a like regard to the quality, the value might be enhanced nearly as much more;—say, that by this attention to selection, an improvement may be made equal to an increase of two quarts per day, for 274 days in each year. And this

must be considered a low estimate, if some of the farmers in Berkshire have, as the board have recently been informed, raised the annual average of the cheese made by them, from 200 pounds to 500 pounds per cow, by careful regard to the selection and the care of their stock. Apply this to the county of Worcester, in which there are, as appears from the returns of the several towns, as made to the last valuation committee, 35,591 cows of three years old and upwards, and at three cents per quart, (it sells for four and five cents,) and we have the amount of \$585,116 04. But to avoid any imputation of extravagance in this estimate, reduce the two quarts to one quart, and we have then the large sum of \$292,558 02. No deduction has been made from the number of cows above-mentioned, for barren three-years-old heifers, or for older cows which were dry to be fatted, as it is believed there was a much greater number of two-years-old heifers in milk, than would make good any deficiency in the milch cows.

A great proportion of our cows are said to be of the native breed, that is, of a mixed breed. All are called native, of which the proportion of blood of recent importation, is not known. It is very much to be regretted, that by judicious breeding, distinctive breeds have not been formed, which should be known by their excellence. In this case, the offering of premiums for the best single cows, would afford more encouragement to the breeding from such cows, as they would be more likely, than our cows now are, to transmit their good qualities. As yet, however, but little attention has been paid to the improvement of our stock, by the selection of choice animals, both male and female, and raising a stock from them. With too many of our farmers, the butcher has been allowed to select the best calves for slaughter, and the refuse has been raised. With these, the character of the bull is of little consideration, and an ordinary animal is often used, because his services are to be had at a reduced price. If, as is believed by many, the bull transmits to his female progeny his own characteristics, it is of the highest importance that no bull should be raised, except from a milking breed. If the selection here recommended, could be had, and the calves from those parents

were not allowed to be killed, except from some defect in their appearance, we might, in a few years, expect that the character of our milch stock would be greatly improved.

Among our, so called, native cows are many very excellent milkers, and we doubt not that by a proper selection and judicious breeding, a valuable milking breed can be obtained. The good properties of the cows, at the commencement, being accidental, it would be some years before the breed could be so far improved, that much reliance could be had upon the future character of the calves. What has been done by that judicious breeder, Col. Samuel Jaques, in getting up the Cream Pot breed, can be done by others for the same object. The appearance of many of our *native* cattle, indicates, with much certainty, from what foreign blood they are descended. Many of them show strong marks of the Durham or Short Horn blood; others of the Ayrshire, of the Hereford, and of the Devon family. Of these different breeds, as well as the Alderney, of which the Massachusetts Society for the promotion of agriculture have lately made an importation with the desire to improve the milking character of the neat stock of the Commonwealth, we will not offer any opinion, as their peculiar traits are well understood. We would, however, recommend to every farmer to gain such a knowledge of the different breeds, as to be able at a glance to distinguish them; and more than this, to observe carefully the marks of a good cow—whatever these marks may be—so as to make a good selection when he is obliged, in purchasing, to depend upon his own judgment.

In offering premiums for single milch cows, if all our societies would require a return of their yield in milk and butter, for the first ten days in June, and the first ten days in September, with the age and breed of the animals, the time of dropping their last calf, and their feed during the season, a rule sufficiently general would be established, to enable us to institute something like an approximate comparison between the best cows in the Commonwealth. At present, however, we are not sufficiently advised to propose, with confidence, any uniform conditions in such premiums, for the adoption of our societies.

In reference to butter and cheese, where premiums are specially offered for these products, it appears to your committee that while the *quality* of the specimens presented for competition, should be an element, and an important element, in making up the award; and while the furnishing of a statement of the process of manufacture, should be required as a condition of the award; there should also be given in the statement, the *quantity* of these articles made by the competitors during the season, or some specified time. We would go even further than this, if it should be found practicable. We would require as a condition of receiving a premium, that a certain standard in quantity, during a given time, should have been reached. In awarding premiums for grain crops, many of our societies prescribe the number of bushels per acre that must be raised, to entitle any one to be a competitor. This would seem to be a wise rule. Why not apply a similar rule in respect to competitors for the premiums for butter and cheese? Something of this kind has already been attempted. In the premium list of the Essex Society for 1823, may be found the following offer:

“For the greatest quantity of good butter, in proportion to the number of cows producing it, (not fewer than four,) made on any farm, from the 20th of May to the 20th of November, 26 weeks, and the quantity of butter averaging not less than seven pounds per week for each cow, \$20; for the second greatest, \$15; for the third greatest, \$10. The kinds of food and the management of the butter, to be detailed.” Then follow these remarks, written undoubtedly by Timothy Pickering, then president of the society:

“The object of agricultural institutions is improvement; and in Essex none seems to be more wanted than in milch cows. If the society were to continue their premiums during any length of time, *merely* for the greatest quantity of butter, they would not enforce any improvement in the quality of those animals. Seven pounds of butter a week, for each cow, is less than half of what the Oakes cow, of Danvers, produced in the same time. The seven pounds a week, therefore, are very attainable by every farmer who will improve his breed of cows, and feed them to the full with juicy and highly nourishing

food. The committee trust they do not entertain a groundless hope that the premiums here offered will have claimants; and that in some future years, the trustees will be justified in confining these premiums to cows yielding 10, 12, and 14 lbs. of butter a week, for 26 weeks in the year."

How mortifying the reflection, that after the lapse of nearly thirty years, since this hope was expressed, it has failed to be realized; and for the reason, that the milch cows—not in Essex only, but throughout the State—have not been improved, agreeably with such sanguine expectations. We may well stop to inquire, whether, by the agricultural community, sufficient attention has been paid to the quality, as well as the quantity of milk given by the cows? It is feared that too many of our farmers—and dairy farmers, too—have no other test of a good cow, than the quantity of milk, as it measures in the pail, without an inquiry whether that milk is of much more value than the same quantity of water, which he could pump from his well. This is not a matter of mere conjecture. We are frequently informed of the disappointment of the owner in the estimate he had formed of the value of one of his favorite cows; and it is believed that a careful examination would discover the comparative worthlessness for butter of many cows, now held in high estimation.

A few years since, one of the committee had a farm, which was leased on shares, appropriated to dairy purposes, on which 25 cows were kept, which were owned in common by himself and the tenant. Accidental circumstances induced a comparison between a cow which was considered the most valuable in the herd, because she yielded a large supply of milk, and a cow which had been purchased at a small price. Repeated trials were had by the lactometer, and the result was that the milk of the cow which had been held in high estimation, afforded cream of only 4-10 of an inch in thickness; and the same quantity of the milk of the low-priced cow gave cream of the thickness of 1 and 4-10 of an inch, and of a much yellower color than that of the other. The cheap cow was in reality the most valuable animal. The cow which had been so highly esteemed, had been in the dairy two years or more,

without a suspicion, until this trial, that she had not paid her keeping.

Dr. Anderson, the distinguished Scotch writer on the dairy, mentions an instance of one cow, from whose milk no butter could be made. She was purchased of a farmer who kept a large dairy, by a person who had no other cow, and thus the discovery was made. Thrown into the general mass, her milk had been useless, and her keeping a dead loss to the farmer. Hence the Doctor judiciously recommends the setting, in a separate pan, the milk of every cow, to ascertain its quality, that such as give meagre milk may be fattened and sent to the slaughter-house. And we would urge it upon every farmer to test all his cows, both as regards the quality and quantity of milk they severally yield, confident as we are that by this simple process, and disposing of such cows as he thus finds cannot be profitably kept, the profits of his dairy will be increased, and the character of his cows be transmitted with more certainty to their offspring.

