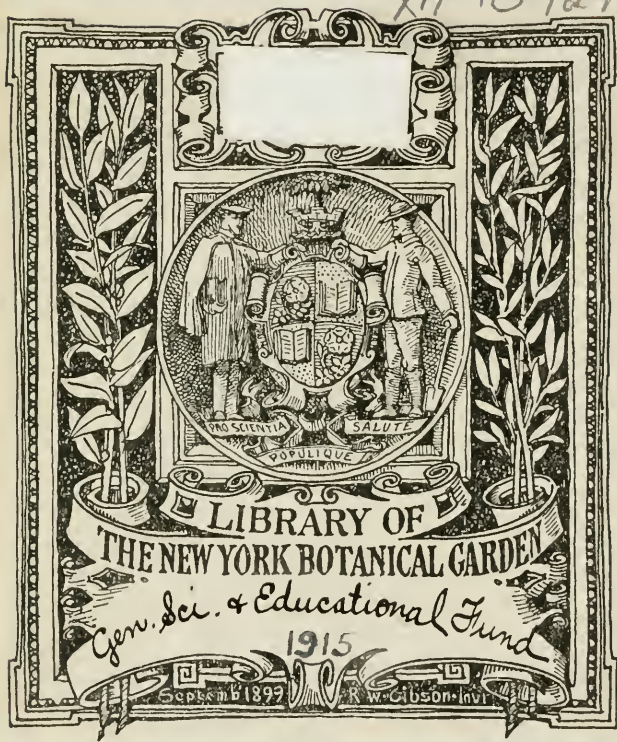


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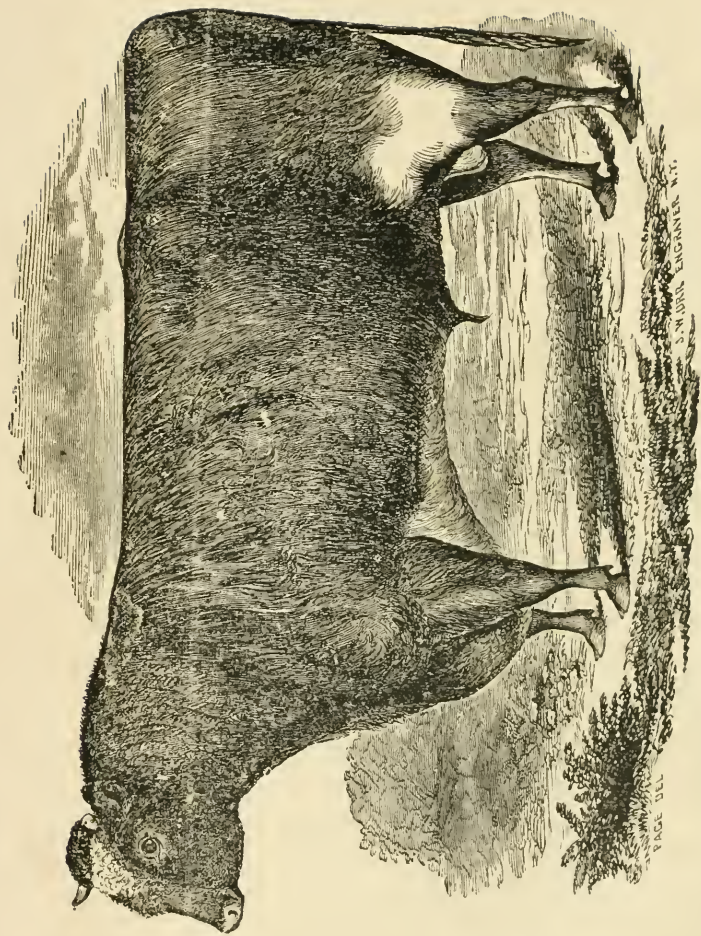












**SHORT HORN BULL "DUKE OF GLOSTER," (11,382.)**

For pedigree, see English Herd Book, volume 10th, page 58.—Imported by L. G. Morris and N. J. Bear in 1854; now the property of Samuel Thorne, of Thornedale, Washington Hollow, Dutchess Co., N. Y.

SECOND ANNUAL REPORT

OF THE

SECRETARY

OF THE

MAINE BOARD OF AGRICULTURE,

1857.

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1857



# BOARD OF AGRICULTURE—1857.

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## STATUTE MEMBERS:

THE GOVERNOR AND SECRETARY OF STATE, MEMBERS EX-OFFICIO.

<i>Society.</i>	<i>Name.</i>
Androscoggin, . . . . .	ROBERT MARTIN.
Aroostook, . . . . .	JOSEPH D. PIKE.
Cumberland, . . . . .	E. G. BUNTON.
Franklin, . . . . .	JOSEPH KEITH.
Kennebec, . . . . .	HORACE PARLIN.
Lincoln, . . . . .	EBENEZER COBB.
Oxford, . . . . .	DARIUS FORBES.
Penobscot, . . . . .	E. F. CRANE.
Piscataquis, . . . . .	CALVIN CHAMBERLAIN.
Sagadahoc, . . . . .	CHARLES J. GILMAN.
Somerset, . . . . .	THOMAS FULLER.
Washington, . . . . .	NATHAN PATTAŃGALL.
Waldo, . . . . .	THOMAS W. CUNNINGHAM.
York, . . . . .	S. L. GOODALE.

## HONORARY MEMBERS:

Bangor Horticultural, . . . . .	HENRY LITTLE.
Maine Pomological, . . . . .	D. A. FAIRBANKS.
North Penobscot, . . . . .	WILLIAM R. HERSEY.
North Franklin, . . . . .	SEWARD DILL.
North Kennebec, . . . . .	ISAAC W. BRITTON.
South Kennebec, . . . . .	NATHAN FOSTER.
Penobscot and Aroostook Union, . . . . .	MORGAN L. GERRY.
West Somerset, . . . . .	W. B. SNOW.

S. L. GOODALE, *Secretary.*



## STATE OF MAINE.

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An act to amend an act entitled "An act to establish a Board of Agriculture."

*Be it enacted by the Senate and House of Representatives in Legislature assembled, as follows :*

SECTION 1. The members of the Board of Agriculture, and the secretary thereof, shall continue in office until the expiration of the term for which they were elected.

SECT. 2. The State Board of Agriculture shall, after the expiration of the term of office of the present members, consist of members who shall be elected and classified, as follows : one member may be elected by each incorporated agricultural and horticultural society in the state, which maintains an annual exhibition, and expends not less than one hundred and fifty dollars in premiums for the encouragement of agriculture, horticulture and the arts connected therewith. Said members shall hold their office for the term of three years from the day of the annual meeting of the board, next after their election, except as hereinafter provided, and shall be elected by ballot at the annual meetings or fairs of such societies, or at any regular meeting thereof called for such purpose ; and they shall receive and produce as evidence of membership, a certificate of election signed by the president and secretary of such society, and also a certificate from the treasurer of the society, signed and sworn to, before a justice of the peace, that the society which he represents has actually expended during the previous year not less than one hundred and fifty dollars, as above required : *provided, however,* that if the annual exhibition of such society shall have been, by the advice of the Board of Agriculture, merged in that of the State Agricultural Society, the last named certificate shall not be required ; and in case of any vacancy occurring in the representation of any society, the same may be filled by appointment, by the president and secretary of such society.

SECT. 3. At the next annual meeting of the Board of Agriculture, the members shall be divided as equally as may be, into three classes. The term of office of the first class shall expire at the end of one year, of the second class at the end of two years, the members of each class to be designated by lot.

SECT. 4. The Board of Agriculture shall meet at the State House in Augusta, annually, on the third Wednesday of January, and they are hereby

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empowered each year to elect a suitable person to act as secretary of the board, and to prescribe and determine his duties, and in case of vacancy by death or otherwise, the governor with advice of his council, is hereby empowered to fill the same. And all reports and returns required by law to be made by said societies, shall be made and returned to the secretary of said board. The compensation of the secretary shall be eight hundred dollars per annum, and such necessary traveling and incidental expenses as shall accrue in the discharge of his duties, an account thereof being first audited and allowed by the governor and council. And the compensation of the members of the board shall be the same as that of members of the legislature, for a term not exceeding ten days, provided that if a member of the board shall also be a member or officer of the legislature, he shall receive compensation in but one capacity.

SECT. 5. It shall be the duty of said board to investigate all such subjects relating to agriculture, horticulture and the arts connected therewith, in this state, as they may think proper; and it is hereby empowered to take, hold in trust, and exercise control over any donation or bequests that may be made to it for promoting agricultural education, or the general interests of husbandry; and the said board shall annually, on or before the first Wednesday of January, by its secretary, submit to the legislature a detailed report of its doings, together with an abstract or digest of the returns of the several agricultural and horticultural societies and of such statistics as he may be able to collect, with such recommendations and suggestions as the interest of agriculture may be deemed to require, and cause to be printed under his direction and control not more than ten thousand copies of the same, one thousand copies thereof being for the use of the legislature, and the remainder for distribution under the direction of the board among the people of the state.

SECT. 6. The governor shall, from time to time, draw his warrant on the treasurer for such sums of money as may be necessary to defray the salaries and expenses provided for by this act, an account thereof having been first rendered by the secretary of the board, and audited by the executive council; and a sum not exceeding one thousand seven hundred dollars annually is hereby appropriated to meet such expenses.

SECT. 7. All acts and parts of acts inconsistent with this act are hereby repealed.

SECT. 8. This act shall take effect from and after its approval by the governor.

[Approved April 6, 1857.]

# REPORT.

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*To the Senate and House of Representatives:*

PROMINENT among the duties of my office, is that of annually submitting a report, in part\* embodying "such recommendations and suggestions as the interests of agriculture may be deemed to require." In the one which I had the honor to submit to you last year, after remarking upon the importance of agriculture, sketching the history of early efforts and of legislation in its behalf, and noticing some of its wants, the attempt was made to treat of its present condition and prospects among us.

In viewing my field of labor for the present year, two paths seemed to invite attention; the one regarding the improvement of agriculture as it exists in the older parts of the State, the other having to do with the development of the agricultural resources and capabilities of such portions as are not yet settled. Of the urgent necessity of the former there can be no doubt, and equally certain is it, that such was the principal end aimed at in the establishment of this Board; yet in view of the fact that the State is possessed of a large extent of what is almost an unbroken wilderness, portions of which are reported to be rich and fertile in a high degree, but of which very little definite and reliable information seems to be generally diffused among our citizens, and of one of the signs of the times, to wit; that the tide of emigration westward, which for years past has operated so disastrously in draining our State of brains, money and muscles, is now partially stayed, and so a favorable

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\* The report of the doings of the Board at its last session, January, 1857, and which is also required, was prepared in season to be printed in connection with the "Abstract of Returns" from the various agricultural societies in the State for 1856, which returns were received by me in December preceding, and it is consequently omitted here.

opportunity presented to invite anew, a candid and critical examination of the inducements offered by a judicious selection of virgin soil within our own borders, I do not feel at liberty to neglect the latter path, and accordingly propose herewith, first, to present such facts and considerations regarding a part of our newer territory, as I have been able to gather by personal observation and by inquiries instituted on the spot, and afterwards, to resume the consideration of agriculture in the State at large, viewed specially with regard to its defects and available modes of improvement.

The portion of our unsettled territory which is believed at this time to present the greatest inducements to immigration, is what is known as the Valley of the Aroostook, together with a tract fifty miles, more or less, south of this, embracing the five easternmost ranges of townships, and which is drained in part by other tributaries of the St. John, but principally by those of the Penobscot.

The greater part of this territory, embracing upwards of two thousand square miles, is what is usually denominated settling land, although lumbering has been largely, and is still, to a considerable extent, carried on in some sections of it; in other portions no more timber now exists than will be needed for building purposes. The land throughout is uniformly good; in some of these townships scarce a lot of one hundred and sixty acres can be found which is not capable of being made a good farm, and but little waste land is believed to exist in any of them.

The surface is more or less undulating, the easterly ranges of townships being less hilly, and more free from stone, than is usual in the State at large; the ranges west of these, as fourth and fifth, are more broken in surface, sometimes hilly, and with frequent boulders and out-crops of limestone, slate, &c. Some townships in the first range are so free from stones that even a sufficiency for wells, cellars, &c., is not always readily obtained.

The soil is various, but consists mainly of a deep rich hazel loam, and is usually underlaid with a substratum of limestone, sometimes, but to less extent, with slate, the depth varying from two to six or more feet. The soil seems to have originated mostly from the decomposition of limestone and slate. I noticed nothing like hard pan, clay or other appearance of retentive subsoil, the water passing readily downward so as to obviate any necessity for underdraining.



I was informed, however, that beds of clay are occasionally found by digging at a moderate depth in various localities, and that it probably exists in sufficient quantity for building purposes. At number eleven, fifth range, bricks have been made in some quantity. Lime also has been burned in the same vicinity.

There is more or less of interval bordering the streams, and a still larger extent of such as is doubtless of alluvial origin, but more elevated than what usually passes among us for interval land. That which predominates chiefly is what is ordinarily called "strong hard wood soil," and good for all crops. Other parts known as cedar swales, which at a casual glance might be deemed too wet for profitable tillage, are found to prove otherwise, and when cleared to yield good crops; for some purposes they are objectionable on account of being more liable to frosts than the higher lands, but they give fine crops of grass and grain. In several instances where turnpiked roads had recently been made through these lands, I had a favorable opportunity to examine the soil, (with a little help from the spade,) to a depth of two or three feet. The upper ten or twelve inches consisted mainly of vegetable matter, somewhat resembling muck, but of better consistence; below this, a loam if not clayey, yet more nearly resembling it than was noticed elsewhere, and beneath this a gravelly loam, the whole sufficiently porous to allow superfluous water to pass away with ease—so that seeing it directly after a heavy rain, no standing water could be found. These roads, I was told, were made at an expense of less than two dollars per rod, it costing from seventy-five cents to one dollar to fell the trees and grub out stumps, and as much more thoroughly to turnpike the track.

In the vicinity of Houlton, the soil varies in character, some being lighter and some more tenacious. and here I found the average depth of plowing to be less than in other sections, being from three to six inches only. Some of the most successful farmers there, allege that plowing deeper than four or five inches turns up an inert or injurious subsoil. Hon. S. Cary, who showed me crops rarely surpassed, as for instance, oats promising eighty bushels to the acre, and wheat twenty five to thirty, if not injured by the midge, plows usually, four inches; a lot of nine acres which had previously yielded eight hundred and sixty-seven bushels of oats, by measure, was plowed to this depth, and was, when I saw it, bearing

luxuriant grass. Others in the same town plow deeper, some to the depth of nine inches, but all agree in opinion, that it is not advisable to disturb more than an additional inch each year, unless manure of some kind be liberally applied, as otherwise the crops not only get no immediate benefit, but are rather injured. Thirty or forty miles north of Houlton, as at Fort Fairfield and vicinity, the first plowing is often eight to ten inches deep, and with the most gratifying results. The soil generally exhibits unmistakable evidences of great inherent fertility, and of the land at large, it may be said, as of another in olden story, in it "thou mayest eat bread without scarceness."

The natural fertility of the soil is also shown in a satisfactory manner by the actual thrift and prosperity of the settlers, many of whom came here a few years ago, poor and destitute, and some seriously embarrassed, but are now in easy circumstances. I did not learn of a single instance in which a man, enjoying ordinary health, and resisting the temptation to meddle with timber, had devoted himself to farming operations without highly gratifying success.

**NATURAL GROWTH.** The forest trees of this section are of mixed growth. The sugar maple and yellow birch prevail chiefly, and these attain very great size. They are intermingled with occasional lofty pines, spruce, fir, white cedar, poplar, elm, ash, &c. In the lower lands, the evergreens here named, with some hemlock and abundance of larch or hackmetac, are plenty, but they are by no means confined to wet soils. Although much choice timber has been cut and found a market via the river St. John, considerable wealth of forest yet remains.

**CLIMATE.** This is the great bugbear, in the minds of many, as an obstacle to successful farming any where in Maine; and Aroostook, being the most northerly county in the State, is often deemed more objectionable for this reason. But while it has its peculiarities, I failed to see cause to deem it the worst.

It is an exceedingly healthy climate. Upon this point, I cannot do better than to quote from the late statistical report on the sickness and mortality in the army of the United States, compiled from the records of the Surgeon General's office, as the testimony of the surgeons stationed in Aroostook in 1844-5, when their reports were made, is both disinterested and conclusive, and reveals a remarkable



freedom from pulmonary disease so common in most sections of New England. From Fort Kent we have the following :

“The region adjacent to Fort Kent is probably one of the healthiest within the limits of the United States, and though rigorous, the climate seems to be productive of the most robust health. Fevers, and other diseases of a malarious origin, are unknown; and other acute diseases are by no means of common occurrence.”

This surgeon says of another who had better opportunities than himself, that he not only never saw a case of consumption in the country, but that some inmates of the garrison who had suspicious symptoms when they came into it, recovered from them entirely.

“The children in and near the garrison have generally enjoyed the best of health; and have been afflicted with none of those complaints so common in warmer climates. It has been frequently made the subject of remark by the mothers, how vast the difference in this respect between Fort Kent and their former posts.”

Fort Kent is at the extreme northern part of the State, at the junction of Fish river with the St. John, latitude forty-seven degrees fifteen minutes north, longitude sixty-eight degrees thirty-eight minutes west, in a direct line sixty miles from the St. Lawrence and one hundred and eighty from the sea. The soil, a light loam, which rests on a stratum of gravel and pebbles. On passing through this is found a bed of tough blue clay, reposing on an argillaceous slate rock. It is fifty miles or more north of the great bulk of choice settling land in the county.

From Fort Fairfield, which is on the south bank of the Aroostook river, a few miles from its mouth, in latitude forty-six degrees forty-six minutes north, longitude sixty-seven degrees forty-nine minutes west, the resident surgeon reported :

“This post is uncommonly salubrious. The climate, though rigorous is uniform for long periods, and does not appear favorable to the development of pulmonary consumption, or of other affections of the respiratory system. The country is very little settled, but so far as my observation extends, no case of consumption has occurred either in the permanent inhabitants or among the numerous parties of lumbermen who pass the entire winter in the open air, and are the most hardy and athletic of men.”

From Hancock Barracks, Houlton, latitude forty-six degrees seven minutes, longitude sixty-seven degrees forty-nine minutes, one hundred and eighty miles from Bay of Fundy, in a direct line one hundred and fifty-six miles from the ocean, and elevated six hundred and twenty feet above it :

“This station surpasses most others in its freedom from sickness. Cold as the winter is, and damp as the autumn and spring are rendered by the frequent rains, persons who have suffered from weak chest find their complaints much mitigated by a residence here. Consumption is rarely seen among the inhabitants of the town; and many persons who were predisposed to that disease have continued in good health, free from cough, and have had their constitutions invigorated and improved.”