By adopting a mode of offering premiums for butter and for cheese, similar to the one formerly made by the Essex Society, there would be the strongest inducement,—so far as agricultural societies are concerned,—held out to the farmer to keep only the best of milch stock. A condition might also be inserted, if it should be deemed advisable, that the cows, whose butter was entered for premium, should be of the competitor's own raising; but, as in some of our counties the breeding of neat stock is practised only to a limited extent, a uniform condition of this kind, for all the societies, would not seem to be advisable. Let the quantity of butter and of cheese for the dairying part of the year, be required to be stated, as well as the process of making, as conditions precedent to the award, and let the standard be so high as to encourage only the keeping of the best herds of cows, and we believe that our societies will be aiding, most effectively, to produce an improvement in the dairy stock of the State.

In conclusion, the committee, being instructed to ascertain and report whether any and what measures for milk, are prescribed by statute, would say, that by the act of the Legisla-

ture of 1847, the wine gallon, wine quart, wine pint, and wine half-pint, are enumerated as the standard liquid measures to be used in this Commonwealth, and that any person who shall presume to sell by any other liquid measures than these, and which shall be sealed, shall forfeit and pay a sum not exceeding twenty dollars for every such offence, one half to the use of the town where the offence is committed, and one half to the complainant.

The statutes of the Commonwealth recognizing no liquid measures but wine measures, it is evident that no others can be legally used in the sale of milk. And we recommend, therefore, that sealed wine measures be invariably required to be used by the competitors for premiums, who make returns of the produce of their cows in milk. In this way will our agricultural societies exert an important influence in introducing uniformity in the admeasurement of milk, and in aiding to carry into effect the laws of the Commonwealth.

For the Committee,

ALLEN W. DODGE.

NEAT CATTLE.

Your committee have been instructed to report upon all kinds of live stock, but as it is apparent to them, that they cannot even approach towards the performance of their duty, where the field is so broad, they have judged it best to confine their remarks to a single race, that of neat cattle. When we consider the various breeds and vast number and value of cattle in our country, it is apparent that much more might be said upon this subject alone, than can be embraced in this report.

By the census of 1840, the number of cattle in the country, was about 15 millions. At this period, their number must be 18 to 20 millions. Let us consider the vast augmentation of agricultural wealth which might be produced by an average improvement of one dollar in each animal,—and this and even much more may, in the judgment of your committee, be done,—a small portion only of the wealth thus gained, would suffice to extend that agricultural education to the sons of the farmer, which they need and require, and thus exhibit with enlight-

ened farmers, improved stock, improvements in agriculture, and, as its natural consequence, a great augmentation of the value of our farms.

The question obviously suggested is, how shall this improvement in cattle be attained? We answer, by selecting judiciously, and with great care, your breeding animals. It will not suffice that you have a good cow for this purpose, the bull must also possess the requisite qualities; for it is to him, in the opinion of many of the most enlightened breeders in England, that we are to look, more than to the dam, for an improvement in the progeny. In breeding and rearing cattle, three great objects are sought to be attained—cows for their milk, oxen for the yoke, and when they cease to be valuable for these purposes, to be devoted to the shambles.

The remark is common, “why not select the best of our native cattle to effect these purposes?” We reply, that the sound principle that “like begets like,” cannot be relied upon in their produce. They greatly vary in their symmetry and other characteristics; their blood has not become inherent in them, by a long course of breeding in a direct line from select animals, and hence little reliance can be placed upon the progeny thus bred. When we have races of cattle of greatly improved breeds, already within the reach of all, and some of them bred in a direct line for more than seventy years, why is it needful to discuss this subject? Is there an intelligent breeder of cattle who will affirm that a comparison can be instituted, except to their disadvantage, between the native cattle of the last century, (and there is, unfortunately, too much of their blood still remaining,) and the beautiful and highly bred Short-horns and Devons of the present day?

The topics which we here discuss, and our mode of treating them, are not new; we claim for them not originality, yet they cannot too often, nor with too much force, be impressed upon the breeders of cattle. In a long course of breeding, in a direct line, no intelligent breeder will resist the conclusion, whether it be in cattle, horses, sheep, or swine, that the characteristics of the sires and dams will be imparted to their progeny. Breeding from close affinities should be avoided, for the result

of it must be impaired constitutions. *All* of the cows of any given breed cannot be expected to excel as milkers, for their ancestry were reared to too much extent in England, as they now are in the Western States, with more reference to their flesh for the shambles, than for their milking properties. Hence it is obvious, from the principles here laid down, that to produce a superior milking herd, we must select for breeders, such animals as have descended from tribes which have this valuable characteristic rendered inherent in them by breeding. When cows are deficient in any one point, (and few are entirely perfect,) care should be taken to breed them to bulls which are full in the points thus defective in the female, so that in the produce the defect may be corrected. The great average increased weight of bullocks, slaughtered in the principal markets of England and this country, since the beginning of the present century, is doubtless to be mainly attributed to the introduction of the short-horn blood. Yet this is not the only advantage gained by this improvement, for in the Smithfield, as well as our own markets, up to the close of the past century, animals were judged of almost alone by their bulk; whilst since that period, science applied to breeding has so changed the structure of animals, that the offal and less valuable parts of the beast are greatly reduced, and in the same proportion the most valuable parts of the carcass are augmented.

The late Thomas Bates, of Kirkleavington, England, one of the most eminent breeders of that country, said, in a publication a few years since, "Nearly fifty years ago, I adopted the plan of weighing my cattle and their food, so as to ascertain the improvement in proportion to the food consumed, and from a minute and close attention to this subject, I obtained that knowledge of cattle which enabled me to judge of their real merits by their external character, and which I have never known to fail, in my experience as a breeder, for about forty years. From that knowledge, thus acquired, I selected the Dutchess tribe of short-horns, as superior to all other cattle, not only as small consumers of food, but as great growers, and quick grazers, with the first quality of beef, and also giving a great quantity of very rich milk."

The Scioto (Ohio) Gazette says, that "from 25 to 30,000 head of their best beef cattle are annually driven to the eastern markets, from the Scioto valley, south of the national road; that the short-horn stock has become widely disseminated throughout this state in all the grazing and feeding regions. That the greatest gain is to be found in the increased average weight of the fat cattle driven from this neighborhood, which is not less than 100 pounds per head, above that which prevailed twenty years ago." Now assume the average price for such beef in the markets to which these cattle were sent, to have been \$6 per 100 pounds, the value thus gained is from \$150 to \$180,000, to this small portion of the state of Ohio alone.

The prevailing breed of cows employed in and near London, to supply that great metropolis with milk, is the short-horn. Yet it is not alone that they yield more milk than other races, that preference is given to them, but because the carcass is more valuable, after they have ceased to be profitable as milkers. It is simply because they yield more value in milk and flesh, in proportion to the food consumed, than other breeds, that they are adopted. This race of cows must have been used for this purpose in London, to at least some extent, for half a century; and it is difficult to believe that great numbers of individuals, after so long a period, will arrive at a conclusion which conflicts with their own interests.