In the report from Fort Kent are mentioned numerous facts going to show both the longevity of individuals, and the rapid natural increase of population. For instance, six families living within the space of a mile had one hundred and six children in all. Twelve other families had ninety-three children, in an aggregate married life of one hundred and sixty-two years, averaging a birth every twenty months in each family. One settler had nineteen children in eighteen years; another at the age of fifty-nine had twenty; another had twenty-six, the mother being fifty-three years old. Many other facts are cited, showing that whatever the cold of winter or other peculiarities of climate, there is nothing to preclude the highest conditions of health and longevity.

The growing season, it is true, is shorter than elsewhere, but the rapidity of growth when once begun, is unparalleled in other parts of New England. Of this, I cannot state from observation, making as I did, my visit at mid-summer, but the uniform testimony of settlers on this point, and the progress actually made towards maturity which I witnessed, was fully satisfactory.

The snow falls early, sometimes as soon as the end of October, and before much frost (sometimes none) is in the ground. There it remains, steadily covering the soil until spring opens, a warm blanket two to four feet deep, with no alternations of freezing and thawing. When it goes off, the transition from winter to summer is almost instantaneous, and the soil *may be worked at once*. Being thus blanketed through the winter and porous enough as before remarked to allow superfluous moisture readily to pass downwards, no time is

lost either for the ground to thaw, or to become sufficiently dry and warm to be worked to advantage. The crops are put in with no delay, and once in, they proceed with rapid strides to maturity.

On a farm of Mr. Cary's, at Houlton, I was shown thirty acres of wheat, ten of which were sown April 17th to 20th. This, in the latter part of July, was fully in milk, and past liability to injury from the wheat midge or fly.\* The rest was sown considerably later and the grain not yet fully formed. Upon this, I was sorry to see that the midge threatened to levy a serious contribution.† In the neighborhood of Presque Isle, I was informed that oats, sown as late as June 10th, usually ripened without injury from frost. With regard to the usual period at which frosts occur, it was not ascertained to differ materially, of late years, from other sections. In low grounds frost is often noticeable at an early date, but on the higher lands usually tilled, one sufficient seriously to check vegetation is not expected before "the full of the moon in September," and this period safely passed, not until some weeks, possibly a month later. From the best information I could gather, frosts have not been so early or destructive for the ten years past, as before that time, and when the clearings were generally smaller and afforded little opportunity for circulation of air. The last week in August, 1842, there occurred a frost which did considerable injury, especially to the crops of such of the settlers as had been engaged in spring, in driving timber, and so had deferred their seed time to a period too late for safety. June 4th, 1844, ice made as thick as window glass. In 1845, the last spring frost occurred on the 31st of May. The injury which ensued from the early and late frosts from 1842 to 1846, was, in many cases, of a serious character, and had a very discouraging effect upon immigration. I did not learn of serious injury since that period in any case where crops were put in at the proper season. In some years frost has first occurred in Aroostook several weeks after it appeared in Penobscot county, and I learn that the present year no frost had occurred up to September 26th.

The term, during which cattle required to be fed from winter

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\* Very generally in this State, but erroneously called "weevil;" a name which properly belongs to another and very distinct insect, which attacks the matured grain after being stored.

† I have been gratified to learn since, that the actual injury proved to be trifling.

stores of forage, proved shorter than was anticipated, the autumnal feed being said to be abundant and good *until the snow fell*, and *as soon as this disappeared in spring*, cattle could find plenty of fresh and nutritious grasses. Some of the residents, who had been familiar with agricultural pursuits in other States, assured me that in this regard Aroostook possessed decided advantages over southern Maine or Massachusetts. The value of such pasturage will be readily appreciated by every practical farmer.

A very noticeable peculiarity of the climate of Aroostook, is the exemption hitherto enjoyed from injurious droughts. The settlers informed me that although there had been times when rain would have been acceptable somewhat sooner than it came, yet, that it could not be truthfully said that actual injury had ever ensued for want of it.

Whether, and to what extent, this exemption may be attributed to the existence of primeval forests, and whether it may be expected to continue after the woodman's axe has done its work, may be a matter of some uncertainty; but the probability that they are intimately connected, the one with the other, adds force to the well known and abundant arguments against indiscriminate waste and strip, and in favor of retaining, (or, if preferred in some cases, allowing an immediate second growth of,) sufficient wood for fuel, timber, and especially for *shelter* to their homes, fields, orchards, cattle and crops. The subject of shelter in a climate like ours, is one of such importance that I cannot forbear to express the hope that it may be duly considered and acted upon.

PRODUCTIONS. All the small grains thrive well. Wheat is not so extensively grown as formerly, the fly, or midge, (commonly called weevil,) rust and mildew being found serious drawbacks upon its profitable culture. I was informed by Mr. Nathaniel Blake of Portage Lake, (number thirteen, in sixth range,) that the wheat-fly had never troubled the grain there, and that he usually reaps twenty-five bushels per acre; but this was the only instance of entire exemption found, although at Patten and some other places, injury from the midge had been far less than from rust. Mr. Blake also stated of this locality, that frosts were usually two weeks or more later than at number eleven, some ten or twelve miles south of it. Mr. J. W. Haines, an old settler from Kennebec county, on Letter

D, in first range, firmly holds from his own experience, that the fly, though often abundant, rarely injures the crop unless rust, mildew, or some unfavorable atmospheric influence retards the growth of the plant, thus giving the maggot time to commit his ravages, as otherwise, the plant being perfectly healthy and thrifty, the grain fills plumply and is abundant, be the maggots never so plenty.\*

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\* As one proof of this, Mr. Haines stated that on threshing his grain, he had found maggots in great abundance, and his crop very slightly, if at all, lessened thereby. Whether his opinion as above given, be correct or not, he probably in this instance mistook the maggot of the "wheat mow fly" for that of the ordinary wheat midge or fly, the maggot of which usually leaves the plant at an earlier period before harvesting. Of the "wheat mow fly," only recently known as a depredator upon the wheat crop, Mr. Fitch, in his treatise on insects, says: "Several years ago, a farmer in my neighborhood, soon after gathering his wheat into the barn, found countless myriads of small worms were crawling out of it, literally covering the mow of grain, and wandering away from it, to every part of the barn. These worms it is evident, had just now completed their growth, and were crawling about in search of the moist earth wherein to bury themselves, to repose during their pupa state. It would seem that some cause had made them later than usual in reaching maturity; and had the wheat remained in the field, a few days longer, they would have escaped from it there, so generally that no notice of them would have been taken, and the fact would never have been known that such an army of insects had had their subsistence upon this crop.

Alarmed with the numbers of these worms, and fearing they would perhaps wholly destroy the mow of grain, the proprietor had the whole of it threshed immediately. I happened to visit the barn as the threshed grain was being winnowed, when the above facts were communicated to me. The heap of uncleaned grain was literally alive with these worms and the cracks in the floor were filled with them. The kernels of wheat appeared to be shrunk in the same manner as when they have been infested with the wheat midge. I put a number of these worms into a small box with some of the chaff and grain. Other engagements diverted my attention from this subject, and it was wholly forgotten, until many months afterwards, when, happening to open the box, I found in it quite a number of small flies, which had completed their transformations, and perished in their confinement. It therefore appears, that it is by no means essential to these worms to bury themselves in the moist earth, though that is doubtless their natural habit. But if they can find any crevice in the dry barn where they can stow themselves and lie undisturbed, it is all they require in order to complete their transformations.

The worms, according to my recollection, were much like the little yellow maggots of the wheat midge, but were of a dull white color and rather larger. Their transformations are like those of flies generally, the outer skin of the larva or maggot contracting and becoming dry and hard and forming the case, within which the insect lies in its pupa state. It is but the tenth of an inch long and three hundredths in diameter; it is shining, and of a pale yellow color, of an oval or rather an



When successful, twenty to twenty-five bushels is considered a good crop. Instances of much larger yield were narrated. Mr. Haines stated that he had grown forty-one and a half bushels of spring wheat, of sixty pounds to the bushel, to the acre. This was on land which had been in grass for four years and manured for potatoes the year previous; and that his neighbor, Mr. Goss, in adjoining township Letter C, grew last year one hundred and thirty-five bushels of bearded wheat, on five acres, and in another instance, fifty-two and a half bushels of winter wheat on one acre of new land from which no previous crop had been taken. This was mentioned as a very unusual crop, as winter wheat had rarely succeeded so well as spring wheat. Mr. Alfred Cushman of Golden Ridge, (number three, in fifth range,) President of the Penobscot and Aroostook Union Agricultural Society, informed me, that in one instance, from two and a half bushels sowing, he had reaped one hundred and seventy-five bushels, on four acres, one acre of which proving too wet, yielded only about half as much as the rest, thus indicating fifty bushels to the acre, on three acres. Since then he had been less successful, having experienced rust often and mildew occasionally.

On the whole, it seems doubtful whether wheat may be depended on as a staple crop, or that it can be profitably grown to an extent much beyond the amount needed for home consumption. But no drawbacks were found to exist which may prevent large production of the other grains. Oats, barley and rye, with fair treatment, grow luxuriantly, and yield bountifully. It is true, some very small and meagre crops were noticed; one, for instance, of about twenty bushels of oats; but upon inquiry it was ascertained to be the *seventh successive crop* of oats on the same spot, without any application of manure, and that the fifth yielded thirty-five bushels. Who can wonder if such management, or rather gross mismanagement, prevails, that some, even here, become discontented, complain of the climate, take the western fever, and talk of emigrating? And here it may be added, that evidence was abundant that two, three, or even four white crops in immediate succession on the same ground,

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elliptical form, more rounded at the head and pointed at the opposite end, the segments distinctly marked by transverse constrictions. The fly appears much like the common house fly reduced to an infantile size."

was by no means so unfrequent as it should be. Several instances came to my knowledge, in which three successive crops of oats on the same land had yielded an average of fifty bushels or upwards per acre. The average production of these grains, *under good treatment*, may be set down as fifty bushels of oats, thirty of barley, and thirty to thirty-five of rye; the *actual average* would however be found at least twenty-five per cent. less than this.

Buckwheat is largely grown, and is probably gaining in estimation, for the remark was frequently made by residents, that although prejudiced hitherto against it, they had at length adopted its culture. The variety grown, is called here, rough buckwheat, and elsewhere known as Indian wheat. The smooth variety proves much less successful and is nearly abandoned. Its yield varies from twenty or thirty to fifty bushels—sometimes considerably more. With good treatment, and on soil in good condition, forty to fifty bushels may be confidently expected. It is usually grown upon the poorest. Its weight is from forty-five to fifty pounds to the bushel, and it yields about one-third of fine flour, which makes excellent bread and cakes, from a third to two-fifths of a coarser description, but very nutritious and highly esteemed for swine and other animals, the remainder being principally hull, is of little or no worth. The value of buckwheat for fattening animals, as compared with Indian corn, was variously estimated at from one-third to two-thirds its value, some deeming a bushel and a half of buckwheat equal to one of corn, others rating a bushel of corn worth three of buckwheat. The more usual estimate was one-half, although some who professed to have proved its value with care, were confident that deducting thirty-three per cent. for the hull, it was equal, weight for weight, to Indian corn, for fattening stock. The market value of Indian corn is usually two and a half times that of buckwheat.

Professor J. F. W. Johnstone, in his report on the agricultural capabilities of New Brunswick, states that he found, by analysis, that the flour of buckwheat was equally nutritious with the finer varieties of wheaten flour.

The success attending this grain in Aroostook, and the comparative extent to which it is grown, may be judged of from the fact, that by the census of 1850, this county, containing a little more than a fiftieth part of the population of the State, produced the

previous year eighty-six thousand five hundred and twenty-nine bushels, while all the rest of the State produced only eighteen thousand bushels.

Indian corn is not extensively grown in Aroostook county, but its cultivation seems steadily, rather than rapidly, on the increase. By careful selection of early seed, a fair crop is generally secured. As far north as number eleven, fifth range, I saw corn silked out at the end of July. Last year Mr. Bean of letter G, in this vicinity, raised fifty-one bushels of sound corn per acre. The yield is not usually above this, and the actual average probably below forty bushels.

Mr. Cushman, at Golden Ridge, (number three, in fifth range,) some fifty miles south of number eleven, informed me that he had grown at the rate of two hundred and twenty bushels of ears per acre. He had, when I was there, a very promising field of corn, which was planted more closely than I had ever before seen, viz: three feet by eighteen or twenty inches asunder, thus giving more than double the usual number of hills to the acre. Mr. Cushman is doubtless wise in endeavoring to adapt the distance between hills to the anticipated size of the plant, and to get the full benefit of a well prepared plot for corn; but four and a half or five square feet only to the hill, seemed rather close, even for small Canada corn, in Aroostook. I had the pleasure of meeting Mr. Cushman subsequently, at the State Fair in Bangor, early in October, and learned from him that an acre of this had been harvested, and the product proved to be two hundred and ten bushels of ears of sound corn—a very good crop for any where.

Messrs. Gerry, Cushman, and other residents of this vicinity, assured me that they deemed Indian corn a surer crop than wheat. The seed used, is partly the Canadian variety, and partly what is called there, the early Dutton, a twelve rowed sort, originally brought from Massachusetts, and gradually acclimated. By the census returns of 1850, it would appear that the crop of Indian corn exceeded that of wheat, by several thousand bushels; but there is doubtless some serious error in the figures.

**ROOTS.** Large crops of these are as easily grown, perhaps more so, as in any other parts of New England. Potatoes are excellent and abundant, the usual crop being from two to three hundred bushels, per acre. In some sections, very little or no injury has



ensued from disease, and it was estimated by several persons, that for ten years past, not over a quarter of the crop had ever been lost from the rot in any locality. Turnips to the amount of five hundred bushels to the acre, are grown with no labor beyond brushing in the seed on new land, and perhaps a little thinning out, no hoeing or weeding being bestowed. Much larger crops can be grown with additional labor and care. Carrots are highly esteemed, the crop, with fair treatment, varying from six hundred to twelve hundred bushels per acre. I learned of one crop of eight hundred and sixty-eight bushels, by actual measure, to the acre, where the rust had materially checked the growth. As in other sections of our State, root crops receive far less attention than they deserve.

GRASS. No better district for hay, grazing and dairying, can be found in New England, than here. Indeed, I have never seen better in Orange county, New York, nor any where else—and should a person accustomed to much richer pastures than are usual in New England or New York, tramp over some of these, with red clover well up to the knees, and a dense mat of honeysuckle under foot, (the pastures tolerably well stocked too,) he could scarcely fail to deem it a country of rare excellence for grazing and dairying. Nor can I conceive sufficient reason, why Aroostook butter\* and cheese, may not be profitably exported to large extent, and by the application of proper skill in manufacturing, be made to rival that of Orange county, and command as good a price. Whether it can or not, one thing is sure, a good name must first be established, for the little butter which Maine has sent abroad, has by no means an enviable reputation in Boston market, let the quality of some which is eaten at home, be what it may. As for cheese, Maine now buys hundreds of thousands of pounds annually, and so our farmers might command a sufficient market for a good article at home, for a long time to come.

The propensity to take off successive crops of grain, until the yield seriously diminishes, is so great, that little land is sown to grass until its fertility is very sensibly impaired; hence the low

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\*If my information be not at fault, a scant supply even for home consumption, has been produced hitherto. One gentleman assured me that for the public house, at number eleven, he had purchased in New Brunswick, butter by the half ton or more, at a time.

average yield of hay, which does not much exceed a ton per acre,—perhaps it may a little, while with better treatment, an average of two tons might be had just as easily. The reason alleged, or excuse offered for the practice was, that as it is, they have quite as much hay as they could cure, or store, or use, and more than this would be of no value.

Among the few exports from the Aroostook valley, may be named herds grass and clover seed. Last year, Mr. John Allen, near Presque Isle, offered for premium a crop of two thousand and twenty-four pounds clover seed, grown on seven acres, and which he sold at fifteen cents per pound. He stated the profit on the crop to be one hundred and sixty-three dollars sixty cents, or upwards of twenty-three dollars per acre. I heard of a crop upon ten acres, in another locality, of twenty-five hundred pounds. It is deemed very profitable when the heads “seed well,” but this is by no means sure always to occur. It is rarely cut for seed unless promising upwards of one hundred pounds per acre; and sometimes three hundred are realized. In 1850, six hundred and sixty-one bushels clover seed, or forty thousand pounds, and ten hundred and eighty bushels of other grass seeds, were grown in the county. Herds grass, or timothy, usually yields six or seven, and sometimes ten bushels of seed per acre. In one instance, I learned of one hundred and four bushels grown on ten acres.

**FRUIT.** Of the culture of fruit in Aroostook, it may be premature to speak with confidence; but the prospect is strongly in favor of ultimate success. There are a number of nurseries established, principally of the apple, and many trees have been planted out. In the village of Houlton I was told that little success had attended the planting of any other than the Siberian crab apple, which lived and bore well, but that a few miles out they succeeded tolerably well. Here, also, I saw plum trees of choice varieties which had borne abundant crops, quite too heavy indeed for their ultimate good. The appearance of the apple trees in this vicinity indicated a growth of wood too late to become well ripened and hard, and so unfit to withstand the severity of winter. The circumstance of the roots being for a large part of ordinary winters in a soil above the freezing point, and the tops, at the same time, in a much lower temperature, may also have had an injurious influence. On higher

lands, rocky knolls and side hills, especially in fifth range, I found orchards which bid fair to be productive and profitable. Mr. Elisha Brown of number six, in this range, has an orchard of some three hundred trees, many of them planted eight to twelve years, and most of which are succeeding finely. In his earlier attempts, he lost largely by grafting to Baldwin, Greening, Roxbury Russet, and other varieties of good repute further west, but which prove utterly unfit for this climate. Success in orchard culture here, will depend greatly upon a proper selection of varieties, and in this much help may be obtained from the experience of cultivators in the northern parts of Penobscot and Piscataquis counties, where also, some very promising seedlings have originated. It is highly probable that the sorts which in most parts of New England ripen in autumn, will here prove winter, or at least, early winter varieties. Mr. Cushman of Golden Ridge, informed me that he had received the first premium for apples at their Agricultural Fair held in October, on the Red Astrachan, such was its fine quality and good condition. This variety proves throughout Maine to be one of the hardiest, but in the western part of the State, I have never seen it in eating after August; and as with this, so probably with other early varieties, the period of maturity may be considerably later, and in some cases the quality improved, as it is proved to be with the Duchess of Oldenburg, another extremely hardy, early sort. Mr. Cushman's success has been such, that he proposes to plant at least two thousand apple trees on his farm, (with reference to its future division,) to graft them as soon after they attain suitable age, as he can decide in his own mind upon the most profitable varieties for leading sorts in their adaptation to his soil and climate. The treatment he proposes being somewhat original, may be stated. First cut down and burn the original growth; "hand-pile" the logs remaining sufficiently to allow the planting out of the apple trees, and seed down the land to clover at once. The clover to be neither mown or pastured, but left to decay on the ground, year after year. Three or four tons per acre every year, he thinks, will keep the ground in good heart, and what is more, secure the trees from the attacks of mice which are often troublesome on tilled and mown land, as they will hardly care to eat apple tree bark, or wood, while "living in clover," and with plenty of seed to fatten upon.