Much of the soil of New England being thin and sterile, we would not advise that the short-horns be adopted in such localities, nor indeed in any, except they be well cared for; for if animals must have short feed, a small race is more desirable to be so used than a large one. Hence, for animals so to be kept, we do not hesitate to recommend the Devons. We believe them, as milkers, to equal most other races, whilst their uniformity of color, size, and sprightliness, render them for the yoke, equal to any other race. Yet, on the other hand, where pasturage is luxuriant, and in all cases where animals can be well kept, in summer as well as winter, we cannot hesitate to advise that the race of short-horns be adopted.

PAUL LATHROP, *Chairman.*

FARMS AND IMPROVEMENT OF LANDS.

The committee, instead of indulging in general remarks, to which the subject strongly invites, confine themselves to a few observations on two or three particulars respecting the condition of our farms.

In looking at the farms in Massachusetts, that which would most strike a stranger is, the great irregularity not only in their exterior forms, but in their interior subdivisions. Look at a map of almost any of our older farms, and you will be struck with this fact. Every variety of angle that delighted the genius of Euclid, could be matched by the subdividing lines of our farms. Could we imagine some intelligent being, unacquainted with the inventive genius of a Yankee farmer, looking, for the first time, at the map of a New England farm, he might well suppose that it had been drawn for the purpose of solving problems in geometry. Our fields present to the eye all the different forms of obtuse and acute angles, and specimens even of the serpentine and the curvilinear, a mighty maze, and all without a plan!

The fields of our farms are of all sizes, as well as of all shapes, from the small enclosure of a quarter of an acre, to the rambling pasture of twenty acres.

The unseemly and inconvenient shape of our farms, is owing, in great part, to the manner in which our lands were originally laid out in the settlement of the country. Companies were formed who, with the consent of government, purchased townships, or other large tracts of unoccupied land, and made divisions, from time to time, of small quantities of the common lands among the proprietors, leaving each one to select and locate his own lot. Of course, an individual having a right to lay out in the undivided lands a certain quantity at a time, say ten acres more or less, would cause it to be surveyed in such shape as to include within its boundaries the greatest value, without regard to any general arrangement, or the form which his tract would present on the map. We feel the effects of this unfortunate system, (or, with more truth, this total want of system) in the division of the public lands, at the settlement of the country. Many, if not the most of these lots so laid out,

have descended to us unchanged in their original forms, and will continue to embarrass for generations to come.

These ill-shaped subdivisions are owing, in some degree, to the natural diversity in the surface of the ground, and differences in the quality of the soil. Waste lands, (so called) were left out in common; the poorer soils were kept for pastures, while the richer portions, in the shape and extent in which they happened to exist, were inclosed for cultivation. Much improvement in this respect, may be made in the interior divisions of our farms, but their outlines will probably forever remain more or less irregular. Compare our farms with those at the west. How different is our plan of a farm from that perfect and uniform system, under which the public lands are surveyed and divided into squares and parallelograms. These divisions, we understand, are generally preserved among the farmers at the west.

The increased unnecessary cost of fencing in this State, on this account, is an item in the aggregate of vast amount, and is well worthy of our consideration. By having our farms properly and skilfully laid out, we could save seventy-five rods in every hundred of fencing. Any one will be convinced of this, who will barely cast his eye upon a map of one of our farms, with all its irregular and unnecessary subdivisions. The additional labor of cultivating a farm, thus irregularly laid out, is another and an important item in the expense of New England farming. The difference between cultivating a field of a large size in the form of a square or parallelogram, or the same quantity in the form of a triangle, or divided into four or five lots of irregular shape, may be plainly discovered by observing the difference in the temper of the driver, the team, and the ploughman, while working in the latter and in the former. If it takes a whole day to plough a piece containing one acre, twenty rods by eight rods, lengthwise, it will take more than one day to plough two half acres the same way, ten by eight rods. If a team, in ploughing the former piece, turns about 132 times, in ploughing the latter it must turn about twice that number, 264 times. We have been informed by farm laborers, who have worked in the new states, that they have ploughed

furrows a mile in length in one field. In such a case, but little time is lost in stopping the team and turning about at the end of the field.

These facts may seem to some trifling, but they are of practical importance. We need, therefore, another branch of science, which might be called the "geometry of farming." The mode of laying out our farms into lots of the form requiring the least length of fence and the most convenient and economical for cultivation, is deserving of attention, and seems to have been almost entirely overlooked in New England. A little examination will satisfy any one, that the manner in which our farms are laid out and subdivided, is inconvenient, expensive, and the cause of much loss of time and labor in their cultivation.

There is one method of improving our farms, and rendering them more valuable and profitable, which should receive more attention at this age of the country, that of the appropriation of waste lands to the growth of wood and timber. This remark is intended to apply particularly to the southern, eastern, and central portions of the State. In these parts of the State, almost every farmer has large quantities of waste, or unimproved lands, unfit for pasturage or cultivation, from which he derives but little, if any profit. Such lands may generally be devoted to the growth of wood and timber. It is a good investment. The growth of a wood lot, in these parts of the State, will, as a general rule, yield the farmer more than six per cent. interest, and that too without subjecting him to a charge of usury. There are many fields, which have been almost entirely exhausted of all fertility by constant cropping without manuring, and have been abandoned for years to hopeless sterility, trodden only by the rambling feet of the cattle that fed upon their scanty herbage. These fields, if cattle are prevented from feeding them, will usually, though gradually, become covered with a growth of some species of wood, to which the condition of the soil is adapted. In the southern part of Massachusetts, the first growth on such lands will consist principally of white or black pine and the white birch. This process is now going on in a field of the above descrip-

tion, which your committee have carefully observed for several years past. Cleared lands may be converted into woodlands, by the "let alone" process, or what the politicians call a "masterly inactivity;" in other words, by the unaided operations of nature; or it may be done by planting or sowing the seed, or by transplanting.

The second growth will consist of some other species of our native forest trees, and is an example of that succession of growths, or in other words, of that rotation of crops established by the laws of nature. This is the method which nature adopts, to restore fertility to exhausted lands, and is an instance of that wonderful economy of the Creator, which keeps up a continual succession of vegetation on the surface of the earth. The growth and decay of one species, but affords the means for another and different species. Hence, we have but to discover and apply the laws of nature to the cultivation of the earth by the hands of man. This is the business of the science of agriculture. This shows also the restorative powers of nature, evincing her ceaseless efforts to renovate the exhausted soil, and to preserve it in a condition capable of production.

Contrary to the practice of man, nature is constantly struggling to renovate the soil. Decay is not stamped on the soil, as it is on the works of human hands, but so far as our observation extends, eternal activity and reproduction are its characteristics. When left entirely to itself, we see the efforts of nature to restore a soil exhausted and impoverished by the avarice and imprudence of man to its original and natural fertility. By this admirable provision of Providence, the efforts of nature are continually aiding man in preserving or restoring the productiveness of the earth. Where fertility is not totally abstracted from the soil, we see a constant tendency to a growth of some form of vegetation. Throw up earth from a depth of thirty feet beneath the surface, and in a brief season it will be clothed with vegetation.