The smaller fruits, as currants, gooseberries, &c., &c., thrive perfectly well, and yield freely. Mr. Brown had a plantation of barberries which were quite flourishing. English gooseberries were entirely free from mildew, and so far as I could learn, this troublesome affection is entirely unknown in the eastern part of Washington county, and also in the adjoining Province of New Brunswick. It was not ascertained that grapes or pears had been tried. That there are among the early ripening grapes lately introduced to notice, or among the countless seedlings now on trial in all parts of the country, some which are both sufficiently early and hardy to succeed well any where in Maine, no doubt is entertained. Few among us now know the luxury of *good* and *ripe* grapes, or are aware of the impulse given to their culture in the last few years—of the progress which has been made, and the probability that all who will bestow the needful attention, can soon enjoy this delicious fruit. And that there are varieties of pears which will succeed in Aroostook, seems at least probable, from the fact that some are known to have grown well, and borne well, in a still higher latitude.

MARKETS. This is a matter of prime importance, and ever to be well considered in estimating the expediency or profit of production. Of what avail is it that lands be never so fertile, if crops, when grown, can find no remunerating sale?

It may be said that agriculture can *exist* without markets, for the laborer can be fed from his own products, and clothed in home manufactured flax and wool, also of his own growth; but such labor is for life, not for profit—a struggle for existence, and such agriculture cannot be deemed a distinct and desirable branch of industry.

“As a specific branch of industry, it begins as soon as a regular market for it is opened; that is to say, as soon as the industrial and commercial populations exceed a certain proportion, whether it be immediately on the spot or at a sufficiently moderate distance, with easy means of communication, so that the expenses of transit do not absorb the profits: it becomes more and more flourishing, as the market becomes greater and more approachable—that is, the nearer its vicinity to large towns or great centers of manufacture. In that case, the market suffices to create profits which rapidly increase capital, farming becomes more and more prosperous, and progresses towards its maximum.



“Some minds, judging more from appearances than reality, have looked upon commerce and manufactures as enemies and rivals to agriculture. This error cannot be too much combatted, as nothing is more hurtful to agricultural interests. In reality, the distinction between agriculture and manufactures is false: to bring the land into cultivation is also a manufacture, and the transport, the sale, and the purchase of agricultural produce is also a trade. Only this kind of manufacture and commerce being altogether of prime necessity, can dispense a little more with skill and capital than the others; but then they remain in a state of infancy, and when these two powerful aids are supplied, they become a hundred times more fruitful. Even admitting the distinction which usage puts between the terms, there can be no profitable agriculture without profitable manufactures. This is in some measure a mathematical axiom, for commerce and manufactures can alone abundantly provide agriculture with the two most powerful agents of production which exist, namely, markets and capital.

“It is of consequence, then, that our cultivators apprehend clearly the only means of enriching themselves, lest they hinder their own prosperity. Their opposition would not arrest the course of things, but would render it slow and tedious. All jealousy between agricultural and industrial and commercial interests, will only damage both. If you wish to encourage agriculture, develop manufactures and commerce, which multiply consumers; improve especially the means of communication which bring consumers and producers nearer to each other; the rest will necessarily follow. Commerce and manufactures bear the same relation to agriculture, as the cultivation of forage crops and multiplication of animals do to cereal production. At first they seem opposed to each other, but fundamentally there is such a strong connecting link between them, that the one cannot make any considerable progress without the other.”\*

. The only market now existing in Aroostook for ordinary agricultural productions, is that created by the lumbering operations. This is generally a good one to an extent sufficient to absorb the surplus which the settlers now tilling the soil have to dispose of; but it is by no means a uniform one, varying as it necessarily must, with the

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\* Lavergne's Rural Economy, pp. 152, 160, 167.

fluctuations of that interest (proverbially uncertain) which creates it. Viewed in another aspect, this market can hardly be deemed a particularly desirable one, inasmuch as the manure yielded by the hay, oats, &c., cannot be purchased by the farmer, and returned to the soil to maintain its original fertility. Neither can I deem it a reliable one, for even admitting that the demand for forest productions will be always and uniformly good, the timber crop itself, although it may not be all harvested in one year, nor ten, nor twenty, will not last always; and while it does, the market which it affords will be gradually receding from the tilled lands.

Suppose every township, as soon as stripped of its timber, to be settled with energetic, industrious farmers, and their fields presently to smile with bounteous harvests, what would they be worth? What would be the net proceeds of a thousand acres of oats, yielding a hundred bushels to the acre, if it costs a hundred and fifty miles cartage over an earth road, however good, to market them? *Perhaps a dime per bushel.*\* And this leads to the inquiry, whether with present facilities for exportation alone, farming can be extensively carried on in Aroostook at a profit; and I hesitate not to say in reply, that it can, *provided* the mode of procedure be adapted to the circumstances, and this, in my opinion, is only by adopting, in the main, low farming,† to wit, the growing of cattle and horses, and sheep

\* If the oats weigh thirty-four pounds to the bushel, and cartage be estimated at fifteen cents per ton per mile, it will cost thirty-eight and one-fourth cents per bushel to put them into market. If they sell at forty-five cents, the net return will be six and three-fourths cents; if at fifty, eleven and three-fourths cents per bushel.

† “ Farming may be called *high* or *low*, according as the farmer strives by dint of labor and capital to keep the land in the most fertile condition, and draw the highest income from it; or, as he tries with smaller means to arrive more gradually at the same result. In the one case, the course of the rotation is short, and manuring frequent and heavy: in the other, there are at all events more than four crops in the rotation, and a certain productiveness is even maintained without manuring at all. Hop culture, market gardening, and spade husbandry, illustrate the *highest* kind of farming, while grazing or sheep farming are of the *lowest*. The former is practised where labor and capital abound; the latter will be pursued under circumstances where labor and capital have for the time a high value as compared with land, or, in countries where the markets are remote, and the population limited and deficient in agricultural knowledge. The soil has little influence in the case, for some of the highest farming in England is carried on profitably on the poorest soil.

husbandry. Pity 'tis, that on so fertile a soil, a higher grade may not be as successfully pursued; but it is the part of prudence to be governed in our action by circumstances, never forgetting to control

Either one or the other system is good, that is, profitable according to circumstances: in the one case, the gross revenue may be great; in the other the net revenue may be the largest, on the whole."

The above quotation is from Dr. Robb's admirable lecture on agricultural progress in New Brunswick. What follows, though less pertinent to the point now in hand, is equally suggestive and interesting in connection with our general subject:

"In this country, high farming is little known as yet: in the old country it is extending every day. English examples are not, therefore, always the best for us, and English criticisms on our condition are not necessarily infallible. Much of what is written for England is in fact unsuitable here, and a cautious adaptation of English practices is required; for, after all, I may venture to say that farmers here are quite as anxious to be in good credit with their banker as they can be in England. In England they demand incessantly an increase of agricultural science; what we chiefly require here at present is *the diffusion of principles already established*. High farming ought always to be our aim here, but it must be taken up with care and judgment, and perhaps may not become general, until labor is more plenty, and railroads in active operation. In New Brunswick, a mixed system, or compromise between grain husbandry and pastoral husbandry, is the rule; that is, an indifferent alternation of crops is followed for six or seven years; after which, grass is cut or pastured for an equal period. Such is the practice which prevails most generally in the country, but, in numerous instances a shorter and better rotation is steadily and profitably pursued. Our first aim ought to be to learn to make or save manure enough, so as to shorten or do away with the long fallow, and restore fertility to our arable land in a shorter space of time than at present.

While acknowledging on the one hand, the great progress in agriculture which has of late years taken place in this respect, in some parts of the Province, I see again but little advancement in others; nevertheless, I am not disposed, as many are, lightly to disparage our new settlers, on account of the magnitude of their clearings and their comparative unproductiveness. It seems to be the result of necessity rather than of design. These clearings have been enlarged, not simply because the owner meditated a greater breadth of cropping, as previously stated, but because he was compelled to do so, inasmuch as he could get no more crops from the land which had been cultivated. Nay, How could he do so? He brought with him into the dark forest many years ago, we may suppose, only a wife as young as himself, a cow and a pig, an old horse, an axe, and a grindstone. Such were the first settlers; such were their agricultural implements and their farm stock. By a strong and willing arm, the forest was speedily cleared to the extent of a few acres, and the new settler got a little cash for all that he could spare of his first, best crops, from a lumber party in the neighborhood. Indeed, I believe he often hired out to them himself, and found the old camp life as jolly as ever. Sooth to say, most of us would have done the same. But, having no chance of buying manure, and having sold his hay and oats off the farm, he could have little manure upon it; and, having

those circumstances as fast and to such extent as may be within our power. I cannot doubt that a vigorous prosecution of dairy business and of wool growing, the yield from both which, on lands both cheap and good, will bear an export charge of one or two cents per pound, without destroying profit, or the growing of horses and lean cattle, possessing locomotive powers of their own, to take themselves to market, may be carried on to advantage. Very probable is it, or at least, so it seemed to me, that fat cattle might be produced, barreled, and find an Atlantic market via the St. John, at a cost enabling the producer successfully to compete with any section.

Such, in its leading features, is the more judicious mode of procedure, wherever land is abundant and cheap, bearing but small ratio to the value of labor, connected with distant markets. But to do even this to the best advantage, so as to reap a handsome profit, requires the outlay of considerable capital, notwithstanding the cheapness of land, first, to construct the needful buildings *comfortably* to house a large number of animals in winter, in order to save

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but poor accommodations as yet, the manure which was made had long ago yielded its tribute of nitrogen to the wind; while its phosphates and alkalies, borne away with the passing brook, bade good bye forever to our friend, who at the moment was too much interested in stream-driving to think of such trifles; nevertheless, that winter's work *paid* as well as the summer's had done. A poor chance enough for high farming and stall feeding, you will say, and I agree with you. Accordingly, our friend goes on cropping and chopping alternately, while he leaves the old fields to recover by a most tedious (but economical) process of fallow or pasturage. Thus he slowly progresses towards independence; and if he has not staid away too long from his farm, fiddling and stream-driving, and so forth, he finds himself at length the unquestioned lord of a large clearing, and with an ample inheritance for his children forever; that is, if they will only try to avail themselves of its proper productiveness. It is obvious, therefore, that in the first place, our clearings must be large, and their productiveness comparatively small; *and that from the nature of the case.* Those large clearings now await the application of skilled labor, and are ready to reward it.

Immigrants with money, who understand farming, and design to pursue it as a business, need not go through the process above described; they can almost always buy cleared land, including both meadow and upland, at a moderate price, or they can hire the country people to prepare the land for use. We therefore invite those whose health and strength is their chief capital, to go upon new land; while immigrants, possessed of a little ready money, and understanding of agriculture, are recommended to buy ready made farms; and by *manure and management*, restore to them fertility, and lay broad the foundations of comfort and independence for themselves and families, in all time to come."



food and turn them out in spring in a condition *duly to thrive* on their summer feed; next, to obtain the most desirable breeds, with which to commence the undertaking; buildings also, for storing a sufficiency of winter stores, by no means forgetting an abundant supply of roots, safely stored in well ventilated, yet warm cellars. That this might be done, and the operation yield a satisfactory profit, seems sure enough, but from whence will such come? Capitalists, or those possessing means to enable them to do this, can easily get a living where they now are, in all probability comfortably settled, and in the enjoyment of greater privileges than can be expected in a new country, so that after all, inducement seems but scanty to cause *such* to emigrate and "rough it in the bush."

In estimating the comparative advantages of emigration to the new lands of our own State, and to those of the great west, there are many considerations to be taken into account. Land may be had cheaply in either case, but cheaper here than there, in fact, almost for nothing, as the half dollar per acre, which the State asks, may be chiefly paid in making the settlers' own roads—roads which he would have to make for his own convenience, if not thus paid for by the State. But in going west, cheapness ends with the price of land. The settler may get enough at a dollar and a quarter per acre, *provided* he go far enough from roads and rivers to find such as is not already taken up, but house, barn and fences are as necessary as land, and when he proceeds to their erection, he finds timber can only be obtained at a high price, usually at considerable distance, often having to be carted several days journey. Other building materials, bricks, lime, stone, nails, in fact, all, bear very high rates. Labor, especially mechanical labor, is costly and scarce. These considerations alone, leaving out many others, neither few nor trifling, (as the scarcity of water and its bad quality, when obtained, the agues, prostrating fevers, etc.,) I found to have proved operative in deciding the question in the minds of some residents of Aroostook, who had visited the west for the purpose of personal examination and deliberate balancing of advantages. They came home, content to remain, *fully* satisfied of the superiority of a residence here, and congratulating themselves that they went first to look before selling out, and thus taking a step not so easily or cheaply recalled—satisfied, that although a man possessing abundant means, might there

obtain higher rates of interest and find more tempting opportunities for speculation—the man with little besides strong hands and a willing mind had a better prospect here.

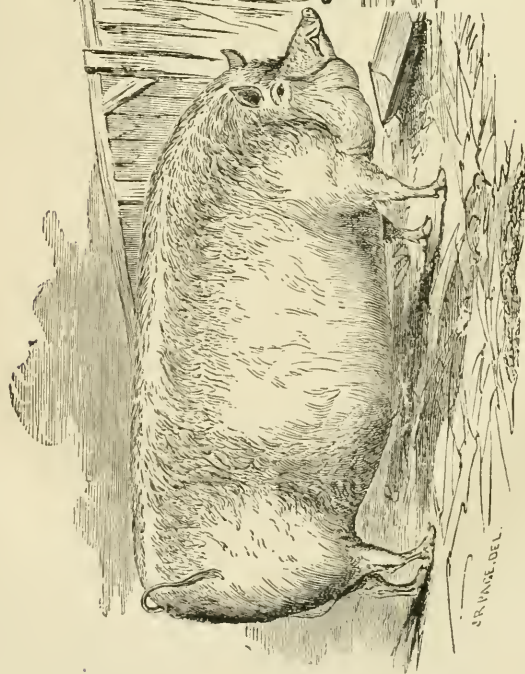
It may not be inappropriate to mention here some particulars regarding the practice of agriculture in Aroostook, as noticed while there. It is no more true of these lands, that they may be drawn upon any how and any long, without exhaustion, than of virgin soil elsewhere. Allusion has been made to repeated grain crops in immediate succession. This is a serious departure from judicious practice, and if persevered in, must result, as it has ever done in other places, in barrenness and exhaustion. It is comparatively easy to maintain fertility when once in possession, but how difficult to restore it when lost, thousands and millions of acres over the length and breadth of the land, and the struggles of their owners for a livelihood testify in most emphatic tones.

I saw nothing to prove true what rumor had said: that the settlers esteemed manure to be a nuisance, and carted it to the nearest stream to be rid of it, but with few exceptions, there was less care for its preservation than is desirable. In some instances gratifying evidence appeared that it was properly valued, and on the whole it seemed gaining in estimation, and that the settlers were gradually coming to a just appreciation of its value.

In the neighborhood of Presque Isle, there have been, through the exertions of members of the North Aroostook Agricultural Society, introductions of choice cattle, and a marked improvement has been the result. The Hereford and Durham blood prevails mostly in the crosses observed. Ayrshires were not known as such, but some cattle brought in from the neighboring Province of New Brunswick, and considered natives, bore strong evidence of an infusion of Ayrshire blood. These, including the Devon more lately introduced, are probably the best breeds yet proved for this climate, taking into consideration all their good qualities, and the absence of serious defects, all (except the Durhams, which require good feed and shelter,) being very hardy, easily kept, and valuable. The Ayrshire breed has been somewhat extensively introduced into New Brunswick. Mr. Samuel Gray, of Frederickton, brought with him from Ayrshire some years since, numbers of these to breed from for sale, and had, when I was there, a considerable herd of full blooded

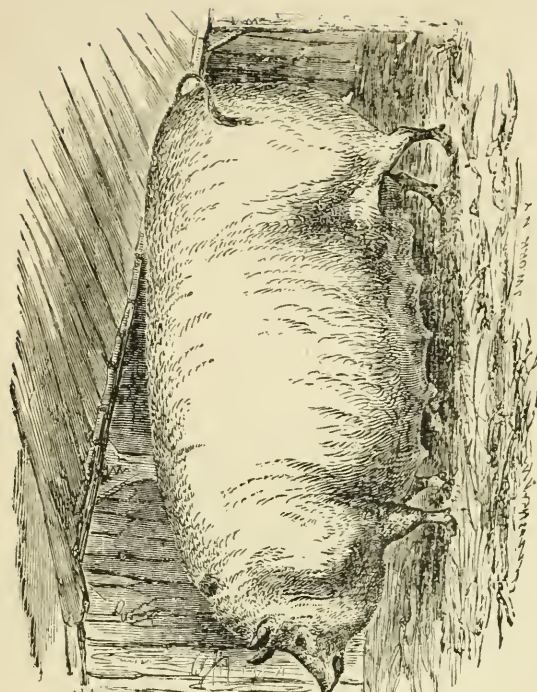


# SUFFOLKS.



**"LORD WENLOCK."**

"Lord Wenlock" was imported and "Scar" was bred by L. G. Morris. They won 1st prizes at all the Shows at which they were exhibited. viz: the New York State Show, and the Show of American Institute in the City of New York.



**"SCAR."**

animals, including many choice specimens. In other parts of Aroostook, I found no more attention paid to the selection of choice stock than prevails in some other counties in the State, and much less attention paid to stock-growing as a leading branch of agriculture, than it seemed to me there should be.

Sheep husbandry receives little attention in comparison with what might be profitably bestowed upon it. The sheep which I saw there would average decidedly better for mutton than those of the State at large, the flocks having been improved by admixtures from those of Mr. Perley, a well known extensive stockgrower at Woodstock, N. B., near Houlton—and who rears principally, if not wholly, the pure Leicester breed.

The most objectionable feature noticed in connection with the growth of domestic animals, was in regard to swine—these being both too few in number and too bad in quality. Some good hogs there are, others tolerable, but more prevalent were those too nearly resembling the landpikes. These were noticed in even greater purity in some of the more sparsely settled parts of New Brunswick, from whence they may probably have been derived—big-eared, long-legged, long-snouted, slab-sided, thick-skinned, large-boned, ravenous brutes, which look as if they might have originated in a cross between a jackass and an alligator, and from which it would be the height of imprudence for one to contract to furnish mess pork for less than two or three York shillings per pound; certainly, unless he had a term of years to do it in. That such neglect of swine culture should exist, is the more to be regretted, as considerable quantities of pork are annually imported into the county at large addition to first cost from the price paid for transportation. From the best information I could obtain, between eighteen and twenty-five hundred barrels are required every year, and sometimes more than this, as supplies for the lumbering operations;\* the quantity varying from year to year with the demand for timber. No one acquainted

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\* There was considerable hesitation among those best acquainted with this subject to make an estimate, but whenever attempted, either by judging what proportion the known quantity used by certain large operators in timber bore to the whole amount, or by the estimated amount of timber cut, and the known quantity required for each thousand tons, the result arrived at in every instance, was the same, viz: two thousand four hundred to three thousand barrels, in average years.



with the subject, of whom inquiry was made, reckoned the amount at less than fifteen hundred in any year, and most stated it to be from two to three thousand in ordinary seasons. So far as could be learned, nearly all of this was brought from abroad, while there can be no doubt whatever, that by judicious management, the whole of it could be grown on the spot, from the refuse of the dairy, with roots, and fattened on buckwheat, with perhaps a little corn, and yield a handsome profit. So good an opportunity of earning thirty to fifty thousand dollars per annum, should by no means be neglected.

ROADS, DISTANCES, &C.—*Means of Communication.* From Bangor northerly, there is now a railroad in operation to Oldtown and Milford, twelve miles;\* thence the traveled road follows the east bank of the Penobscot river as far as Mattawamkeag point, sixty-one miles from Bangor; thence in similar direction to the "Forks," at Molunkus, where it branches, the "Military road" extending in a northeasterly direction to Houlton, and northwardly thence to Presque Isle in the valley of the Aroostook.

From the "Forks" at Molunkus, the "Aroostook road" pursues a northerly course, passing through Benedicta, (a half township purchased by the Roman Catholic Bishop in Boston, some years since, and where were erected a church and a large building intended for a College,) Golden Ridge, Patten, (a border town of Penobscot county, and a very pleasant village, with many smiling farms and thrifty farmers,) townships numbers five, six, seven, eight, nine, Masardis, (number ten,) to number eleven, all in the fifth range. This last township is named on some maps Ashland, but the name has not been adopted by the inhabitants. It is the centre from which are fitted out most of the parties-for operations in timber. This road continues also in similar direction to Fort Kent, (forty-eight miles further,) which is on the northern boundary of the State, at the mouth of Fish river. From number eleven, (of fifth range, or *Aroostook*, the name of the post office here,) a road tends easterly in the valley of the Aroostook river to Presque Isle and Fort Fairfield, continued also to the mouth of the Aroostook and to Tobique, in New Brunswick. By these routes it is seventy-one miles from

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\* Another railroad has been surveyed, and some grading done upon it, from Bangor to Lincoln, about fifty miles north.

Bangor to the Forks at Molunkus; thence forty-four miles to Houlton, and forty-one more to Presque Isle. From the "Forks," by "Aroostook road," it is seventy-five miles to number eleven. From number eleven to Presque Isle, is twenty-four miles, and thirteen thence to Fort Fairfield, and six more to Tobique, N. B. Besides, these, which are the principal ones, there are minor roads diverging from various points, and often intersecting some of the choicest lands in this region. These roads vary materially in quality, parts of them, especially of the Military road, are very good, and as a whole, this is a much better one than the "Aroostook road," but none were esteemed to be any better than they should be, and are far from inviting in appearance to new comers, who have been accustomed to better. The passage of so many heavily laden teams at all seasons of the year, is a severe test for any road, and one which only a thoroughly macadamized track, or a plank road could withstand without serious injury. By those who settled early, and whose standard of comparison was the former condition of the same, or the present condition of others still worse, the above named were all spoken of as "good."

By the above mentioned routes, goods are now carried from Bangor to Presque Isle, one hundred and fifty-five miles, at about thirty dollars per ton, and from Bangor to number eleven, one hundred and forty-five miles, by the Aroostook road, at thirty-five to forty dollars per ton. Such rates add so materially to the cost of supplies brought thither, that it is no wonder if a cheaper mode of communication be sought. This, the easterly ranges of townships enjoy for so much of the year as the river St. John is navigable, which may average about five months. Freight is brought from the city of St. John to Tobique, within six miles of Fort Fairfield, at a rate varying from eight to eighteen dollars per ton; by steam to Fredericton, ninety miles, at all times when the river is not closed by ice, and when the depth of water serves, also by steam to Tobique, otherwise by tow boats, from Fredericton or Woodstock, up. From Tobique to Presque Isle, is eighteen miles, and twenty-four miles thence to number eleven, and here I was assured by the traders and lumbermen, that at the present time, not one-twentieth part of the goods sold at, or of the supplies distributed from, this point, were brought thither from Bangor, whereas, formerly, nearly the whole were.

They now procure them via the St. John, and including some forty miles or more of land carriage over a hard road, at a cost for freight usually of about one-half the charge from Bangor.

An inspection of the map of this region will show that its natural channel for communication is toward, and through New Brunswick; and it would appear that the artificial channels which we have made to connect it with other sections of our own State, have not proved good enough to compete successfully with the St. John. As traffic ever seeks the most profitable channel as naturally as water seeks its level, we cannot wonder, however much we may regret, that it has nearly all passed into the Province; nor can we wonder more to find that the social intercourse and sympathies of the people have followed in the same direction, and that, except in the matter of jurisdiction, this vast and fertile region is (almost, if not quite,) as really annexed to New Brunswick, as if so stipulated in the treaty of 1842.

The boundary line never here a practically serious obstacle to interchange of commodities, has, since the reciprocity treaty went into operation, been little more than a nominal one; and the ease and intimacy of communication will probably soon be greatly increased by means of the St. Andrews and Quebec Railroad, now partially constructed and vigorously prosecuted, and which it is anticipated may be open for use as far as Woodstock or Richmond, near Houlton, in the course of another year. The southern terminus of this road, St. Andrews, lies just opposite Robbinston, midway between Eastport and Calais, and the track, when completed, will for some distance run close to our border.

Under date of November 1, 1857, a correspondent writing from Fort Fairfield, says:

“The St. Andrews and Quebec Railroad is now opened *forty miles*; it will be opened by next September to Richmond and Woodstock, and be at Richmond, six miles from Houlton. When completed, it will run along near the boundary line the whole length of the east side of Aroostook county, and will be very convenient of access from the present settled portions of the county.”

Is there any other way in which Aroostook can be saved to Maine, except either to “annex” New Brunswick, or underbid her in the matter of facilities for communication?

The idea of a satisfactory connection with the Atlantic seaboard,



connected with a just appreciation of the great results which would flow therefrom, is by no means a novel one, but has been strongly urged in years past by far-seeing men; for example, in the report of Hon. F. L. Hamlin as Land Agent in 1839, we have the following:

“Upon a glance at the public lands, it will be seen that the fertile valley of the St. John river extends through the whole breadth of the northern part of the State, and with the Aroostook valley, includes about one-third part of our whole territory. The natural outlet of this country for trade and intercourse is through the Province of New Brunswick.

To connect this region with the Atlantic seaboard, within the limits of our own State, it will be seen that the topography of the country distinctly marks out two great avenues of communication through the valleys of the Kennebec and Penobscot.

That our seaboard will be connected with the St. John waters, sooner or later, by these two routes, either by canal or railroad, or both in part, there can be no doubt in the mind of any one who has watched the progress of internal improvements in other states, who considers the feasibility of opening these communications, and of their great practical importance in diverting the trade of this region from a foreign market, and increasing the wealth and population not only of the St. John valley, but of the whole State. The development of the agricultural resources of this valley would give a sustaining power to our commercial capital on the seaboard, a healthy impulse to manufactories, and would not fail in advancing the State at once to the position in the Federal Union, to which her natural advantages so justly entitle her.

It is evident that the citizens of this State have not heretofore been fully impressed of the great value of our public domain. The golden opportunity which occurred at the time of the separation, for Maine to acquire of Massachusetts her interests in the public lands, was suffered to pass unsecured by us, and the appropriations heretofore made for the construction of roads towards the interior, and for public improvements, seem to have been reluctantly yielded, instead of being the spontaneous acts of the whole Legislature, and as indicating a spirit and feeling worthy of our great resources. So long as the public mind is possessed of doubts and fears, and misgivings, and until there is manifest an honest feeling of State pride and a just confidence in our own means and resources, it will be in vain to undertake any public work of magnitude with any rational hope of success.

I am aware that serious objections are entertained by many against all works of internal improvement, when undertaken by the State, and where it becomes necessary to borrow money. It cannot, however, be forgotten that such objections have been raised in other states, particularly in New York and Pennsylvania. When the former State commenced upon the great work of the

Eric canal, it was denounced as the 'big ditch' that would engulf the fortunes of the State, and men high in public estimation pronounced the scheme to be 'visionary and chimerical, and at least one hundred years in advance of the age.' The result has shown how much this portion of the community has been mistaken, and I can entertain no doubt that a judicious system of public works on the part of the State, having reference to the settlement and cultivation of the public lands, would, in the end, be as signally successful as have been the public works in other states."

In looking back over the eighteen years since the above was penned, who can possibly doubt, to-day, that had the above suggestion of a railroad\* from the Aroostook to the Penobscot met with public favor, and been carried out at an early day, that, whatever might have been its success merely in the light of a pecuniary investment, the public domain would have greatly increased in value, and the whole State would have gained in population, wealth and power, with a persistence and rapidity to which we are now utter strangers.

DEVELOPMENT—PAST AND PROSPECTIVE. At the time of the separation of Maine from Massachusetts, a large portion of our territory was an unexplored wilderness. Nearly a quarter part was a public domain, and held by compact, in joint ownership, by both States. At this time, very little importance was attached to timber lands, as such, and the chief value of the territory was supposed to consist in the inducements it held out for agricultural purposes. But a short time elapsed, however, before it was discovered to contain great wealth of forest, with streams sufficient to render the same available at an early day. An impression somehow rapidly obtained in the public mind, that timber, and not agriculture, was the great interest here involved. Large tracts speedily passed into the hands of speculators, whose only object was to realize therefrom the greatest amount of money, by stripping them of timber, and not to have them settled by an industrious and enterprising population. The evil influence of a proprietary system upon the interests of agriculture, is both too great and too glaring, to require discussion here.

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\* Perhaps for no desirable road in New England is there a favorable route more distinctly marked by nature, than for this, viz: by the east bank of the Penobscot from Bangor to Mattawamkeag Point, thence toward the Forks of the Mattawamkeag, near where the Baskaheagan comes in, thence by a natural valley to near the origin of Presque Isle river, and following its valley to near its junction with the Aroostook.

To what extent the wishes or efforts of proprietors have, in fact, availed to discourage settlement, it is not easy to determine; but as we know self-interest to be a governing motive to large extent, and their aim to be profit from timber only, that settlements would ere long result in increase of taxation for constructing roads and other needful purposes, and of liability to the accidental destruction of timber from the fires necessary for clearing lands, we may safely conclude that they exercised no small influence.

It is true, also, that the idea was industriously circulated that "timber lands" were both very distinct in character and wide asunder in locality from "settling lands," whereas the fact is now well known to be, that while some timber lands are ineligible for settling purposes, the very best of settling lands are those, which among their mixed growth, contain the choicest and most valuable timber.

It will also be borne in mind, that prior to the treaty of Washington, negotiated A. D. 1842, the ownership and jurisdiction of a considerable part of the northern portion of Maine, including nearly all of what now constitutes the county of Aroostook, was in dispute, and a subject of controversy between the government of the United States and that of Great Britain. Such controversy must necessarily, of itself alone, exercise a very retarding influence on settlement, and we accordingly find, that, prior to the treaty adjustment, settlements within its present limits were comparatively few, and mostly confined to the banks of the St. John, and consisted in large proportion of Acadian refugees and French Canadians.

The first decided and efficient move towards the development of this region, was in 1838, when Dr. E. Holmes, under direction of the Board of Internal Improvements, then recently established, with a corps of assistants, made an exploration and survey of the Aroostook valley, with particular reference to the feasibility of establishing water communication between the tributaries of the Penobscot and St. John rivers, but including also its agricultural capabilities and general topography. The valuable report which he made the next spring, together with those of Dr. Jackson, who at the same time was engaged in the geological survey of the State, afforded the first reliable information given to the public of the character and resources of this district, and attracted general and favorable attention.

There seemed at this time a strong probability that Maine was speedily to become a point of attraction for agricultural immigration. Shortly after this, the border troubles broke out, sometimes called the "Aroostook war," during the continuance of which, large numbers of our citizens visited it, in the capacity of "civil posse," or otherwise; some of whom eventually settled down upon the soil; and those who returned, spread a good report of it; and on the conclusion of the treaty in 1842, the promise of speedy settlement was more flattering than ever before. How has it been fulfilled? In 1840, the census returns state the population of Aroostook county to be nine thousand four hundred and thirteen, from which, if we deduct eighteen hundred and seventy-six as the number given of those residing in that part of Madawaska north of the St. John, and to which the United States relinquished claim by the treaty, we have seven thousand five hundred and thirty-seven as then residing within its present boundaries. Ten years subsequently, including all attracted thither by the circumstances above referred to, we find the population to be only twelve thousand five hundred and twenty-nine.\* In what proportion it has increased since then, there are no means of ascertaining with precision; but the opinion of those best informed, of whom inquiry was made, was, that in the seven years since, there may have been added three thousand or thirty-five hundred inhabitants—perhaps five hundred per annum. This would show that the population had about doubled in twenty years. At such rate of increase, when will its capabilities be developed? It may not be practicable to make an accurate estimate of what these are; but leaving out of account its mineral resources, its water power, standing timber, and all else, let us attempt a rude approximation to an estimate of the agricultural capabilities of a part.

In that portion to which the foregoing remarks are confined, say a third of the whole county, there are not far from a million and a half of acres. To be moderate in our estimate of its natural fertility, we will assume that it is capable of yielding ten bushels of wheat, or thirty of oats, or a ton and a half of hay per acre, supposing

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\* The remarks on page thirteen in regard to frosts in the unfavorable seasons, from 1842 to 1846, will suggest one active cause in preventing more rapid settlement at that time. Since then, comparatively little has been done toward bringing these lands to the notice of the public.

these to be nearly equivalent the one to the other. We will also assume that each individual of its population, including men, women and children, require for sustenance fifteen bushels of wheat, or forty-five bushels of oats, or the equivalent of either in other forms of human food. We have then, here, the means of producing sustenance for a million of inhabitants; a number considerably larger than the whole fifteen counties in the State contain at the present time. In this calculation, it is true, no deduction has been made for the necessary fuel, nor for the maintenance of domestic animals, a portion of whose consumption would not be returned in meat, dairy products, or other form of human food; but after making all due allowance for these or other matters which should properly be subtracted, a vast and almost astounding amount of capabilities remain.

What shall be done to develop them? This is a question for the legislators of the State charged with care for its best interests, to decide; and it is one which may well engage your earnest and thoughtful attention. Without intruding any opinion, it may be admissible for me to suggest, that, preliminary to its solution, it would be pertinent to inquire why they have not been developed more rapidly hitherto? There they have lain for many years as good as now, and during these years large numbers of our citizens have left us and gone thousands of miles to less healthy climes, and settled down to cultivate no better soil.

The State has not only been willing all the while, that they should be occupied, but it has been a cherished policy for many years, to aid and encourage their rapid settlement. To the truth of this, the enactments annually made, for years past, aimed at this result, (however small the success which has attended them,) bear ample testimony. So too, and emphatically, does the large purchase of lands made a few years since of Massachusetts, and for which the State credit was pledged, in order that they might be distributed among actual settlers at a merely nominal price.

What have been the obstacles hitherto? This inquiry was put to the settlers on every fitting occasion, and received a uniform reply—"we lack facilities of communication—we are virtually out of the world—nobody knows of us—nobody cares for us—we are few, and cannot build roads alone. The State is largely owner of the lands, and the roads she has built are inadequate, besides being always out



of repair, and for these even, you people west of us oppose every appropriation made. Give us a railroad, and Aroostook will speedily become as a garden." Of this feeling of isolation, I may here remark that it is evidently no sham, but a reality, and unconsciously betrayed in many ways, even in the most casual remarks or inquiries; as, "you are from *outside*, I presume;" "when did you come *in*?" &c.

It is very possible that you, viewing the subject from a different stand point, and bringing to its examination the analysis of statesmen, may be able to look deeper and to discover causes less patent and obvious to them, why progress hitherto has been so slow, and not merely in connexion with this comparatively small fraction of our territory, but with regard to the State at large. Into other sister States there has poured an unceasing tide of population from abroad, during the very years in which we have scarcely held our natural increase. May there not be something radically defective in a policy, which, with all our acknowledged resources, has thus resulted, and is there not a probability that a broader and more liberal policy, one which shall be equally removed from any just imputation of heedlessness or imprudence on the one hand and of the torpor of ultra conservatism on the other, may produce a healthy, active and permanent improvement?

Pertinent also, as preliminary to its solution, may be the inquiry, what has been done effectively in other similar cases to induce rapid sale and settlement? It is believed that examination will show that in all such cases, facility of communication is the first point, an indispensable requisite, and in this age, if there be none furnished by nature sufficient to float a steamboat, nothing short of an iron rail will suffice. Who would expect rapid settlement of lands, be their fertility what it may, which are located neither in the vicinity of navigable water, nor within fifty miles of a railway?

Next in the list of successful means, may be found some efficient agency to diffuse reliable information regarding the fertility of soil, character and proximity of markets and all other inducements to purchase for settlement; perhaps a hint might be obtained from the operations of other States who appoint commissioners of immigration or of land companies who employ agents. The men thus engaged, leave no means untried to accomplish their aim. The press is put

under contribution—personal effort is plentiful and earnest. They do not fold their hands and wait for immigrants to come, but push outwards in every direction. A few weeks since, I received a note from an agent of the Illinois Central Railroad Company, inquiring the time and place of holding the county agricultural exhibitions in Maine. He did not state his object, but who doubts that he intended to avail himself of every gathering, to advertise the lands held by this company, to distribute broadcast among our citizens, pamphlets setting forth golden prospects to emigrants. Who that attended the late State Fair at Bangor, could have failed to observe the huge boxes, filled with pamphlets, for gratuitous distribution, piled up near the entrance to the grounds, or to have one of them offered him? Through tickets are provided, and for sale at every depot, and the walls of each, placarded by showy hand bills. All this, and more is done, not only here, but abroad. Documents are scattered with unsparing hand, in every hamlet in Europe; arrangements are made with emigrant lines, and every man, woman and child, who can raise the passage money, is taken by the hand and ticketed through.

It is hoped and believed that the time is not far distant, when regular lines of passenger ships will ply to and from one or more of our spacious and unequalled harbors and Europe. Is it both inexpedient and impolitic for us to avail ourselves of agencies which have proved so signally successful? Should the claims of our soil to consideration be utterly ignored, go by default, for lack of simply and honestly making known what they are?

“As land is the great capital of our State, it is evident that it is population alone that can stamp a value upon it, and lay the foundation for agricultural improvement. It is population also that will develop our dormant resources, and give us rank and power in the Federal Union.”\*

The remark was made at the outset, that one of the noticeable signs of the times was, a partial staying of the tide of emigration from Maine westward, which has prevailed so largely in years past. True, it is suspended in a measure, but the disposition which brought it about remains. As a people, we Yankees have a peculiar propensity

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\* Land Agent's Report for 1839.

this way; instead of the inborn love of birthplace, and strength of early association and local attachments, which are found so strongly developed in some peoples, we possess an inborn restlessness. It has been said that the impulse which sent our fathers across the Atlantic has grown with our growth and strengthened with our strength, and this it is which is pushing us westward still. But this can hardly be deemed a correct statement of the fact. The impulse which brought our fathers here, was a desire to avoid tyrannical fettering of conscience, and improper restraint of that liberty of action and freedom of thought which is the God-given heritage of every man. These we enjoy fully, at the east as fully as at the west. Let us look farther. Is it not rather a spirit of enterprise, an activity, an energy which can only be satisfied by subduing, conquering, achieving something, somewhere? a spirit which leads to great practical results in every other direction not less than in emigration westward?