The woodlands in the southern and eastern counties of the State, are insufficient to supply the present population with fuel. This species of land has been gradually diminishing till a recent period, when farmers became convinced they were

attempting to improve too much land. Timber of much size, as is well known, has become very scarce. In this part of the State, woodland is, on an average, of more value than cleared, or improved land; and by appropriating a larger quantity of our lands to the growth of wood, we should add to the value of our farms. We cannot only do this, but we can devote such parts of our farms as are too rocky, rough and uneven for the plough or the scythe, to this purpose, or those which have become poor and impoverished, and reserve the richest and best for cultivation.

The labor of this conversion is not great. Philosophers may dispute, as they long have done, about the natural state of man, but no intelligent observer can doubt that the growing of wood is the natural state of the earth. Should this whole continent be abandoned by civilized man, and left to the uncontrolled but solitary operations of nature, we should again see its soil return to its original fertility; the waste places would be covered with vegetation; the barren would become productive, and another Columbus, in some distant age, would behold its hills and vallies and plains, covered with a dense forest and its surface rich with the accumulations of ages; tenanted by the wild beast, and perhaps trodden here and there, as of old, by some other race of men, who had wandered from the abodes of civilized life and become lost in these boundless solitudes of the western world.

Thus we find the whole tendency of natural causes is, through the growth and decay of vegetation and perpetual reproduction, to renovate the earth, and to coöperate with man in adorning its surface with beauty and abundance. We have but to take hints from these suggestions of nature, to learn the course we should pursue in cultivating the soil.

The only other particular to which your committee would direct the attention of the board, is the fact, that our agricultural science is mostly of foreign origin, and the effect which that has in retarding the progress of our own agriculture. We need an agricultural science and art adapted to our own country. This country was settled, as we all know, principally by emigrant husbandmen from England. They brought with

them the agricultural implements used in their native land, and adopted here the modes of cultivation to which they had been bred. These implements and practices, with some modifications, have descended to us. We are, to a great extent, cultivating our lands on English models. Our agricultural works are mostly of English origin.

We ought to have an American system of agriculture. We are practising on principles and theories, originating in a country, in some respects widely different in climate, soil, products, and the social condition of its laboring population. England has a moist, humid climate; fog and rain are daily features of its scenery—it has been called the “fog-wrapped island of Great Britain.” We, on the contrary, are subject to severe and long-continued droughts. There, the watchful farmer is troubled with cloudy and dull weather, with but little clear, steady sunshine. Here, he is parched by scorching suns, oftener, than is supposed, destructive to our fruits and vegetation. There, he has to guard against an excess of moisture; here, he has to guard against the want of it. There, land is dear and labor cheap; here, labor is dear and land is cheap.

We need a system so modified as to be adapted to our situation. Practices in the cultivation of the earth are continued here, originating in physical causes, which do not exist here. The practice of hilling and ridging, so common in English husbandry, and so useful in that climate, are pertinaciously continued by New England farmers, as if it were applicable here, when, in fact, the reverse should prevail. It is an old and a sound maxim in the law, that when the reason on which a rule is founded, ceases, the rule itself should cease. So, in agriculture, when the reason, on which a practice was founded, ceases to exist, the practice itself should cease. Nearly all our ideas of farming, have been drawn from English authors. In order to a successful cultivation of our soil, and the permanent improvement of our farms, we must create an American system of agriculture. We must see with our own eyes, and decide with our own judgment.

We must adapt our system of culture to the nature of our soil, and the climate in which we live to the products we

raise, and the social condition of the laborer of the country. It is not true economy for us, in a comparatively new country, to indulge in the luxuries of English farming; to follow the example of some wealthy duke, in a country where capital is abundant, and labor superabundant. We would not be understood as attempting to depreciate English husbandry, for we have high respect for the science and skill of English agriculturists; but merely to show that it is not, in many respects, adapted to our country; and that, while studying the works of British writers, and attempting to reduce to practice here a foreign system of agriculture, we need the power of a wise and careful discrimination.

For the Committee,

JOHN DAGGETT.

CULTIVATION AND MEASUREMENT OF CROPS.

The committee, understanding that the duties of the committee were not, as their designation would in part imply, to consider the best mode of cultivation of crops, but to provide uniform rules for the offering and awarding of premiums in relation to crops, have attended to the duty assigned them as they understood it. From all the inquiry the committee have been able to make, they find that there is a great diversity in the practice of the several agricultural societies, as to the information to be afforded by a claimant to entitle himself to a premium, whether for a grain or root crop; and in most cases allowing the applicant to ascertain the quantity in his own manner, having no evidence of his correctness save his own declaration.

The committee think that the applicants should state the general character of the land in the spring of the previous year, its condition at that time, with a detailed statement of the manner of cultivation, quantity and quality of manure, and the products of the previous year. The condition of the land at the commencement of the present year; and a detailed statement of the quantity and quality of manure used the present year, when and how applied; the mode of cultivation preparatory to sowing or planting; the quantity and quality of seed used; time and manner of sowing, weeding, cultivating and

harvesting the crop; the amount of produce, ascertained by actual measurement or weight, after the whole is harvested; the expense of the seed, manure, labor and cultivation; and the value of the product. That the land be measured and staked out by a practical surveyor, by chain and compass, to be in one piece, either in a square or oblong square form, if the field will admit of it; and in all cases where the crop is grown in rows or in hills, the measure shall be taken from the centre between the rows to the centre between rows; the measure to be as near the quantity wanted as can conveniently be had; the measure to be carefully taken by the surveyor, and to be accurately described in his certificate, which should be sworn to. In addition to the affidavit and certificate of the surveyor as to the land, each applicant should file his own certificate (if the harvesting has been done by himself in person,) under oath, of the amount of products grown on the land measured and staked by the surveyor; with the affidavit of a disinterested person who assisted in the harvesting, of the amount of the crop grown on the land. If the harvesting is done by others than the applicant, the affidavits of two persons who performed the harvesting, should be required.

In relation to the manner of ascertaining the quantity of the several crops grown, with such accuracy as will be satisfactory to the agricultural community, much difficulty exists. The society which has adopted apparently the most definite rule for determining the amount of the crops, is the Plymouth Society. They have provided that "the supervisor will visit the fields once or more, while the crops are growing; and at the time of harvest, he will select one square rod regarded as an average of the field, see it harvested and weighed, by which the whole shall be estimated—85 lbs. of corn in the ear computed a bushel." This, as regards corn, might be considered as a near approximation to the truth, if corn of different fields was equally dry; but as that is known not to be the case, it appears to be desirable that the examination should proceed further. In consequence of the obligation to file the doings of the societies, in the office of the secretary of the Commonwealth, on or before the 10th day of January, the statements of the competitors for

premiums should be made, and in the hands of the appropriate committee, before the first day of December previous, to allow their transactions to be seasonably printed. At that time, corn is not in a merchantable condition. It is usually harvested the latter part of October, or during the first days of November, and at that season there will be a great difference between different fields, as to the dryness of the corn and the cob. Much has been occasioned by the location and the soil on which it was grown. Corn will ripen much earlier on a warm sandy soil, than on a heavy clayey loam, and therefore there will be much more shrinkage on corn from the one field, than on that from the other. It is suggested that the supervisor, or committee of examination, should take away some of the corn which they had weighed, (say, one bushel,) which should at the time be both accurately weighed and measured, from each field, subject it to artificial heat until properly dried, and correct their former estimate by the result.