Farmers' sons have left us largely; why? The sons see what the father's arm hath wrought—the forests felled, and in their place bounteous harvests. There is tradition of a log-house—possibly the elder sons have some recollections of it—but in its place is now a fine dwelling, filled with all comforts and not a few luxuries. The soil, it is true, having been somewhat imprudently taxed, begins to show signs of giving out; the crops gradually growing less; and it seems to require a different mode of treatment—something or other, they don't know exactly what, and to ascertain what, requires *patient labor and study* which are not so much to their taste as muscular exertion connected with novel adventure; but notwithstanding which, the old homestead has a large market value compared with what it had on the day when the father went on to it, axe in hand; great results have been achieved; and as the tale of Robinson Crusoe has turned the face of many a lad seaward, to buffet billows and find a watery grave, so fireside tales send farmers' boys to endure the hardships of a settler's life, and to reap his rewards. Thousands such we have among us, to-day. They will go somewhere; and provided they can find their proper sphere, and an ample scope for pent-up powers, connected with prospect of success, they would as lief go east as west. Maine is big enough to give every such one a new farm for a long time to come.



Are there not also among us, numbers of those who, feeling with terrible severity the late reverses in commercial and manufacturing pursuits, turn anxiously to the soil, and would gladly invest the remnant of property left them, in a narrow axe, and settle down upon a goodly lot in the public domain, which promises with a degree of certainty of fulfilment which commerce and manufactures cannot do, even in their palmiest days, a comfortable support and sturdy independence for themselves and their children, forever? Such may be assured, that although neither health, energy, nor a determination to succeed, can safely be dispensed with, nor a willingness to encounter privation of many of the conveniences which abound in our cities and large manufacturing villages, there is a wide difference between the inconveniences and privations of him who goes now, and what was experienced years ago by those who went earlier. Black flies and musquitoes are not extinct as yet, it is true, but the roads, if not just what could be wished, are, by no means what they once were, nor is the mill, the school-house, and the church, so rare as formerly.

It might do none of us any harm to bring to mind oftener than we have been accustomed to do of late years, the trials and arduous labors of the pioneers of our State, and I accordingly insert here a quotation or two as illustrative not only of what these were, but also of the actual progress which has attended their efforts. The following is from a communication lately received from one of the early settlers of Penobscot county :

“DEAR SIR: Your circular requesting agricultural statistics from me, duly came to hand. In reply, I would say, that I am an uneducated man; that I seldom, if ever, put my ideas and observations on paper for the perusal of others, and shall not probably be able to give you much information that will be of interest. Suffice it to say, that I have already lived to the age commonly allotted man, viz., seventy years. I was born in Little Compton, R. I., in August, 1786. In 1788, my father moved from Rhode Island to the town of Union in this State.

After we left the vessel on Georges river, our only means of conveyance was a simple boat, known as a ‘Dug-out,’ not much like the steamboats of modern days. We landed by the side of Seventree Pond. At this time the only roads were the rivers and ponds, and the only carriage the *Dug-out*. There were a few little huts scattered about on the margins of the streams. I remember well the hut that my father put up, with a poplar log with notches erected for stairs. The first of our clearings were sown to rye. Corn on the burn was

but little known; what was planted was called 'lazy corn.' When they planted on the plow, the custom was to harrow three times, and hill it up, the higher the better, to keep the wind from blowing it over. We got along in this manner without making much improvement, until the *hard times* (consequent on the laying of the embargo, and the war of 1812,) was upon us, at which time all the wages I could command was seven or eight dollars per month. I resolved to get me a piece of land and make myself a farm. About this time I chose me a helpmeet. I suppose the young men will want to know what kind of a one I got. I will tell them: I selected one that knew how, and was not afraid of work, and to this day I have not regretted it. I had heard of Exeter, situated sixty or seventy miles northeast of us, and in June, 1813, in company with another young man, I took my fowling-piece in hand and started in search for said Exeter. We found land that suited, but were poor and had to buy on credit. I went into the woods about one and a quarter miles from any inhabitants and put up a camp with a shed-roof, split some basswood logs for a floor, built a chimney of stone and coated with clay. In May, 1814, I moved in; had covered the roof with boards, and battened with cedar splits. We had not been there long when there came a heavy shower; it came in torrents upon us, and the only place we had to keep our bed dry, was to put it under the table.

I took my axe and cut an elm, from which I took the bark and covered our camp, and we lived under it a long time. I found here and there a person with his log hut covered with long shingles and bark. We had no roads, no carriages, nor any market. If there were articles that we must have, we had to go to Bangor, twenty miles, either on foot or on horseback after them. It took two and sometimes three days.

We had farms to make, and buildings for the farm; we had also county buildings and houses of worship to build and pay for.

Those sons of toil that have been laboring beside me for years, who had ready means to pay for their land, have for the most part made their 'pile.' I consider our roads and buildings now, as second to none in any country place I am acquainted with.

Our town has the appearance of thrift; instead of the 'Dug-out,' we have railroads and steamboats; instead of log huts we have good painted houses. On our principal roads stages run daily," &c.

The next quotation is from an address delivered before the North Aroostook Agricultural Society, some years ago, by Rev. E. Knight of Maple Grove, (in Letter D, of first range, and near Fort Fairfield.) It will be found, in part, descriptive of that vicinity, which is probably as attractive as any section of the county:

"Most heartily do I congratulate you upon the fertility of your soil, upon the various resources you enjoy, upon your past success, and upon your future prospects. In comparing this with other portions of New England, I have no

desire to exalt one or degrade the other. I wish to correct the erroneous views which exist in reference to this favored portion of our State, and to remind you that the lines have fallen to you in pleasant places, that with cheerful hearts, and willing hands, you may meet the unfinished task that lies before you.

The valley of the Aroostook is not, as many suppose, a narrow strip of land, upon either side of this important tributary to the St. John, hemmed in by lofty mountains or barren hills. On the contrary, we have a wide spreading country, neither mountainous nor hilly, with a surface generally undulating, interspersed here and there with a narrow swamp of ever-verdant cedar, not unfrequently diversified with the more stately tamarack. As every portion of this extended valley is similar in its general aspect, so also is there an uncommon uniformity in the productive power of the soil. And without fear of contradiction, I assert that it is more fertile than any other county in New England. The reports of this society show that our soil, without the addition of any fertilizer, is capable of producing forty bushels of wheat to the acre, and of oats more than one hundred. The other cereal grains are also produced in corresponding abundance, with the single exception of Indian corn. Even with this, many have met with fair success, some growing forty, some sixty, and some eighty bushels to the acre. But whether corn will ever be, with us, a safe and profitable crop, is in my opinion a matter of uncertainty. The potato crop, naturally abundant and of superior quality, has suffered from that mysterious blight, the potato rot, as it has in other portions of our State and country. As yet, compared with other portions of the potato-growing world, we have escaped almost uninjured by this fell destroyer.

Our soil, almost free from stone, and easy of cultivation, is well adapted to the culture of other esculent roots. Various kinds of turnips, beets, and carrots, have been no mean agents in augmenting the farmer's wealth.

The hay and grazing crop, the chief production of New England, that from which nine-tenths of all her agriculturists derive their greatest profits, is not more partial to any portion of the eastern States, unless it has been pampered by a higher state of cultivation.

In our northern climate we do not expect every advantage of Southern New England; yet with judicious management, the cereal grains, with a single exception, do not fail to reward the laborer's toil. If we are more exposed to untimely frosts, we are more secure from the intrusion of the insect tribes, and the drought of summer; and hence, with proper care, I consider a crop in North Aroostook, as certain as in any portion of the eastern or northern States.

But let us turn from the natural resources of the country, and inquire what has been done by the first settlers of this infant community. When I reflect, that within the last ten or twelve years, nearly all of them, with little or no property, have settled upon lands covered by a dense forest, and that by the unremitting toil of their own unaided hands, they have sustained families they loved, changed the wilderness to a fruitful field, erected dwellings, and

built giant barns wherein to stow their bounteous harvests, I venerate the self-denying enterprise that enabled them to overcome the obstacles inseparably connected with the settlement of a new country. This may seem like an over-drawn picture, yet it is the brief history of the mass, and not of a few, as many who are now present can bear me witness. In this region, few indeed are the men who have given their energies to agricultural pursuits for eight or ten years, and have not risen from poverty to a competence, or increased the wealth they at first possessed. I was bred in a new country, and have ever delighted in tracing the early history of the different communities in which I have resided, but I never before met with an instance where so little wealth was brought into a country by the first settlers, or where so large a portion of them have, so soon, secured for themselves, such a desirable competence.

But think not that these blessings have been obtained without privations and toil. I love to turn back the wheels of time, and gaze upon this valley when only here and there an opening was to be seen in our primitive forests. As the vision opens before me, I seek not thrilling incidents, nor hair breadth escapes from the most ferocious of wild beasts. I love to dwell upon the realities of every day life. Here, I perceive two men, guided for miles by a spotted line, cheerfully bearing to their wild homes, the half barrel of pork, that had cost them twenty days of toil. Here, I behold a man bowed by the weight of his burden, as he leaves a beautiful river, and penetrates the dark forest. For two successive days has he traveled, by land and water, that he might get the precious grain, the first fruits of his own soil, crushed and restored to his expectant family. For four miles must he yet wend his way along the uneven foot path, ere he reaches the abode of his loved ones. Yonder the cooling beverage is borne from the limpid spring, in a rude vessel hewn from the solid wood, for in that family a pail is a luxury they do not enjoy. In that opening resides a toil-worn family that has subsisted for weeks upon potatoes seasoned only with salt.

But why dwell I upon trials and privations? These are common in every community; with *you*, fellow citizens, that day is past; the fruits of your labors are to be seen on every side, and want with measured step, is rapidly fleeing from your borders. The remembrance of former days will enable us to contrast the present with the past, and furnish bright anticipations of a prosperous future."

Below are added several communications which were received in reply to a circular of inquiries issued and distributed throughout the State last spring, and which, besides affording some additional items of information, may be of interest, as showing the degree of progress made, the prevailing practice, and tenor of feeling on the part of the settlers at the present time :

FORT FAIRFIELD, November 1, 1857.

DEAR SIR : In answer to some of your inquiries, I would say that the number of farmers in this vicinity has, in my estimation, increased fifty per cent. within five years past. I think the income realized from capital invested in farming operations is twenty per cent.

Average yield of hay, one and a half tons per acre. The crop can be increased fifty per cent. by plowing and manuring. We seed our grass land wholly in spring, from 20th April to 1st of June. Buckwheat is the best grain to seed with.

But few full blooded animals have been introduced as yet, although there is a large mixture of English blood in our stock. The Hereford and Durham, principally.

Average cost of raising a horse to four years old, is about sixty dollars, and the average value at that age is one hundred dollars. The cost of raising neat cattle to four years old, will average about twenty-five dollars, and their value at that age will average about forty dollars.

The varieties of seed which have succeeded best, are white bearded wheat, Russia oats, two rowed barley, and rough buckwheat. Our earliest sowing is about 25th of April, on an average of years, and the latest plowing, middle of November.

We generally feed from winter stores about six months; but as pastures keep good until late in the fall, and do not dry up in summer, we are not obliged to feed any thing to our stock while at pasture, as is the custom in Massachusetts and other places.

I have answered your inquiries as well as circumstances will admit. Our country is too new and our system of agriculture too imperfectly developed to answer them all fully.

Yours, &c.,

B. CUMMINGS.

GOLDEN RIDGE PLANTATION, }  
(No. 3, 5th Range,) July 10, 1857. }

DEAR SIR : In reply to your circular of inquiries, I send you a few answers, hastily written in the intervals of my daily toil, and trust you will excuse the many imperfections.

So far as this town is concerned, I should say the increase of farmers is about ten per cent., for the last five years, not by immigration, that being about equal to what has gone out, but by natural increase. As for the income which is



realized, I can give no information. Some make rapid advance, but a large proportion, I am sorry to say, depend on other sources, to the neglect of their farms. Of course we have nothing established in relation to a rotation of crops. On such farms as have been partly plowed, the average of hay, is one ton per acre; on those which have nothing done, and the hay sold off, it would fall below, and others, well treated, yield two, two and a half and even three tons. On the whole, there has been no increase of late years. My method to increase the crop, (in old fields,) would be to let the grass grow without feeding, till the last of June; turn it under with the plow; harrow thoroughly, soon after haying; cross plow in October; harrow the succeeding spring as soon as dry. At a proper time sow down to wheat and grass seed; then roll to smooth the surface. In a fair season the wheat would cover expense, while the hay would probably be increased three or four fold.

With regard to the average quantity of milk per cow, and of butter and cheese, I am unable to answer definitely. Some of the dairies in this town, and generally in number two, (called *Benedicta*,) and which is settled with Irish, are managed well and made profitable; while I am sorry to say that many of the Yankees of number three, with an equal number of cows, are butter buyers. From my own experience, I should judge that a good lot of cows properly managed on good hay and pasturage, would average two hundred pounds of butter and fifty of cheese, per annum. I have a cow four years old, which calved the first of October last, that made one hundred and ten pounds of butter from that time to the first of April, five months, and raised the calf. We sold eighty pounds at twenty cents per pound. The calf drank its milk, probably half new for the first four weeks, after this, wholly skimmed, with meal and water, scalded. I raise all my calves in the same way; prefer oat meal in small quantity at first, and increase. This calf is now worth twelve dollars. Same cow yielded, the last week in June, eight pounds of butter; the weather was very warm.

Cost of raising a colt, to the age of three years, (including pay for the foal,) about fifty dollars; not many sold at this age, except a fancy one, which will command from one hundred to one hundred and fifty dollars; twenty-five dollars more may be added to the cost at four years old; average value, one hundred and twelve dollars. From four to five, they may be used nearly or quite enough to pay the keeping; average value, at least one hundred and twenty-five dollars.

Cost of neat cattle, at one year old, twelve dollars; average value ten dollars; at two years old, twenty dollars; average value twenty dollars; at three years old, thirty-five dollars; average value thirty dollars; at four years old, fifty dollars; average value, if steers, seventy-five dollars; if a cow, probably she has her second calf, and if good, she may have reduced her keeping twenty dollars; average value twenty dollars. At five years old, if oxen, the labor of the last year; properly employed, will pay for keeping, leaving the cost for raising, fifty dollars; average value one hundred dollars; if a cow, probably she has reduced her keeping twenty dollars, bringing the cost to ten



dollars; average value twenty-three dollars. In my judgment, twenty-five per cent. at least, may be saved in the present cost of feeding cattle, by providing more comfortable and warmer stables.

The cost of growing and housing corn, wheat and other grains, I am unable to answer definitely. This year I intend to keep debt and credit, hoping others will do the same, so that we may in future, give the desired information. All the varieties of grain can be raised here in abundance, as cheap as elsewhere, with as good a market as can be found in the United States. Wheat, the white bald, and a bearded kind called the Madawaska or Kimball wheat, and the Dutton corn, have succeeded here as well as any. We have different kinds of oats and barley, all of which yield abundantly. Rye, but little raised, although it does well. The cost of growing and storing the carrot, beet and turnip crop, I am unable to answer. They yield abundantly in this section.

Instead of exhausting our lands still further, we ought to keep the leaks well stopped in the barn and hog yard, keep them well supplied with vegetable matter, muck, sink water, suds and slops from the house; take care of the hen manure and privy; look well to the compost heap; have it understood that time is money, which should be employed systematically; by thus doing we shall never be subject to the western fever. Many of us in this vicinity are deficient in care and economy, while others keep but little stock, and sell hay from their farms until they become exhausted; others make shingles, almost to the entire neglect of the soil. I fear this state of things will exist for years, unless the State pursues a different policy, with regard to settling wild lands. There may be exceptions, but so far as this town is concerned, the settling act has been no advantage, any further than the old settlers were concerned, who had not paid for their land. With a large proportion of the new ones who come in, the first thing to select is a shingle berth. If the State, instead of the policy now pursued, would give a portion of its land towards defraying the expense of a rail or plank road, it would bring in capital and enterprise. In my humble opinion, the county never will rise to compete with other places, until the State puts forth her strong arm, and assists, with an outlay, which will soon return to her coffers fourfold. There is no place within my knowledge, more capable of producing wealth, than the county of Aroostook.

Yours, Respectfully,

MORGAN L. GERRY.

PRESQUE ISLE, AROOSTOOK CO., August, 1857.

DEAR SIR: As your circular has fallen into my hands, and being interested in the agriculture of the county, I take this opportunity to answer such queries as I deem applicable to this portion of the State.

The number of farmers in this plantation has increased in the last five years, probably one-sixth.

I think that the per cent. of income realized is not known to a farmer in town, but little capital being invested in farming operations, because of the uncertainty of the market.

Hired labor can be profitably employed, when it happens that grain, grass seed and hay can be sold at a fair, or moderate rate.

New lands are generally sown first to wheat, oats, or planted to corn. Oats are sown the second year after wheat, and wheat after corn, oats after oats. The third year oats or buckwheat is generally sown and seeded to grass. Lands which have been broken up, or plowed, are generally proceeded with in the same manner when not first planted to corn, beans, or root crops.

The average yield of hay is about one ton per acre.

The increase of the hay crop has been very good in the last five years, both from plowing up of fields and pastures, and clearing new lands. Swamps are not cleared in this vicinity.

To sow clover and herds grass seed on new land, would be the best preparation for a good hay crop. Any land in this vicinity, however poor, may be made to produce good crops of grass, by being well plowed and cropped for two years, and seeded to clover. Buckwheat is the best to seed with, by far.

Lands are generally, and always should be, seeded in the spring, and sown with other grain, or at the same time, and harrowed—from the 10th of May to the 20th of June. When sown with buckwheat, the grass is shaded, and the ground is more moist, and all the seed grows, and gets well rooted before harvest. Seed—ten pounds of clover, two quarts of herds grass seed, mixed.

It is useless to top-dress lands with manure in this section, so it has proved, on a small scale; plaster is said to do well on certain lands.

The cost of horses to the age of five years, is about ten dollars a year. Three years old colts are worth from fifty to one hundred dollars; four years old, sixty to one hundred and twenty-five dollars; and five years old, from eighty to one hundred and fifty dollars.

Neat cattle could be raised to the same ages at an expense of five dollars per head per year; and average value here is about fifteen dollars for three years old, twenty dollars for four years old, and twenty-five dollars for five years old. This is a low estimate, but the prices here are variable and uncertain.

The cost of clearing land, seeding and housing an acre on "new land," of either corn, wheat, barley, rye, oats, peas and buckwheat, is about nineteen dollars. For plowed ground, where we break up the sward and turn in the grass, without manure, is about eleven dollars per acre. New land—wheat, average crop, twenty-five to thirty bushels; price, one dollar and fifty cents to two dollars. Corn, forty bushels to the acre; price, one dollar and fifty cents, to two dollars. Barley, twenty-five bushels to the acre; price, one dollar. Rye, thirty bushels to the acre; price, one dollar and twenty five cents. Oats, seventy-five bushels to the acre; price, forty cents. Peas, twenty bushels to the acre; price, two dollars. Buckwheat, forty bushels to the acre; price, fifty cents.

Wheat on the plow, as mentioned above, will produce an average of twenty

bushels to the acre, and more, were it not for the weevil; and oats fifty bushels. Other crops are nearly the same as on new land, when sown thin.

The cost of growing an acre of carrots, beets, or rutabagas, would depend much upon how richly the ground was prepared. Of carrots, one thousand bushels can be easily raised from an acre. This has been proved. Of the others, I cannot answer.

To recover the fertility of exhausted lands, the cheapest and easiest way is to plow in the grass, in the month of July or August, or perhaps in June would be still better, and 'summer till,' as 'tis called; sow some crop on it, and plow in the same. To enrich the country, *enrich* the soil.

I will illustrate by facts. On the farm of Benjamin Whidden, in this town, *one acre* of impoverished grass land, which never had been plowed, and did not produce over half a ton of hay, was stumped and plowed in August; after laying a few weeks, was harrowed well; in November following, twenty cords of old manure, from the barn-yard, was hauled and spread, and then plowed in; in May following, it was plowed again, and planted to potatoes. The planting and hoeing were done principally with the plow. From it was raised three hundred and twenty bushels of good potatoes. In the spring following, the same land was plowed once only, harrowed, and sown with two bushels of white bald spring wheat, from which was threshed and cleaned forty-two and a half bushels of beautiful wheat, the flour of which was equal to any western flour. As soon as the grain was taken off the ground, it was again plowed, and in the following spring sown to the same kind of wheat, without any more dressing than the plowing in of the stubble of the former crops. And from the same was raised thirty bushels of wheat of the same quality. The next season, the same acre was sown to oats, and seeded again to grain, producing a fourth crop, of forty bushels.

In this case, the manure cost nothing; it was never housed. Any person knows what it costs to plow an acre of easy land. To plow and harrow after the first time is not a very hard day's work for a span of horses. To house and thresh such an acre of wheat, would not cost more than eight dollars. But here are seventy-two and a half bushels of wheat, three hundred and twenty of potatoes, and forty bushels of oats. I make an estimate:

Breaking up, stumping, &c.,	.	.	.	\$4 00
Hauling manure,	.	.	.	8 00
Plowing and harrowing,	.	.	.	3 00
Plowing and harrowing, again,	.	.	.	2 50
Seed potatoes, twelve bushels, 40 cents,	.	.	.	4 80
Seed wheat, four bushels,	.	.	.	6 00
Seed oats, four bushels, 40 cents,	.	.	.	1 60
Planting and hoeing potatoes,	.	.	.	8 00
Digging,	.	.	.	8 00
Plowing three times, and harrowing three,	.	.	.	6 00
Threshing and harvesting the three crops of grain,	.	.	.	24 00

Cost, . . . . . \$75 90

320 bushels of potatoes, 40 cents per bushel,	.	\$128 00
72½ bushels of wheat, \$1.50 per bushel,	.	108 75
40 bushels of oats, 40 cents per bushel,	.	16 00
		<hr/>
Income,	.	\$252 75
		75 90
		<hr/>
Profit,*	.	\$176 85

The same profits can be made again, and on almost any farm in this section, in a common season; and from this, I conclude, and say emphatically, that it is *best to enrich the soil*.

What I consider the defects of our farming, are, first, that the farmers in this vicinity undertake to go over too much ground to raise their crops. It would be far better for them and the country, to let the forest stand, ('till better days,) and till what they have cleared more thoroughly. It would pay better according to the labor expended.

Secondly, farmers depend too much upon a home-market for grains. Whereas, they should raise more cattle, hogs, horses, butter, cheese, &c., and depend upon a distant market. Doubtless there are many defects in the manner of farming in this vicinity, and there is only one thing necessary to open the eyes of farmers, and start their enterprise in improving their agriculture, that is, a *market*, a good *safe market*. The soil of this place is unequalled in fertility in New England. We can here produce in greater abundance and better quality, and at far less expense, most kinds of grain, (except corn,) than any other place, in this State, at least.

This is also a good grazing country; and as good cattle, sheep, hogs, and horses can be raised here as in the world, and as cheap as can be raised elsewhere in the State. But there is little inducement for the farmer to raise large crops of grain; if he does, he may be but little richer than his neighbor who raises just enough for his own consumption and a little to trade off for the groceries which he will give his grain for at a low price, and buy at a large one. So it is better for the farmer when there is just enough grain raised for home consumption. Thus, 'tis unsafe to hire labor and raise large crops of grain, for sometimes he could not realize twenty-five cents for his oats, and one dollar for his wheat; neither could he sell his hay. Then, again, he might get a good price, and make something handsome. Then for other things, cattle, horses, &c., there are only certain times that a farmer can get a fair price. We are too far from a market—one hundred and sixty miles.

What we want is a railroad to Bangor or some such place. Then the Aroostook will become the garden of the State of Maine. It is of but little use to lec-

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\* The omission of "twenty cords of old manure" in this calculation, coupled with the remark above, that it "cost nothing," tells, better than any amount of description, its estimated value in this vicinity. If included at the price which some farmers in the State would put upon it, there would be a material variation in the figures.—ED.

ture to farmers in this portion of the State, upon the best mode of producing. They well know that there is wealth in their soil, but there is no incentive to draw it forth—there is no substantial market. They want a *railroad*. Give us a railroad, and we will show you the most thriving portion of New England, and hundreds of the most enterprising men of Maine will not go to the west, and all other parts of the world, to find a place where the soil will repay their enterprise and hard-handed toil.

The usual date of earliest sowing, is May 10th. Latest plowing, 15th of November. Corn is usually planted May 25th, and harvested about the 20th of September. Cattle must be fed on winter stores between six and seven months.

I have thus imperfectly and hastily answered your queries, and am,  
Yours, &c.,

GEORGE F. WHIDDEN.

MAPLE GROVE, Aroostook Co., August, 1857.

DEAR SIR: In reply to some of the questions of your circular of April last, I would say that I reside in an unincorporated township, and not a town. The number of farmers in it has probably increased fifty per cent. within the last five years. But few of them have got their lands cleared from stumps and under cultivation with the plow. Where this has been done, the crops of grass, grains and roots indicate that we have great treasures in our soil, if made available by proper cultivation. I think I can make more money on my farm by carrying it on, than by working out and receiving twelve per cent. on the value of all which is invested in my farm, implements, buildings, stock, &c., &c. Hired labor can be profitably employed by those who make farming their business, even at the fluctuating prices of produce and labor which have existed here. If we had a railroad into this county so that farmers could realize a fair and comparatively steady price for their products, when ready for market, I do not hesitate to say they could make more profit here at farming than they could in Illinois.

Grass grows luxuriantly; we generally seed down in spring; if to be cut for hay, with twelve pounds clover seed and four quarts of herdsgrass to the acre; if to be cut for clover seed, with twenty pounds clover; do not often seed with herdsgrass alone. Buckwheat is deemed the best grain to sow grass seed with.

Pasturage is remarkably good in this county, and with our facilities for fencing, it pays a great profit to divide our pastures. By managing thus, a large stock of cattle will eat a small lot clean, and when the same lot is again used, the feed is all young and sweet; but if it be all in one lot, a part grows up hard and worthless. Twelve acres divided, are as good or better than sixteen in one lot.

There have been four full blooded animals introduced into this township, within a few years; one Hereford bull and cow, one Durham bull, and last spring, a North Devon bull was purchased by our Agricultural Society; the



same one which received the first premium at the State Fair last year, and from his reputation, we anticipate much improvement to our stock. The Durhams, we look upon as good milkers, but not so hardy as the Herefords; when crossed, they make fair milkers, good workers, and are docile and easy to fatten. We can raise cattle easily and cheaply. To show how our farmers are waking up to their true interests in this matter, I will refer you to the inventory of our assessors for the last two years. In April, 1857, the number of yearlings was twenty-five per cent. greater than in April, 1856; and from what I can learn, should judge that in April, 1858, there will appear at least fifty per cent. more than the present year.

Rutabagas are raised here, as the principal root for feeding stock. They cost but a trifle, compared with their value. I have grown and harvested them for eight cents per bushel, and from experience I find that a cow fed with a peck per day, with plenty of straw, is wintered better than on plenty of the best hay alone.

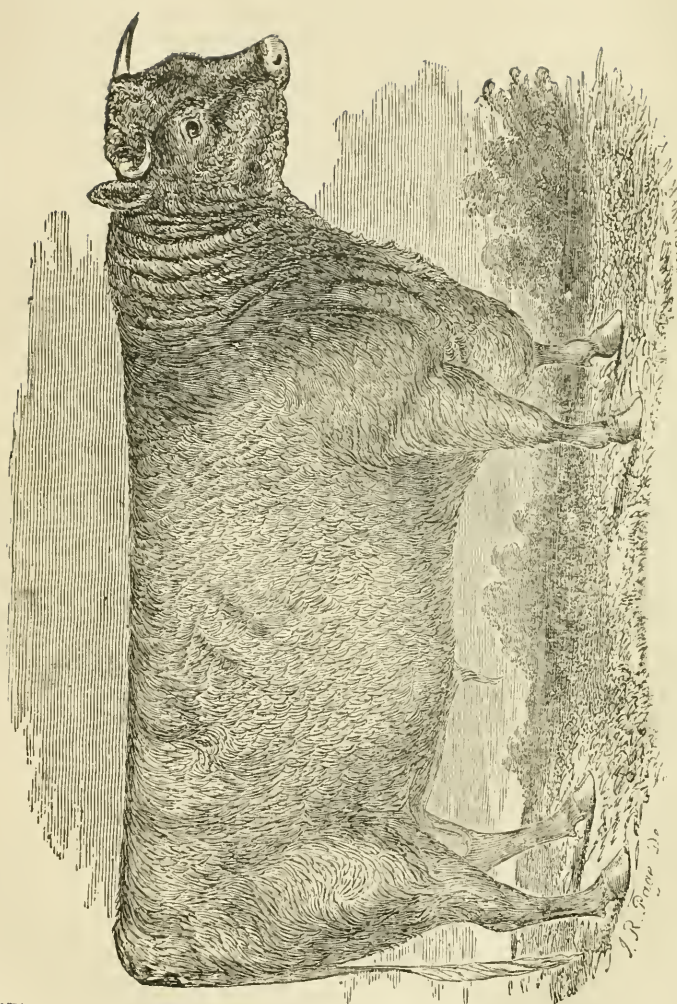
Lumbering, although it makes a market for our produce, has, in one respect, injured the farming interest. A great many men who pretend to farm it, work in the woods in winter and drive timber to market in spring. When they return to their farms, the work is hurried, and badly done, the manure has wasted, and the seed is got in too late; the risk of crops not maturing is greatly increased; and it is from such men that the cry comes, of the seasons being so short that it is no use to try to farm in this country. The great majority of our farmers pay but little attention to fertilizers. With some, barn yard manure is shamefully neglected. The more intelligent are getting barn cellars and sheds, so constructed as to preserve their manure. Very few, if any, compost it or use muck.

Respectfully, yours,

HIRAM STEVENS.







**DEVON BULL, "COMET," (162.)**

Imported by R. Linsley, in 1852. For pedigree, see Davy's Herd Book.

In resuming the consideration of agriculture as it exists in the older parts of the State, what strikes one first and most forcibly after viewing these new lands of Aroostook, suggests an unpleasant topic, but nevertheless one which we are compelled to entertain and deem it a duty to discuss; namely, that a large proportion of our lands now under cultivation have not maintained their original productiveness, but are more or less exhausted. This none will deny. It is too stern a reality and too painfully realized by all; and if it be asked how this came to pass, there can be as little doubt with regard to the reply as there is with regard to the fact, to wit: by injudicious taxation of the soil and by making too scanty returns to it, of the elements of fertility which were carried off in the crops. The system of husbandry pursued from earliest times, or more properly, the husbandry without system which was pursued, had for its object the acquisition of the greatest crops, (at least expenditure,) and *without reference to the continued fertility of the soil*. Labor was dear and land cheap. A little labor would purchase a goodly tract of virgin soil, which possessed every needful element for luxuriant growth. When the land, after repeated croppings, began to fail, it was deemed *cheaper* to extend the clearings and occupy new soil, than to recover to fertility the old, and so the exhausting practice became the prevailing one, and has continued to be up to a late date, if, indeed, it may not be said that a better course is not rather the exception than the rule, at the present time. That it was so at first, is more to be regretted than to be wondered at. Whether it shall continue or not, is a matter worthy of grave deliberation, and one for the farmers of Maine to decide.

In a circular issued in April last, besides inquiring as to the best means of renovating such lands, the question was put, whether, in a pecuniary point of view, it was now the better policy to exhaust them still further and then to abandon and emigrate, or to recover them to a generous degree of productiveness. The replies are numerous, and show conclusively that while some difference of opinion may exist as to the more advisable course if immediate gain be the only

object, regardless of all other considerations, yet taking these latter into account, the decision is unanimous. One correspondent says :

“ It may be the better policy for a temporary purpose, to adopt an exhaustive system of farming, just as a man hiring a horse for a day, may find it more profitable to work him without food or rest, but there is neither honesty nor economy in the long run, and the man who would do either, has neither care for his own interest nor conscience for that of others.”

Another writes as follows :

“ This question covers a broad field, though the word ‘ peuniary’ somewhat limits its area. If taking from the land all that nature gave it and then abandoning it, is good policy in one place, it must be in others, and thus in the end good policy would lead to exhausting all the earth and leaving it a barren waste, incapable of producing food for man. This policy, we of Maine, have been practicing for years. The farmers of the south have pursued the same policy to a greater extent, and the farmers of the fertile west, on a still grander scale, are using up\* the deposits of food for man and beast which nature for ages has been storing up. That these efforts to exhaust the soil of the north, the south and the west, have been eminently successful, the statistics of the country clearly show. Without going to other countries for examples to prove that this result is not necessary—that land may be profitably cultivated not only without being exhausted, but with increasing power of production, we can find them in every neighborhood. Every farmer, if he examines his own practice and experience, will see that his greatest profits are derived from some small part of his farm which receives better treatment than the rest. If then, this exhaustion of soil is not necessary, if good culture pays best, why practice it here or elsewhere? Is it wise to waste or destroy, for a small present saving, that which would in the future yield constant returns? Rather would not true policy, no less than philanthropy and justice, dictate a course of culture which would improve instead of exhausting our farms?

That this may be done, is abundantly proved by examples all around us, and still more by examples abroad, (you have the accounts of the enormous crops of wheat, &c., in England, Holland, &c.) One farm in this immediate vicinity, I have in my mind, of *not more than forty acres of mowing and tillage*, which by the policy I would advocate, now produces, (this year,) more than

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\* A recent editorial in the “ Wisconsin Farmer,” contains the following : “ The only difference is that the east is already skinned, and the west is *being skinned*—not slowly, either, but as much faster than were the eastern States as steam and telegraph have quickened the spirit of the age. The easier and faster modes of cultivation, the reaper, the threshing machine, the railroads, are only so many additional helpers and accessories to the more rapid depletion of the soil of the fertile virgin prairies of the west.” And again—“ Nine tenths, at least, of Wisconsin farms are being skinned as fast as sharp knives and folly can do it.”

one hundred tons of hay. The other crops, wheat, barley, oats and roots, you saw and can judge of.\* The hay must have averaged three tons per acre.

I would say, then, to the farmers of Maine, stay where you are; if you have many things to discourage you, don't suppose that others are free from all care and vexation. The world always puts the best side out, and few care to show their troubles and trials. In times like the present, many a merchant prince, or western land-holder, or southern patriarch, would be willing to exchange places even with the humble farmer of Maine."

Other replies are appended, as follows :

"To exhaust and emigrate, is ruinous to the individual, the neighborhood, the town, State and country at large. Any land which the Creator ever designed for cultivation, may and should be so husbanded, that the husbandman may live independently upon it."

S. F. PERLEY, Naples.

"Exhaust such lands still further? By no means, for then dearth will surely follow, and we *must* emigrate. Have faith in the land, and by the application of works, a generous culture, fertility will be restored, and competence and even plenty, ensue. As a general thing, farmers have not faith enough in the capabilities of their soil, and consequently do not put forth efforts sufficient to develop its resources."

E. R. FRENCH, Chesterville.

"It is the better policy to recover such lands, to a general degree of productiveness, rather than leave and emigrate, even in a pecuniary point of view, to say nothing of the inconveniences to which we should be subjected, and the numerous privileges which we now enjoy, and of which, we must necessarily be deprived by emigrating into a new country."

C. B. SUMNER, Appleton.

"If a man has lived upon a spot of soil, until that spot will no longer afford him a living, it should teach him the great truth that Dame Nature can't be cheated. Mother earth should no more be expected to yield her fruits, without a corresponding return of nutriment, than the farmer should be expected to perform his labor without his accustomed food. In my opinion, it would cost far less to recover these partially exhausted lands to a "generous degree of productiveness," than it would to emigrate to the west, where

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\*The writer here refers to a farm in the extreme eastern part of the State, visited in the course of my tour the past summer, and to which I may have occasion to allude in connexion with the use of bones, as a manure. It is one of a number in that vicinity, an examination of *any of which*, will not only yield a high degree of gratification, but prove conclusively that by the application of skill and energy, farming may be made a *lucrative*, as well as safe business.



lands are said to produce without fertilization. Had I time, I should be happy to give you my views, at length, upon the folly of leaving a home in New England, surrounded with the comforts and conveniences, aye, the *luxuries* and *blessings* of New England life, for a hovel in the west, with its fever and ague, its reptiles, and malaria. Suffice it to say, that Nature has not been so partial as to bestow all her blessings upon a single spot. I can truly say, after traveling somewhat extensively in different States, New England, 'with all thy faults I love thee still.' "

J. W. AMBROSE, Wells.

"Little is known of the science of agriculture, or, in other words, of restoring the partially exhausted elements of the soil. It might be better in a pecuniary, if not in a moral point of view, for a man to leave such lands, and settle on others, whose fertility has not been impaired. It is, however, difficult for every farmer, however disadvantageous his situation, to emigrate when he pleases. As it respects exhausting them still further, some of them cannot be much more exhausted than they now are, and if the occupant cannot manage to make them better, they will neither pay for cropping or exhausting any farther, nor afford him the means of emigrating. However hard the case, we must do the best we can while we have them in charge."