The rule of the Plymouth Society, as applied to root crops, may not operate more satisfactorily than in relation to corn. It will be extremely difficult to select a square rod, which shall prove a fair average of the field, merely by inspection, particularly of carrots. The appearance of the tops does not indicate, with any correctness, whether the roots are long or short, and on this fact the amount of the product must greatly depend. It is believed that root crops can be better estimated by weight, than by measure.

The Legislature having determined that Indian corn, wheat, rye, buckwheat, barley, oats, and potatoes, shall be sold by weight, and having prescribed the number of pounds which shall be taken for a bushel, there seems to be a strong propriety for assuming the same principle in ascertaining the amount of those crops, and extending it to other crops for which there is no legal provision. The law says, "in order to ascertain the mean or true weight, each vender" [applicant] "shall weigh ten measures at least, in every hundred bushels."

A bushel of Indian Corn shall be deemed to be	-	56 lbs.
" " Rye " " "	-	56 "
" " Barley " " "	-	46 "

A bushel of Buckwheat shall be deemed to be	-	46 lbs.
“ “ Oats “ “ “	-	30 “
“ “ Wheat “ “ “	-	60 “
“ “ Potatoes “ “ “	-	60 “
“ “ Carrots “ “ “	-	55 “
“ “ Sugar beets “ “ “	-	60 “
“ “ Mangel wurtzel “ “ “	-	60 “
“ “ Ruta бага “ “ “	-	60 “
“ “ Parsnips “ “ “	-	45 “
“ “ Common or English turnips “	-	50 “
“ “ White beans shall be deemed “	-	60 “
“ “ Peas “ “ “	-	60 “
“ “ Onions “ “ “	-	50 “

The root crops to be free from dirt, without tops, and in a merchantable condition at the time of the measurement.

Cranberries do not seem, so far as the committee can learn, to have an established weight for a bushel. Meslins, not being uniformly composed of the same mixture of grains, must be measured by the bushel; the kinds of grain should be stated, as also the number of the bushels, and the weight per bushel, to aid the committee in forming an opinion of the value. As to broom corn, the amount of seed and the weight of brush per acre, should be stated, when prepared for market, and the method of preparing it.

In all cases where measure is required, it must be had in a sealed half-bushel, of the standard of Massachusetts.

It has been stated, that the several committees are usually required to discharge their duties with so much haste, particularly on the day of the society's show, that they have not opportunity to examine the certificates required by their society, to entitle the claimant to a premium, with sufficient care to see that all the requisitions of the society have been fully complied with. It is suggested, that each society should appoint a committee, whose duty it shall be to examine all certificates required by their rules, see that they are correctly made out, and that all the information wanted has been fully given, and if found satisfactory, certify their approval thereon to the appropriate committee, who shall not be at liberty to award a premium to any person whose certificate has been disapproved.

The form of the affidavits may be as follows:—

Affidavit of the Surveyor.

ss. 1852. being duly sworn,
says that he is a practical surveyor; that he surveyed with a
chain and compass, in the manner prescribed by the rules of
the society, the land upon which
raised a crop of the past season, and at the same
time put down stakes at the angles thereof, and the quantity of
the land so measured and staked out, is and no more.

Surveyor.

Sworn before me, this day of 1852.

Justice of the Peace.

Affidavit of the Applicant.

ss. 1852. being duly sworn,
says that he has raised a crop of the past season,
upon the land measured and staked out, by sur-
veyor, and that the quantity of was
bushels, measured and computed in the manner prescribed by
the Agricultural Society; and that he was as-
sisted in harvesting and ascertaining the quantity of said crop,
by ; and that the statement annexed, subscribed
by this deponent, as to the manner of cultivation, expenses,
&c., is in all respects true, to the best of his knowledge and
belief.

Sworn before me, this day of 1852.

Justice of the Peace.

Affidavit of the Assistant.

ss. 1852. being duly sworn,
says that he assisted in harvesting, getting out, and ascertain-
ing the amount of his crop of referred to in the fore-
going affidavits; and the quantity of was
bushels, as stated in the affidavit of the said

Sworn to before me, this day of 1852.

Justice of the Peace.

JOHN W. LINCOLN, *Chairman.*

AVERAGE COST OF GRAIN AND ROOT CROPS, IN HAMPDEN COUNTY.

HON. M. P. WILDER, *President of Mass. Board of Agriculture.*

Dear Sir:—Having forwarded to you a copy of the transactions of the Hampden Agricultural Society for the past year, I am induced to offer some further statistics connected therewith, and which would have been presented in connection with the other details, had the importance of them been as apparent then as they now appear to my mind. Permit me to inquire if some such statement is not of sufficient importance to be made a *requirement* from every society in the Commonwealth, drawing funds from the State treasury, in their future reports? It appears to me, this method would furnish a much more correct data of our agricultural products and of their *actual* value, than the present very indifferent reports furnish. The inquisitive mind would see at a glance the results, which, under the present system, are ascertained with much difficulty, and the information thus furnished to the commissioner of patents, for the national government, would be more reliable and furnish more satisfactory evidence of the real state of our agriculture, than could be obtained in any other manner. Other reasons will readily suggest themselves, without my enumerating them. I have made a full detail of our premium crops, so that if any mistake has occurred in my figures, it may be detected readily.

Expense of producing Wheat per bushel, in Hampden County.

Horace Smith,	236	bush.—entire cost, \$128 81	per bush.,	54 3-10 ct.	Average, 58 5-6 ct.
Justus Bagg,	223	“ “ “ 159 74	“	71 2-10 “	
Walter Cooley,	38	“ “ “ 23 50	“	62 “	
John Stiles,	37½	“ “ “ 17 00	“	45 5-10 “	
(Add interest on land, to his statement.)					
R. H. Barlow,	44	bush.—entire cost, \$24 00	“	54 6-10 “	Average, 58 5-6 ct.
Col. Silas Root,	91½	“ “ “ 60 50	“	66 “	
(Add interest on land, to his statement.)					

Corn, per bushel.

Horace Smith,	350	bush.—entire cost, \$203 50	“ 58 2-10 “	Av. 54 2-10
Walter Cooley,	82½	“ “ “ 40 75	“ 49 7-10 “	
Josiah Hooker,	225	“ “ “ 122 25	“ 54 3-10 “	

Rye.

J. Hooker,	39	bush.—entire cost,	\$25 55	per bush.,	65 1-2	ct.	} Av. 48 cts.
I. M. Merrick,	95	“ “ “	41 02	“	43 2-10	“	
F. Brewer,	23½	“ “ “	8 54	“	36 3-10	“	

Oats.

Horace Clark,	85½	bush.—entire cost,	\$13 00	“	15 3-10	“	} Av. 21½
J. H. Demond,	82	“ “ “	22 28	“	27 2-10	“	

Carrots.

J. Carlisle,	538	bush.—entire cost,	87 50	“	16 2-10	“	} Av. 13 2-10
S. Warner,	237	“ “ “	31 00	“	13	“	
M. Hitchcock,	240	“ “ “	26 75	“	10 4-10	“	

Turnips.

Hitchcock,	160	bush.—entire cost,	8 31	“	5 3 10	“	} Av. 4½ ct.
Hooker,	500	“ “ “	22 00	“	4 5-10	“	
Warner,	450	“ “ “	18 50	“	4 1-10	“	

If the facts here communicated should furnish any suggestions of interest, my purpose is fully accomplished. I will only add, I think our average on rye would not be sustained by our general products. My opinion would suggest forty or forty-two, as a more correct average.