J. ADAMS, West Newfield.

"I have long thought that as cheap as new lands are in this country, if a man wished to see how much money he could accumulate in a given time, without regard to the interests of posterity, or the welfare of his country, he could do it by cropping his land, and selling his produce, till he runs out his land, then purchase new land and go through the same operation again; but would be *very slow* to recommend that plan, and *would not* have it understood that I consider it a judicious course."

AUGUSTUS SPRAGUE, Greene.

"By all means stay at home and reclaim the lands now exhausted. I mean by staying at home, that every farmer should abandon the airy castles, and golden visions, that come floating on every breeze, from distant climes, and go to work in earnest on his land; neither sit in fashionable saloons nor stand at the corners of the streets crying "hard times and short crops." There are now, in this vicinity, hundreds of acres of land, that are tilled and don't pay for tilling. The course pursued is to skim the top of the ground with a plow, which is called plowing, then spread what little dressing is at hand upon the surface, there to remain and dry up, and waste away; putting the seed into the ground pell-mell, without much care or thought, and let nature have the care of the crops in preference to the hand of men. Such farming pays poorly, and such people don't reclaim exhausted lands. To remedy these defects, I would, with all sober earnestness, recommend that the time that is now spent



at wasteful and unproductive places, should be spent upon waste and unproductive lands. About one-quarter of the farmers pursue the above mentioned slovenly practice."

J. DAVIS, Webster.

"I have not much doubt, if we take a pecuniary point of view, solely, that emigration would be the better policy, but when we look at the case in all its bearings, doubtless in most cases the other would be the wisest course."

W. H. POWERS.

"The former is the common idea. Easy to prove that the latter is our true policy. Capital and labor expended on our farms is well expended."

E. S. HOPKINS, New Portland.

"If there was no other consideration by which to be influenced than where can be obtained the greatest returns for the least amount of labor, there can be no doubt but the west must be preferred to Maine. But there are other considerations which in my mind, far outweigh the increased fertility of the soil."

ELIJAH BARRELL, Greene.

"The policy now seems to be, to exhaust the land, go west and practice there the same exhausting principles. There seems to me to be nothing noble in walking over God's heritage in this ruthless manner; rather let us be generous and return something to mother earth in the shape of fertilizers, and we shall have no reason then, for pulling up stakes and going to the west."

S. HASKELL, Cape Elizabeth.

"I should not think it best to exhaust it, nor to emigrate, but to crop less. I had about twenty-five acres that I cultivated, and my health became poor, and one of my boys went to sea. I had but one at home, and I found my land was running out. I turned about one-third of it into pasture, and now I get a third more than previously from the whole, and at less expense."

N. HINCKLEY, Monmouth.

"We do not think man was designed to be a mere migratory animal, continually moving onward and leaving desolation behind them, but that the God of nature has given us means, if we will discover and attend to them, by which we may keep our 'mother earth in heart,' and leave her in as good condition as we found her."

E. JONES, Minot.

"The better policy would be to recover the lands to a good state of productiveness. I believe it is more for the interest of Maine, to encourage her

hardy sons to cultivate and improve *her own* soil, than to send them to the far west, to improve other States and Territories, and far more conducive, both to the physical and moral welfare of the young men."

MARK DENNETT, Kittery.

"The most prudent course, in a pecuniary point of view, is undoubtedly to try and better the ills we have, than fly to others we know not of; and generally, I believe it the better policy to improve the road we have always traveled and are perfectly well acquainted with, rather than to try another entirely new and perhaps unbroken. We have at home, all of us, plenty of good land; most of us in Maine have more than we can cultivate thoroughly with our working capital; we have a healthy and invigorating climate, the great advantages of schools for our children, the means of ready communication with each other, easy access to good and steady markets for all we have to sell, and an absolute certainty, that if we will work industriously and intelligently, we shall realize a comfortable provision for ourselves and families. Now, with all these advantages, which are real and irrefragable, and a thousand others, true and genuine, which each of us can detail from this train of thought, and with the knowledge too, that if our lands have been exhausted, we possess every facility and can recover their fertility by paying up the drafts that have been made upon them, and keep them in good condition forever, by just selling live stock instead of hay, the pernicious practice of these parts. I believe it is by far the wiser and better policy, to make good that which we have, rather than to sell, as has been too often done, in a hurry, and then subject ourselves and families to the stinging annoyances of a new home in the west, (the usual goal,) where we have, perhaps, neither friends or neighbors, schools nor a healthy climate; where we may perhaps, raise to a redundancy, but find nobody to buy our crops; where we cannot be out of doors early in the morning or at evening, without a risk of ague and fever; where the stock we keep to consume our produce, is so poor from the weary way to a market, that we can sell but skinny bags of unground bones at whole bone prices; where we cannot keep turkeys enough to defend us from the ravenous armies of grass-hoppers and locusts which annually march through the land, and every third year rival their exploits of olden time in Egypt. I say let us remain in our native State, upon familiar ground, and maintain a laudable pride in living where our fathers lived and died. Let us encourage thus the healthful memories connected with the associations of our childhood and youth, and enjoying all the varieties mental, moral and physical of New England life, return by labor, all our lands have lost, instead of emigrating, to undergo quite as fatiguing and more wearing labor, surrounded by inconveniences and malaria."

J. F. ANDERSON, South Windham.

The fact being admitted that exhaustion prevails to a greater or less extent, and that it is preferable to attempt renovation, rather

than either to continue the course which has led to this condition, or to abandon the land, a broad and important field of investigation opens before us. Nothing else in the whole range of topics connected with the agriculture of Maine more imperatively demands serious attention.

To obtain the views and results of the experience of practical agriculturists among us upon this point, and bearing in mind the limited capital of a great majority of our farmers, which effectually prevents their resorting at once to such measures as ampler means would readily suggest and command, the following question was propounded in the circular of inquiries before alluded to :

“What method of procedure would you recommend, in order to recover the fertility of partially exhausted lands, (under ordinary circumstances,) and where there is lack of capital to purchase fertilizers?”

The replies, as might be anticipated, are widely various, and few, probably, in attempting an answer, proposed to themselves to touch upon all available means which might assist toward the desired end, but rather only such as most readily suggested themselves to the writers. Allusions to the subject of *saving* and *making* manures are perhaps more numerous than any other—as in the following :

“Haul muck, if to be had, into the barn yard and hog yard ; collect weeds and all kinds of vegetable rubbish from low places in pastures ; turves from the road-side, and increase the manure heap in every possible way. Use all the ashes you can make, buy more if you can, and add a few casks of plaster ; plow deep and thoroughly.”

D. NOYES, Norway.

“Eat your hay at home ; save all manure ; yard cattle in summer ; haul in muck, sods or any thing ; plow in spring and manure. In the fall scrape your yard ; get earth where the yard has washed, and top dress.”

E. S. HOPKINS, New Portland.

“Reclaim waste and swamp lands ; keep the hog yard, cow yard, and barn cellar, well provided with muck. Turf, leaves, muck or other vegetable matter mixed well with the excrements of hogs and cattle, judiciously applied, is almost our entire dependence.”

REUBEN WINCHELL, South Acton.

“If far in the country, we would make great use of the bog or swamp muck, leaves, ashes, lime and plaster. Sow clover and turn it under. If

located by, or near the flow of salt water, make great use of muscles, salt marsh mud, sea weed with fresh mud. Keep up a rotation of crops, and cultivate thoroughly."

JOSEPH FROST, Elliot.

This matter of manures is one of the greatest importance to every farmer, whatever be the condition of his lands; if they are fertile and productive as could be desired, he needs them not less to maintain fertility and so to be able to transmit to his children an unexhausted soil. If his lands be already exhausted, he is in more immediate and urgent need of such a supply of the elements of fertility as shall, at least, restore it to pristine productiveness, if not to improve it beyond its original condition. In the report of last year, considerable attention was given to this topic, but it is one which is in no danger of being soon exhausted, and one concerning which line upon line and precept upon precept is as needful as for any which claims the farmer's attention, and it is also true, that whatever else may be attempted or left undone, in the way of renovation, little can be accomplished unless *accompanied with diligent heed to save, to preserve, and rightly to prepare and use all the fertilizing materials at his command.* It was there shown to be the opinion of many of our best farmers that not less than one-half of the means of fertilization at present within the reach of the farmers of Maine, is now lost or wasted for want of reasonable diligence to preserve them, and that if this great loss could be arrested and the whole employed in the best manner, it would cause a most astonishing change to come over the face of the State, *and millions of dollars to be annually added to its wealth.*

Whether this loss is to be attributed to ignorance of its true value, or to a reckless disregard of it, an immediate stop ought to be put to such practice. Every farmer should at once see to it, that so far as his own premises are concerned, this reproach upon our agriculture be wiped off.

On no one point is there greater mal-practice than in allowing the liquid excretions of animals to run to waste, and this probably in many cases, if not most, may be owing to ignorance of their value compared with that of the solid; not every one is aware that it is not merely of equal, but of greater value—not that we could afford to dispense with either, but if compelled to do so, we could

replace the fertilizing elements of the solid at less expense than we could those of the liquid, for the urine contains more largely of nitrogen, which, in practice, is found to be the element needful to vegetation most difficult and costly to supply. It is true, that more than three-fourths of the atmosphere consists of nitrogen, and so plants are constantly enveloped in it, but plants do not possess the power to appropriate it as thus existing, nor in any way except it be first combined with some other body. Hydrogen and nitrogen combined, form ammonia,\* and this is the source whence plants obtain nearly all their nitrogen, and the special value of urine arises from the fact that during its decomposition, ammonia is freely evolved, while the solid portion of the excrements contain very little from which it could be evolved.

Every one is familiar with the great efficacy of the excrements of poultry, or other bird manure, compared with ordinary farm-yard manure, and this great superiority is owing to the fact that in that of the bird is all of the liquid as well as the solid, and hence the abundance of ammonia yielded by manure from the hen-roosts or by guano. Ammonia is contained in very small proportion in rain-water; enough, it is said, to afford to growing plants vigor sufficient to enable them to perfect seed and so secure reproduction, but that if, in addition to this, we would have plants yield a supply of human food, more nitrogen must be supplied.

The liquid excretions of animals may be saved by means of tanks, cisterns, &c., and applied directly to the land; but situated as a great majority of our farmers at present are, the preferable way is to use absorbants.

The time will probably come, and perhaps at no very distant day, when a large part of our fertilization, and especially upon light soils, will be effected by means of the application of liquid manures, for in some respects this mode is vastly superior to any other, but it involves an outlay for necessary apparatus beyond the present means of our agriculturists.

Nearly all have on their own premises, or can easily obtain, an

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\* Ammonia is usually present in the atmosphere, but in very minute proportion. It can be detected also in rain-water, and the peculiarly invigorating effect of brief summer showers is in part attributable to the ammonia which the rain has absorbed from the air in its descent.



abundant supply of muck, and when dry, there is no better absorbant than this. Peat, or muck, varies greatly in its composition and value, some being almost worthless for direct application to the land, while other produces immediate good effect; but however trifling its present value as taken from its native deposit, it is not only of use to save the urine, but by means of the ammonia generated, a large amount of excellent food for plants is developed from the crude vegetable matter which is abundant even in the poorest; or, in other words, the vegetable matter is prepared or cooked so as to be available as food to growing plants.

Stockhardt in his field lectures, says: "A farmer who does not carefully preserve the urine of his house and live stock, acts like a miner who throws away dull, rich silver ore, because it does not shine like white silver.

"A farmer who buys guano, bone dust, or other artificial manures, but does not look carefully after his drainings, is an extravagant farmer; for he brings the same thing into his yard at great cost, which he might have for nothing, if he did not suffer it to flow or evaporate uselessly away from the same."

Another saving to which special heed should be given, is that of bones. Not a bone upon the premises of the farmer, the butcher, the soap boiler, or elsewhere, should be wasted. They are worth a great deal too much. The value of a manure depends chiefly upon its capacity to furnish the needful constituents of crops. One of these, and the one which next to nitrogen is the most difficult and costly to supply, is phosphoric acid. An analysis of bones shows that in every one hundred pounds we have thirty-three pounds of organic matter, consisting of gelatine and fat, and composed of nitrogen, carbon, oxygen and hydrogen; and fifty-five pounds of phosphate of lime, consisting of nearly equal proportions of phosphoric acid and lime. Thus it is seen that something more than a quarter part of the weight of bone consists of phosphoric acid.

This exists in most soils in limited quantities, and is usually the first among the necessary elements of plants, to fail, and especially is this the case if the land be cropped for grain. The ashes of wheat (that is, the mineral portion of the grain, which it must obtain from the soil, and cannot get from the atmosphere or from moisture,) are found to consist of forty-six per cent. of phosphoric acid; of barley,



thirty-five per cent.; of rye, forty-six per cent.; of Indian corn, thirty-nine per cent.; of oats, eighteen per cent., or if the husk be first removed, forty-four per cent; hence, the necessity of an adequate supply in order to secure satisfactory crops.

There is an obstacle in practice, but not an insurmountable one, to the application of bones in such a way as economically to supply the want, arising from their toughness and solidity in their natural state. To pound them up finely by hand, is a tedious and difficult undertaking. To burn them to ashes, involves the loss of the organic matter; to dissolve them in acid, without first being reduced to powder, is rather too costly, and not a very easy process.

Various mills and other contrivances have been made for crushing bones, and whenever their value is properly appreciated, some apparatus will be introduced into every section for this purpose.

The machinery most approved in England for crushing bones, consists of two or more sets of rollers or cylinders, with serrated surfaces, fixed in a frame-work, and adapted to the ordinary gearing of horse or steam power, with a hopper for the bones, which, after passing through one set, pass through the next, which have closer teeth, and crush them into smaller pieces. There are also wire cylinders which act as riddles, the meshes of which are adapted for the purpose of retaining the larger particles, while the smaller fall through. I saw at St. John, N. B., a bone mill constructed on this principle, but with only a single pair of rollers or cylinders with serrated surfaces, which answered the purpose, but required that the bones be passed through several times. An apparatus of this sort should be both powerful and weighty, in order successfully to overcome the resistance of the bones, and crush them to a proper degree of fineness.

By the addition of sulphuric acid, in the proportion of one part by weight of acid (diluted with an equal quantity of water) to two parts of ground bone, we secure the combination of the acid with a portion of the lime, leaving the other combined with a double proportion of phosphoric acid. This is called biphosphate or superphosphate of lime, and differs from the phosphate as existing in bones, in being much more readily soluble, and so producing immediate effect—a very small application thus sufficing for the wants of one crop. If bones be crushed so that the largest pieces will not exceed

a quarter to a half inch, we secure by a liberal application both sufficient immediate effect, and also endurance for a considerable term of years. This is, on the whole, the more economical way to apply them in most instances. Where there is a deficiency of phosphate in the soil, the application of crushed bone is the cheapest mode in which the want can be supplied, unless in some instances where leached ashes can be had at low price, in which case it can be supplied thus at even less cost, but crushed bone will supply it decidedly cheaper than by the use of low priced varieties of guano, whose efficacy consists principally in the phosphate they contain, as the Mexican, or by the use of the superphosphates of commerce.

But in estimating the value of bone-dust as a fertilizing material, the organic or animal matter should by no means be lost sight of. If phosphate of lime were the only ingredient of value, bones could easily be burned and reduced to powder, as none of the phosphate would thus be lost, but the organic matter which would be dissipated contains no less than eighteen per cent. of nitrogen, and is substantially similar in chemical composition to hair, horn and wool, and differs from muscle and blood chiefly in containing less water, dried blood and dried muscle being almost exactly the same as to their chemical constituents and properties.

All these substances are well known to be among the most powerful of fertilizers, and their value depends mainly upon the nitrogen they afford. It will of course be borne in mind that the office or function of nitrogen and of phosphoric acid in the nutrition of plants, is essentially distinct. Neither can take the place of the other, and neither can be dispensed with. Nitrogen induces rapid and luxuriant growth of the plant—phosphoric acid assists in the formation and ripening of seed. If nitrogen be abundant, a luxuriant straw could be grown; but if phosphoric acid be wanting, the head could not fill with grain. On the other hand, if nitrogen be absent, or the plant could obtain it only from the atmosphere, there would not be sufficient power, vigor or vitality to induce growth and form seed, even if phosphoric acid be abundant.

The application of bone-dust to agricultural practice in Maine has been quite limited hitherto. I noticed remarkable proof of its efficacy and value in several of the easternmost towns of Washington county last summer, where it has been used for ten years past,

more extensively (so far as my knowledge extends) than in any other part of the State. Some fields on the farms of the brothers Lincoln in Dennysville, were similarly treated when laid down to grass eight years ago, except that on alternate strips an application of ground bone was made at the rate of eight to ten hundred pounds to the acre. On these the grass, ready to cut when I saw it early in July, promised a heavy crop, while the strips to which no bone had been applied was yielding not more than a third as much. This was shown me as a fair sample of the results attending its use in numerous instances. The Messrs. Lincoln prefer it, weight for weight, to the best Peruvian guano. Such has been their success, that one of them has erected an apparatus for crushing or pounding bones, (consisting of three heavy iron mortars and pestles, the latter being lifted by water-power,) and he purchases all which are brought to him, at fifteen dollars per ton, or he will crush for others at the halves. Some sixteen miles distant, I saw a quantity of bones which had been collected and loaded, ready to be carried to mill, crushed and returned; and here I learned that their efficacy had been proved to be such as to render this operation a very profitable one. Perhaps one reason why bone manure has been so very successful here, may be found in the fact that when the lands were first cleared, the wood, instead of being burned upon the spot and thus returning to the soil a good quantity of phosphate, was all carried off—the merchantable cord wood to be shipped to Boston and the remainder for fuel for home consumption. One other fact mentioned in connection with their experience is not so readily accounted for, namely: that while before the application of bone-dust it was impossible to get good crops of hay, (even with liberal application of ordinary farm yard manure,) there was no special difficulty in obtaining satisfactory crops of grain.

At Perry, in this vicinity, guano (Peruvian) had been used with highly gratifying results, proving itself a cheap and effectual manure. It had been applied in quantities varying from one hundred and fifty to one thousand pounds to the acre. The result of experiments indicated three hundred pounds as the preferable quantity, that amount doing as much good as more, and lasting as long, its effect being visible for several years. The soil here is apparently of granitic origin, and overlies a red sand stone formation, which occasionally crops out.

Should the farmers of Maine make dairying and grazing as prominent branches of their husbandry as seems warranted by their facilities compared with those of others, some application which would restore phosphates to the soil might be the only form of manuring to which they would be obliged to give *special* attention, for the abundance of barnyard manure, if properly cared for, would yield in sufficient quantity all the other elements needful to bring their farms to a high state of fertility—phosphates, which enter so largely into the composition of bones, and of milk, being carried off and not returned. The manure from grown animals (not giving milk) contains considerable, but that from young cattle, (rapidly forming bone) and milch cows, very little. Bone manure is applied with great success to pastures used for milch cows, and which are thus more rapidly deprived of their phosphates than when fed by other animals. Prof. Johnston states that in every forty gallons of milk there is at least one pound of bone earth. Estimating a cow to give seven hundred and fifty gallons of milk per annum, it will require nineteen pounds of phosphate of lime, equal to about thirty pounds of bone-dust; and in the calf sold, there may be a farther loss of twenty pounds of bone.\*

“The extent to which animals grown and fed upon a farm, draw upon the phosphoric acid contained in the crops upon one hundred acres of arable land, has been calculated by Mr. Hayward to amount to four hundred and thirteen pounds, equivalent to the amount supplied by one thousand four hundred and ninety-one pounds of bones.”† Thus it is seen that even where animal products alone are sold from the farm, and all the manure arising from the home consumption of the crops is retained, there is still a heavy draft upon the phosphates in the soil.