Excuse the liberty I have assumed (as a stranger) in addressing these remarks to you, and believe me,

With much respect,

Your humble and ob't serv't,

FRANCIS BREWER,

Springfield.

AGRICULTURAL IMPLEMENTS.

In the progress of civilization, in the advancement of the sciences and the arts, and in all that has a tendency to elevate the condition of man, there have been certain distinctly marked periods when the people have given their thoughts to some one or two subjects, and made them prominent beyond others. Not that all study and reflect particularly upon these topics, but that the leading minds do, and through their researches the whole public mind is, in a greater or less degree, imbued with a desire for more knowledge in relation to them.

During the last half century, no subject has more engaged the attention of thinking, practical men, than the improvement of machinery. Under this general head, may be properly classed all the implements of farm husbandry. In our country, more perhaps than in all the world beside, has this spirit of improvement, this constant striving for something better, wrought out results useful to man. Our government and institutions are well calculated for the development of individual genius and enterprise; and to this individual thinking and acting, may be referred the glorious results which have been attained.

Genius is not pent up by arbitrary rules, edicts or censorship, to break out here and there like an impetuous torrent, but finds vent in all directions, and thus every department of industry is benefited. It is seen in works of art, where great natural obstacles are to be overcome. Combined with wealth, it spans rivers whose perpendicular sides and deep abyss, have mocked the daring and skill of former ages, or bids the mountain yield a passage through its rocky bosom. The old machinery, both of sea and land, stands back mute and motionless, in astonishment at the modern queer ways of grinding, reaping, threshing, pumping, pulling and wheeling, and all manner of locomotion.

Man's inventive genius never tires—the inventions of one only exciting the genius of another to supply a defect or add an improvement. It is this stimulus which has brought the steam-engine to its present wonderful state of perfection, and produced similar results with other machinery—with our reapers, ploughs, harrows, and most of the implements of the farm.

The quality of any work, in whatever art, depends mainly on the tools with which it is wrought. The most skilful shoe-maker, with a superior piece of leather, cannot make a good boot, unless he have a good awl, good thread, and a good knife; and the ship builder not only needs the right kind of timber, but the right kind of tools. It is so in every art. In farming, good land will avail but little with a plough that does its work in an imperfect manner, and the farmer would find that he was far behind his neighbors both in quality of work

and time, if he was without a harrow, or if he should use the flail or horse's hoof, instead of the threshing machine, upon large quantities of grain.

If his plough turns the furrow, so as to preclude the atmospheric influences, or breaks it into disjointed masses, his crop is materially affected by it. The whole action of the plough depends upon a shaping so precise, that a very accustomed eye cannot ascertain without trial whether a plough is rightly turned or not. Again, the operation of the plough depends upon the kind of soil to be turned. The heavy ploughs made for the strong and hard soils of New England, might prove of little use on the mellow vegetable mould, that constitutes the prairies of the West. In Massachusetts, many of the farms are so small that the sickle and flail may still be used; while in Illinois, Iowa, or Missouri, the use of either would be looked upon as strange, and excite as much wonder, as would Noah's ark, with its inhabitants, drifting into the harbor of Chicago, or working up stream, against the current of the Mississippi, into the port of St. Louis.

The plough is the implement of the most importance on the farm; and the improvements made in this article, within a few years, especially in the draft and in the adaptation for subsoiling, must produce great and beneficial results in this State, which will show a new and more smiling face on our ancient mother, in the latter half of this century.

It is but a short time since the discovery was made that large portions of our best and most fertile lands, were neglected and unproductive. Experiments were made on a small scale, to reclaim meadow lands, in the Irish fashion, with the hoe; then the common plough was introduced, but both proved inadequate to the labor. It was found that the cost of subduing in this manner, was so great, that few proceeded in the attempt. But enough was accomplished to reveal the fertility of these lands, and to excite an inquiry how they could be reclaimed at a remunerating cost. Methods were soon devised not only to plough meadows that were hard, but those inaccessible to the team on account of their softness. The pulley, rackets, and meadow plough with double share, have added some mil-

lions in value to our New England soils. This plough cuts the entire under surface of the furrow, from the subjacent soil, and enables the mould board, with the aid of the ploughman's foot, entirely to reverse it. From the elasticity of the meadow sward, filled as it usually is with innumerable roots, no other implement has been found equal to the meadow plough, in the work of reclaiming our meadow lands.

The use of horse-power, for the purposes of cutting and harvesting grain, for ploughing and other operations, may very probably, before many years, be superseded in a measure by steam power. The idea has been already suggested, and some attempts have been made to carry it into practical operation. It would seem that steam power could only be applied successfully to ploughing, by running the plough on wheels, as is done in some parts of Europe, and in the prairie plough in the West; and then that it could not be used to advantage except on level, or nearly level lands, free from stumps and large stones. Some experiments were recently made in England with the plough, subsoil plough and harrow, operated by steam power, all of which are represented as fully answering all reasonable expectations. The ploughing took place on old lands, having some dips. In one experiment, four acres were ploughed in ten hours, and might have been subsoiled at the same time, making the amount ploughed nearly an acre an hour. The relative expense of ploughing twenty-four acres, is found by that trial to be, by horse power, \$44 23, and by steam power, \$30 75, making a difference in favor of the steam power in ploughing the twenty-four acres, of \$13 48. We can hardly realize that it will ever be of practical use in New England.

After the most judicious selection of a plough, the work will be quite likely to be badly executed, unless the principles of draft are understood. "So great is the difference between an awkward and skilful adjustment of the draft to the plough, that some workmen with a poor instrument have succeeded better than others have with the best; and ploughs of second quality, sometimes for this reason, have been preferred to those of the most perfect construction."

Perhaps the object of the Massachusetts State Agricultural

Society, in instituting the ploughing matches at Brighton, was principally an improvement in the breed of working oxen. Yet so slow were the competitors in those honorable and useful contests, to allow of any deficiency in their animals, and to lay upon them the stigma of defeat, that they were led to most searching examination into the structure of their ploughs, to which they were not willing to charge it. The result, therefore, has been successive improvements in the plough. A general impetus has been thence communicated to the whole art of agriculture. Improvements and inventions have abounded. New implements have been invented, old ones improved, and thus a better tillage has been produced, and greater facilities in harvesting have enabled the farmer the better to save his crops.

Another indispensable implement upon the farm and one of great practical utility, is the harrow. This instrument naturally follows the plough in farm operations, and although scarcely less important, in the service which it renders, than the plough itself, has not seemed to obtain that attention which it deserves. Indeed, while constructed in the manner in which are most of them now used, they will gain few golden opinions from intelligent men. Their great objection lies in their weight. They are too heavy and are moved too slowly. In order to pulverize the soil thoroughly and leave it in fine and delicate tilth, it is necessary to use a light harrow, with sharp teeth, and to move it quickly over the ground. "If we examine a field, one half of which has been harrowed by weak, inefficient horses, and whose pace was consequently sluggish, the other half by an adequate strength and swiftness of animal power, we shall find the former will be rough and unfinished; the latter comparatively fine and level, and completed in what would be called a *husbandry-like* manner." On meadow sward, that is filled with roots of small bushes and coarse grass, a light harrow with sharp teeth, moved rapidly over the surface, cuts the roots apart and brings up the fine, light soil, admirably prepared to receive grass seed; while a heavy instrument, slowly moved, would turn up innumerable sods, and do little towards pulverizing the surface. "Many would be sur-

prised, who have never made the experiment, at the amount of reduction of which seed harrows, at least, are capable; and where land is clear, to see how effective very light small toothed harrows, may be made." In an experiment made between a pair of wooden harrows, and a pair of iron ones, constructed alike, although the iron ones were twenty pounds the lightest, yet they worked decidedly better and steadier than those made of wood. It seems to be requisite to have the desired weight in the most compact form; the instrument performs its work easier and better, while it is more conveniently handled by the operator.

The horse rake, in its various forms, has proved itself of great service. One patented by a Mr. Delano, of Maine, has been considerably used in this State, and is scarcely excelled by any labor-saving machine in use on the farm. Its teeth act independently, thus adapting itself to all surfaces, and the operator rides as he rakes. The process of raking is rapid, thus enabling the haymaker to leave his spread grass to the benefit of the sun, until a late hour in the afternoon, and frequently to get it in on the same day in which it is cut. It is cheap, simple in construction, and durable.

A horse-mowing machine, and a machine for spreading swarths, are implements much wanted, and are inviting subjects for the inventive genius of some of our citizens.

There are questions of great importance to be settled, with regard to the smaller implements. It may be asked, what weight and breadth are the most advantageous for the hoe? Undoubtedly they should be such that the person using it, could make the greatest number of effective strokes in a given time with the least fatigue. Hoeing is a laborious work, for the reason that the body is held in a bent position, which requires a constant, sustained effort, of the muscles of the abdomen and back, to hold up the great weight of the trunk, shoulders and head. The hoe should have the least weight consistent with the strength and size required for good work, and in order to be as light as is convenient, should have the least width that is sufficient for economical use. "The laborer, who makes, with a common hoe, two thousand strokes an hour,

should not wield a needless ounce. If any part is heavier than necessary, even to the amount of half an ounce only, he must repeatedly and continually lift this half ounce, so that the whole strength thus spent, would be equal in a day, to twelve hundred and fifty pounds, which ought to be exerted in stirring the soil, and destroying the weeds."

The same principle is applicable to most of the other small implements of the farm. Great improvements have been made in the shovel and manure fork. It is probably safe to say that nearly double the amount may be accomplished in a given time with a six, eight, or ten-tined fork, in most kinds of work where a shovel has formerly been used, than can be done with the shovel itself, and this, too, with greater ease to the operator. And to use the forcible language of another, "in no direction can we grasp more aid than in gathering about us all good and necessary tools. Parsimony here is ruin; a liberal and judicious expenditure is a precursor of success."

The patent laws have been a powerful auxiliary to the efforts of the agricultural societies, in stimulating the ingenuity of inventors. By securing to the inventor the exclusive benefit of his invention, they enable him to enrich himself, while he is benefitting the public. Agriculture owes many of the most useful inventions, designed to facilitate the labors of the the farm, to this healthy and proper stimulus furnished by the laws.

If our fathers fifty years ago, had foreseen the amount of immigration to this country, instead of making laws to protect patent rights from infringement in order that ingenuity and labor might reap their due reward, they probably would have enacted stringent laws against inventions, in fear that the laborer would be thrown out of employment and come upon the parish for support. Cotton cloth was then thirty or forty cents a yard; a girl's wages fifty cents a week. Now a girl's wages are often three to five dollars a week, which will purchase forty or fifty yards of cloth. The inventive genius of the country seems to be, for the most part, concentrated in New England, though some of the most beneficial inventions have started in other parts. And the inventive power of the people of New

England, has been turned very much to improvements in farm implements. Since our great political revolution which made us a nation, changes almost as great have been wrought out in the field of agriculture. Principles in vegetation then unheard of, or just beginning to be known by a few searching minds, have been more fully established and published to the world.

No subject can be presented to the notice of the agricultural societies and of this board, more worthy their attention, than the construction of farm implements, and improvements therein. Even the form and weight of so small an instrument as the hoe, might be a profitable subject of earnest and mature discussion, and a series of experiments like those of the ploughing matches, which have brought about so much improvement in the plough. The adaptation of the various tools and machinery used in the field to fulfil their design most thoroughly, by their capacity of doing the most work and in the best manner, with the least fatigue to the operator, can hardly be the subject of too much examination. All such examinations, though attracting but little public attention, may work out most substantial benefits.

The whole subject of farm implements, in all its bearings upon the labors of the field and the effect of those labors on the condition and improvement of the art, and on the value and beauty of the hills and valleys of the State, as well as upon the prosperity and happiness of the farmers, cannot be overrated.

The soil of Massachusetts is for the most part rather forbidding, while the advantages for commerce and other pursuits, have held out to our citizens inducements to engage in such employments, as would, (in their imagination) better repay time and industry, and give a larger profit to capital invested. Those who have staid by the sod, have done well. They have always, when industrious and skilful, gained a competent support, and some have saved small fortunes. But the cultivation of the soil here, undoubtedly requires more toil, skill and expense, than in some other states. We have, however, the comforting assurance of writers on political economy, that a hard soil is favorable to the best development of the intellect, and

that good morals thrive best, where the products of the land require the most care. In proportion, however, to the ungenial quality of the soil, is the advantage of machinery and implements adapted to lighten labor and assist the work. In no part of the country, therefore, is this subject of implements more important than here in our own State.

“The United States present a wide field for the operations of skilful artisans in all useful as well as ornamental articles; as their wealth increases so do also their taste for the elegant and beautiful, and their desire to possess what will minister to the refinements of life. This is ever the case with nations as they advance in intellectual power, and in the first appreciation of what confers real dignity on a people; and their moral strength keeps pace with their progress in intelligence.”

During the last fifty years, as was remarked in the outset, the mind has been preëminently active in seeking out new inventions. It has also had its period to soar to the heavens in search of new planets, mark the time of their coming, and tell us when their far-off light shall first touch our earth;—to explore fathomless seas and penetrate deep bays and inlets of frozen zones; it has outstript the fancies of the poet, in passing “a girdle round the earth in forty minutes.” Marvellous works has it wrought in steam and electricity; probed deep into animal physiology, given us new limbs in surgery, and finally thrown us into a temporary death in order to haul up our shattered frame for repair of damages.

But at present the mind’s popular idea is agriculture. The decrease of crops on most of our old lands, with the rapid increase of population, has arrested the attention of many earnest and intelligent persons. The inquiry everywhere is, What shall be done to increase the fertility of our impoverished acres, and bring a more ample reward for the labor bestowed upon them? Our answer is, more light,—a more intimate knowledge of the laws and operations of nature, and a more careful and skilful cultivation of what we undertake.

SIMON BROWN, *Chairman.*

MANUFACTURES.

We have considered this subject in several points of view, and have found, in each of them, strong reasons for the encouragement of manufactures by the agricultural societies of this Commonwealth.

There is an obvious and necessary connection between all the arts of life, and the interests of each are best promoted by sympathy and harmony of action with all the rest. Manufactures are, in a very important degree, linked with the interests of agriculture. They proceed from, stimulate and recompense the labor, skill and enterprise of the farmer. He must produce the raw materials, to be converted by the manufacturer into fabrics, which the community requires for comfort and health. His cattle-yard, sheep-fold, sty, poultry-yard, dairy, orchards and fields, are all needed tributaries to the general stock, which supplies every article of food and clothing, of comfort and luxury. Our houses, in every part, and in all their conveniences; our implements of labor, and our means of conveyance, remind us of the necessary cultivation of the soil. The traveller, and he who dwells at home, the manufacturer, the mechanic and the merchant, have all frequent occasion to feel their indebtedness to those interests, which it is our immediate object to foster and encourage.

Without pursuing this obvious thought, we proceed to remark, that by suitable attention to manufactures, and a generous encouragement of every effort to multiply and improve them, we shall contribute directly to our own advantage. The aid we shall lend will, of necessity, be returned in the large consumption of the products of the farm and the garden, and in a corresponding increase of the profits of cultivation.

Nor is it less obvious, we conceive, that a free and generous supply of those articles which the manufacturer can contribute, must enhance, in a great measure, the attractiveness and the profits of our annual exhibitions. There are many who usually attend these exhibitions, to whom no objects can be presented more gratifying than such contributions. We have noticed

the closest and apparently gratified attention to the often elegant specimens of cloths, shawls, hosiery, carpeting, &c., which have graced our halls. We have watched the diligent inspection of the implements of husbandry, the articles for the dairy the labor-saving machines for domestic operations, the boots and shoes, the hats and bonnets, the carriages and harnesses,—the curious and the useful inventions, which were here displayed. We have seen crowds of eager spectators, around the table laden with the fruits of female industry, taste and skill. And were either department to be neglected, or but meagerly supplied, the consequence would be no less marked and injurious, than if the products of the dairy, the garden and the field were wanting, or but scantily collected. It would seem, therefore, to be at once the duty and the interest of our societies, to increase, by suitable attention and encouragement, this important feature of our annual exhibitions.

Again, we conceive that the industry, skill and enterprise, which are necessary to the production of such manufactures as we would desire to see at our annual exhibitions, are intimately and largely connected with the general education, refinement and happiness of society;—an object most worthy of all encouragement, and most likely to act, with reflex influence, upon the interests of all who shall aid in promoting it. In the factory, in the workshop and at the fireside, are those elements formed and put in exercise, which are to refine the character, and swell the prosperity, of the community, by which our labors are to be appreciated and recompensed. We cannot do less, therefore, than offer every suitable inducement to multiply and improve the productions, to which such elements give birth. The neglect, or the low estimation of them, would be alike unjust and detrimental.

Observing that the duty assigned the committee, excludes the consideration of several articles of manufacture, in which the farmer is most interested, we invite attention to the following table, in which are embraced many articles not hitherto common at our annual exhibitions, but at all times a desirable contribution to them. The premiums which are offered as an encouragement and compensation for the display of them, will,

of course, vary in amount, with the pecuniary resources of the respective societies that offer them.

Manufactures of Cloth, Hosiery, &c.

Best piece of cotton cloth, not less than 30 yards.

“ “ “ cotton prints, “ “ “ “ “

“ “ “ cotton chintz, “ “ “ “ “

“ “ “ cotton flannel, “ “ “ “ “

“ “ “ cotton and woolen dress goods, not less than 30 yds.

“ “ “ tapestry carpeting, not less than 30 yards.

“ “ “ Brussels carpeting, “ “ “ “ “

“ “ “ ingrain carpeting, “ “ “ “ “

“ “ “ stair carpeting, “ “ “ “ “

“ hearth rug.

“ piece of broadcloth, not less than 25 yards.

“ “ “ kerseymere, “ “ “ “ “

“ “ “ woolen dress goods, not less than 30 yards.

“ “ “ flannel, not less than 30 yards.

“ pair of woolen blankets.

“ woolen shawl.

“ specimen of woolen shirts.

“ “ “ woolen drawers.

“ 6 pairs woolen hose.

“ “ “ woolen half hose.

“ 2 “ silk hose.

“ “ “ silk half hose.

“ counterpane.

“ bale of cotton or woolen wadding.

The above-named articles must have been manufactured in the county within one year. The articles, made in the *family* of the person presenting them, will receive particular consideration, and, if worthy, an additional premium.

Manufactures of Leather, &c.

Best pair of thick boots.

“ “ “ calf skin boots.

“ “ “ thin boots, other than calf skin.

“ “ “ kip boots.

Best pair of thick brogans.

- “ “ “ fine brogans.
- “ “ “ ladies' walking shoes.
- “ “ “ ladies' slippers.
- “ riding bridle and saddle.
- “ single chaise or carriage harness.
- “ double chaise or carriage harness.
- “ specimen of finished calf skin.
- “ “ “ “ kip skin.
- “ “ “ “ morocco.
- “ “ “ “ sole leather.

Miscellaneous Articles.

Best specimen of shell combs, not less than six.

- “ “ “ horn combs, “ “ “ “
- “ “ “ men's hats.
- “ “ “ children's hats.
- “ “ “ men's caps.
- “ “ “ children's caps.
- “ “ “ silk umbrellas.
- “ “ “ gingham umbrellas.
- “ “ “ straw bonnets.
- “ “ “ straw hats.
- “ “ “ straw braid, not less than 100 yards.
- “ collection of wooden ware.
- “ “ “ earthen ware.
- “ “ “ stone ware.
- “ “ “ tin ware.
- “ “ “ glass ware.
- “ “ “ iron ware.
- “ specimen of coopers' work.
- “ “ “ horse shoes.
- “ “ “ ox shoes.
- “ “ “ sperm candles, not less than 10 lbs.
- “ “ “ stearine candles, “ “ “ “ “
- “ “ “ tallow candles, “ “ “ “ “
- “ “ “ soap, washing, “ “ “ “ “
- “ “ “ soap, fancy, “ “ “ “ “

Best specimen of pleasure carriages, (single.)

“ “ “ pleasure carriages, (double.)

“ “ “ wagons, (covered.)

“ “ “ wagons, (open.)

“ “ “ starch, corn.

“ “ “ starch, potato.

“ “ “ starch, wheat.

“ “ “ farina.

“ “ “ prepared oats.

“ “ “ prepared barley.

“ “ “ wheaten groats.

“ “ “ mustard.

“ “ “ pickles.

“ “ “ preserves.

“ “ “ catchup.

“ “ “ Indian meal.

“ “ “ rye meal.

“ “ “ wheat meal.

“ “ “ buck wheat.

Not less than 50 lbs. of each, in clean bags.

“ “ “ wheat bread.

“ “ “ rye bread.

“ “ “ Indian and rye bread.

“ “ “ Indian and wheat bread.

Not less than 2 lbs. of each, (with special regulations.)

“ “ “ churns.

“ “ “ butter workers.

“ “ “ butter stamps.

“ “ “ lard, not less than 10 lbs.

“ barrel superfine flour.

“ “ rye flour.

“ specimen of glue, not less than 10 lbs.

“ cooking stove.

“ parlor stove.

“ farm boiler.

Any specimen of work performed by a child under 12 years of age, exhibiting industry and ingenuity, shall, if worthy, receive a premium at the discretion of the committee.

Any specimen of embroidery, or other fine needle work,—of drawing, etching, or painting,—of ornamental, or of useful work, not otherwise provided for, shall, if worthy, receive a premium at the discretion of the committee.

Every article, to be entitled to a premium, must have been produced in the county within one year. And no article, which has received a premium in one place, shall be entitled to the same in another.

For the Committee,

CHARLES C. SEWALL.