The use of bones as a manure has been increasing in Great Britain for many years, and such is the estimate in which they are held, that not only is their collection at home a regular and important branch of trade, but large quantities are annually imported from other

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\* A writer in the Edinburgh Review states the amount of phosphate taken away in the milk of a cow annually, to be as much as is yielded by eighty two pounds of bone-dust.

† Mr. Hayward's calculation was probably based upon crops considerably larger than the average of ours.

countries. Some have even been exported thither from the United States. The declared value of the bones imported into Great Britain (according to their statistics) from 1837 to 1841, was one million two hundred and seventy-one thousand seven hundred and sixty-two pounds sterling, or about six millions of dollars; and from 1841 to 1847, there were imported into one port alone (Hull) an annual average of upwards of twenty thousand tons. A late English writer says :

“Amongst the many improvements in agriculture which modern practice has adopted, there is none of higher importance than the introduction of bones as a field manure. It is quite possible that many who have looked with admiration on the achievements of industry in every branch, and have marked with satisfaction the immense increase in the production of human food which has taken place during the last fifty years—an increase which has been trebled in the space of time that population has doubled, and who have noted the augmented value of property, the improved condition of the laborer, and the extended field for enterprise, skill and capital, which the occupation of the farmer now affords, will overlook the fact that the use of bone manure has been one chief mean by which all this has been accomplished. But the fact is so; the adoption of bones as a farm fertilizer has opened sources of production that have been the means of providing, to a mighty extent, food, labor and wealth for the community. What draining has done for the wet and cold soils, bone culture, by promoting the system of root husbandry at a period when every other means had been found incompetent and useless, has done for the rest.”

The use of bone-dust in some parts of the continent of Europe has greatly increased within the last twenty years. Formerly large quantities were exported to England from the German states. Now, Stockhardt writes, (or rather he so wrote in 1851,)

“That bones exert a vigorous manuring influence upon our soil can no longer be doubted, for the results of practical experiment are now before us to a sufficient extent to convince every one who is open to conviction. Manuring with bone-dust has become general over all parts of Saxony during the last fifteen or twenty years. How important an extension of this mode of fertilizing land has obtained in this part of Saxony more particularly, is revealed to us by the fact that the first bone-mill, constructed by an intelligent farmer, ground a total of six hundred weight during the year 1837, but in 1848 some fifteen thousand hundred weight; as also by the additional consideration that in the last mentioned year, in this Province alone some fifty thousand or sixty thousand hundred weight were prepared and sold, yet without satisfying all demands. The total quantity of bones which are to be obtained from the



animals annually slaughtered in Saxony, amounts, on an approximative calculation, to one hundred thousand hundred weight, and half this quantity, if not still more, is imported from the immediately adjacent countries. If, on a moderate assumption, the total produce from one hundred weight of bone-dust is estimated at two Saxon bushels\* of rye, the quantity of this substance that is yearly consumed in Saxony, leads to an increased yield of three hundred thousand bushels."

He further remarks, that

"Complaints are often heard, that by the consumption of English cotton fabrics in Germany, thousands of English laborers are supported by German money. Germany has done far more; for nearly half a century it has given grain to English laborers by the exportation of German bones and German oil cake. According to trustworthy information, the produce of English fields since the importation of bones and oil cake has been doubled. The revivifying power which has been lost to our father-land by this exportation of manures, would assuredly have been preserved to it, if during this period the importance to agriculture of the constituents contained in bones and oil cake had been clearly understood in Germany. This is the triumph of intelligence, that it makes powers serviceable which remain neglected and useless where intelligence is wanting."

Not only should the above-named items of saving be effected in the matter of manures, but every other possible source should be made to contribute what it can, and the whole should be preserved with care, and by means of barn cellars or sheds be protected from the sun, air, and especially from rains, which dissolve and carry off the most valuable portions, the very life of it. The farmer is constantly engaged in obtaining from his soil products, every one of which carries away from it certain elements of fertility. He should be just as constantly busied to return to the soil, in some form or other, an equivalent at least, and more than an equivalent, if he aims at higher productiveness. Good husbandry implies the faithful husbanding and use of every thing which will add bread and meat to his store, and his success will in great measure be parallel to his diligence and attention thereto.

I am here again reminded of the marine manures which our State possesses in larger abundance than any other in the Union, and upon which some observations were made in the last report, by the

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\* The Saxon bushel is larger than ours, being no less than one hundred and sixty lbs.



mention which is made in a communication from Mr. O. W. Herriek of Brooklin, a shore town in Hancock county, of the remarkable success which has attended the application of "poggy chum," both as a top-dressing for grass lands, and as an ingredient in composts.

In answer to an inquiry respecting this article, he informs me that the fish known as menhaden, and often called along shore "hard-heads" and "poggies," are taken, by means of nets, in large numbers, and after being boiled, are pressed by screw-power to extract an oil which sells readily in Boston and other markets, at from fifteen to eighteen dollars per barrel; what remains after extracting the oil, is called "poggy chum," and sells at twenty cents per barrel; two barrels are equal to a load (forty-eight cubic feet, or three-eighths of a cord,) of farm yard manure; one hundred of these fish yield a gallon of oil—four hundred give a barrel of chum. Sometimes a man and a boy, besides carrying on a small farm, catch fish enough during the season to make fifteen to twenty barrels of oil, and one hundred to one hundred and fifty barrels of chum. Occasionally enough are taken in a night to make a barrel of oil—at other times none for several days. Mr. H. farther informs me that some farms in that vicinity which six years ago cut only five tons of hay, yielded thirty tons the present year, and this large increase is wholly attributable to the application of "poggy chum."

That this may be found as profitable a business at many other points on our coast, as at Brooklin, seems highly probable, and I am informed that it is rapidly attracting increased attention. Mr. H. remarks: "in our town of about two hundred voters, there are over fifty employed in this business." Poggy chum, it should be recollected, is only one of the thousand forms in which the treasures of the deep may be made to enrich the farmer. These have never hitherto been duly appreciated. Not only in the form above named, but as salt muck, sea-weed, kelp, muscle-bed, and many others now known, together with the probability of still other forms yet to be discovered, they are, beyond all question, a rich provision placed by a beneficent Providence within the reach of all cultivators of the soil near the sea shore, and which, it is well known, is generally inferior in natural fertility to that of the interior.

The first settlers were drawn hither by the facilities for fishing,

lumbering and commercial pursuits, in which signal success has crowned their efforts, Maine now ranking first among the states of the Union, in the amount of tonnage built, and sustaining high rank regarding the amount of tonnage owned and sailed, the carrying on of fisheries, lumbering, &c.

A proper appreciation and a practical application of the marine manures so bountifully furnished, would at once elevate the condition of agriculture along our coast from its present subordinate position, to a corresponding rank in importance.

### FALLOWS.

“This question is of the utmost importance. I would not abandon such lands, nor exhaust them further, but *would let them rest*, or turn them into pasture, and in three or four years, plow to the depth of one foot, seeding down without cropping, sowing on ashes, lime, salt, &c. I have no doubt but that many soils could be brought to, by simply plowing deep, and exposing to the sun and air.”

G. H. ANDREWS, Monmouth.

“When land has become exhausted, if there is not capital to cultivate the same, I think that if it could be preserved from cropping or grazing, it would recover, to a certain degree, on the principle that we always find nature prompt to restore its own wounds.”

ABRAM COFFIN, Waterborough.

“We *think* it might be well to plow and let the land lie fallow one year; but deeming “a bird in hand worth two in the bush,” we take off all the grass. My next neighbor, however, has turned in a few acres of grass, and we think he will get his reward. This question is a very important one to us, many of whom, live on old and partially worn-out farms.”

E. JONES, Minot.

We find indicated in the above, and similar replies, a second mode which is recommended as a means of recovering fertility, namely, fallow, or summer tillage, as it is sometimes called.

The naked fallow has been practised from a remote period of antiquity, and up to a comparatively recent date was the only known means (aside from manure) to this end. The theory of it was anciently understood to be that the land became *tired* of bearing crops, and needed *rest*. However incorrect this theory, the practice of fallowing lands was accompanied with beneficial results, not only in

greater fertility but in greater cleanliness, it being easy thus to rid the soil of noxious weeds which had become thoroughly established in the soil, by reason of imperfect or slovenly cultivation. Fallowing was enforced by the Hebrew law, which commanded that every seventh year the land be permitted to rest, and although the primary object of this enactment was undoubtedly of a typical or figurative character, we may see in this, as in numerous other instances in the Mosaic economy, a thorough fitness to the circumstances by which they were surrounded, and a special adaptation to the requirements of their system of husbandry.

It was practised by the Romans, and by them introduced into England, where it has been more or less in vogue ever since the Roman invasion; but notwithstanding this, it is said not to have obtained in Scotland until the end of the sixteenth century, and that a Mr. Walker, of East Lothian, was the first who ever attempted systematically to fallow land there.

“ Like all innovators and improvers, he had to endure for a time the ridicule or contempt of his neighbors, who pityingly concluded that he was either insane for allowing a portion of his land to lie waste a whole year, or so poverty stricken as to be unable to find seed to sow it with. So successful, however, were Mr. Walker's repeated trials in summer fallowing land, that twenty years after its introduction the practice had become nearly general throughout East Lothian.”

The success attending the operation of fallow depends in part, as above remarked, upon the greater cleanliness given to the soil by the destruction of weeds, which rob the soil of so much nourishment—more upon the improved mechanical condition, the greater fineness and mellowness induced by the action of frost, and by the repeated plowings to which it is subjected, but probably most of all to chemical changes which are produced during its existence. These are chiefly the evolution of a new supply of plant food in the form of alkalis and soluble silicates, which are furnished from the disintegration of the soil, and of the rocks in the soil, which progresses steadily during its continuance, and also the more thorough and complete decomposition of the inert organic matter also contained in the soil, which now entering into new combinations with the elements furnished by air and moisture, becomes of increased value.

But in the course of time it was discovered that the benefits of a

bare fallow could be had, and a crop also; hence, such crops came to be known as fallow crops, as turnips, &c., for during their culture the land could be well stirred and exposed to the air, and the wide spaces between the drills permitted the thorough eradication of weeds, and in addition to this, there is an actual gain by their using some elements of fertility not required by the grain crops. In the decomposition of feld-spar, for instance, by the combined action of air, frost and water holding carbonic acid in solution, there are liberated one equivalent of potash for every one of silica, and of these, grains require five or six parts of silica to one of potash, while root crops appropriate to themselves largely of potash, but very little of silica, so that there is economy in saving so much of plant food; and if the elements of fertility thus used by the crops are returned to the soil in manure, the product of their consumption, the fertility may be maintained, and gradually increased.

The advantages of fallow crops over naked fallows are so great that they have taken their place in nearly all good practice, the only exception being in the case of very stiff clays, where they are by some yet retained. It is on soils which contain largely of alkaline silicates, as in clays, that the practice of bare fallowing is most advantageous.

Fallow crops will be considered more at length in connection with the subject of rotation.

We will now notice a third method pointed out in the recommendations following, viz., that of green manuring:

“In answer to this question, I can do no better than to give you my own experience. Seven years ago this spring, I bought a piece of land that had an old worn out field of twelve acres upon it, that had been mowed as long as it would bear any thing, then the best spots mowed, and the remainder left to grow weeds and bushes. I repaired the fences around it, and turned in a flock of sheep, and in the course of the summer cut the bushes. The following spring I fenced off four acres, plowed it in June, and sowed to buckwheat. The first of September I rolled down that crop, and plowed it in. I sowed buckwheat again the next season, putting on twenty-five bushels of clover chaff to the acre, and I harvested about one hundred bushels of buckwheat. The next year I put on what manure I could spare, and planted to corn and potatoes. The fifth year I sowed to wheat, and seeded down. I have not failed of a fair crop since; and this year I have eight acres to grass, from which I shall undoubtedly cut twelve tons of hay. The remaining four to

corn and potatoes. I have not kept an exact account of the expense or profit, but think the pasturage and crops have well paid for what I expended."

N. S. HOOPER, Cambridge.

"I should recommend first, muck composted, if not practicable, plow and seed with buckwheat or clover; to be turned under."

ELIJAH BARRELL, Greenc.

"Plow in green crops, such as buckwheat, oats, or corn, sowed broadcast, and repeat the operation."

S. HASKELL, Cape Elizabeth.

"I would recommend sowing oats, and plowing them in when fairly headed out. A repetition of this, for three successive years, would produce a marked change in the soil, and I think would be the cheapest way to obtain the desired result."

J. W. AMBROSE, Wells.

"Rake and save all the manure of every description. Break your ground ten inches deep, sow clover to plow in; turn out old fields to pasture, and plow up old pastures."

D. H. THING, Mt. Vernon.

"In order to recover partially exhausted lands, when there is lack of capital to purchase fertilizers, I would recommend sowing clover, or buckwheat, and turning under, with frequent and deep plowing."

C. B. SUMNER, Appleton.

"I would plow in green crops, use swamp muck, and be more economical in the saving and application of every thing that contains fertilizing properties."

N. H. POWERS.

"Exhausted lands may be recovered by plowing in whatever grass may be growing about the first of July, and sow with oats, or almost any thing else, and plow that crop in, in the autumn."

MARK DENNETT, Kittery.

"Apply labor unstinted. Cultivate your land. Do not skim the soil, and turn it over, and sow or plant it, and let it lie until foul, and get all you can from it, and then put it to grass and mow it as long as you can get any hay from it. You must plow it as though you meant it; dig it, work it, see what it is made of; beat it all to pieces; then sow a bushel of buckwheat, and when it is eight inches high, turn it over, and sow another bushel, and after turning that in, try grass, or some other crop, and if it wont grow, you may give it up. But it will grow."

AARON HOAG, Gardiner.

The plowing under of green crops is justly considered one of the most feasible and economical methods of bringing up and renovating worn and exhausted soils. In its practice, as in that of growing



fallow crops, we have many of the advantages of the bare fallow, and connected with it a very considerable addition to the organic matter of the soil. This has been satisfactorily shown by experience, and where from inability to purchase fertilizers, or from distance, or any other cause they cannot be obtained or employed at remunerating rates, green manuring (the term by which this operation is familiarly called) is strongly recommended. If it were true, as was once believed, that plants obtain *all* their nourishment from the soil, the known effects of green manuring could not be accounted for. But such is not the fact. Plants derive their nourishment partly from the soil in which they are grown by means of their roots, and in part, and sometimes in very large proportion, from the atmosphere by the action of their leaves. These sustain to the plant a relation similar to that of both stomach and lungs to the animal, and not only do they digest and assimilate all the inorganic or mineral substances which enter into their composition, dissolved from the soil and brought up in the sap, but they take in largely from the atmosphere of carbon, which is always present in it in the form of carbonic acid, and which goes to make up the bulk of the plant; nor is this the only element of growth which is thus obtained. Nitrogen, which, if not more absolutely necessary than any other, is certainly the one which in practice is found most difficult to supply, is to a limited extent thus derived by the plant, and so much as is thus obtained is safely laid up for the use of future crops. But it is not alone by the leaves that a gain is effected. By the action of the roots, which in some instances, as in clover, run very deep, in bringing up from the subsoil food which otherwise would lie there beyond the reach of many cultivated plants, we effect another positive gain; and when the crop is turned under, we enrich the surface soil not only by the addition of all the organic matter obtained from the air, but by the addition of both vegetable and mineral substances brought up from below. In the case of clover, a portion of the crop is sometimes in practice fed off by cattle whose droppings return directly to the soil nearly an equivalent for their food, and the remainder being turned under, together with the manure, the gain is nearly as great.

We see something very similar to green manuring in the operations of nature, and on a grand scale in the case of forests, where

roots striking wide and deep assist in hastening the decomposition of soils, gather all they can reach of what is needed to build up their organisms, while at the same time the leaves draw from the air and from moisture. They deposit annually a considerable portion of what is thus obtained, and the ultimate result is that the soil attains a great degree of richness and fertility—when the forests are felled, we call such, our virgin soils, our very best.

It would appear then, that such plants as present the greatest surface of leaves wherewith to obtain atmospheric food, and send down the deepest roots to levy contributions from the subsoil, would be those best adapted for this purpose, and perhaps there is no plant which better combines both of these than the clover, and it is found to be in actual experience one of the very best. A closely calculating and very successful farmer remarked to me last summer, in speaking of this subject, that "clover seed was the only manure he could buy and use at a good profit." Buckwheat and oats are also favorite crops for green manuring. The former succeeds on poorer soils than either of the others, and on light sands it is said to give an improved consistency to the soil as marked in its way, as is the loosening and mellowing of heavy clays by the action of clover. Whatever crop is used, it should be plowed under when in full flower. It is at this period that it most readily decays, and also yields more enriching elements to the soil as the luxuriance of foliage is greater, and the leaves contain more soluble matter to afford nutrition to the succeeding crop. The process may be repeated several times in the season, and in practice it is found that the crops will be more effectually covered if a roller be first passed over them. It is sometimes objected to as a waste of time and labor to grow one crop merely that it may decay and give place to another; that we may just as well grow the crop we intend to take off, and let that one do its own work of collecting from the air and from the subsoil, or wherever it can get its food, as to spend time and labor to induce vegetation in one form with the intent to take off the same elements in another.

If a sufficient answer to such objection is not indicated in the foregoing remarks, we would like to have the objector explain why, and how, we may feed our cattle directly upon the elements of fertility in the soil, instead of being at so much trouble as we now

are, first to convert these elements into forage crops. When this is satisfactorily done, it will be time to consider theoretical objections to what is proved by experience to be of great utility.

**ROTATION OF CROPS.** Nothing relative to agriculture is better established, than the fact that a rotation of crops is necessary to profitable farming; and all the farmers of Maine practice, if not a systematic rotation, yet a succession or alternation of some sort, that is to say, none allot to their grass, grain, corn, roots, &c., certain parcels of land, and then crop each perpetually for the same product; but they change in some direction, and to some extent. At the same time it is evident, that in comparatively few instances is there any thing like a well considered, systematic and judicious rotation of crops practiced among us, but that convenience, or chance often—indeed, may I not say usually—determines the course of cultivation, rather than any carefully digested plan, or steady aim, to develop the powers of production possessed by the soil, in the best and most economical manner. This is a hard saying, and to show how fully I am justified in the assertion, some answers are annexed, which were received in reply to the following question in the circular sent out last spring—“To what extent is any method of husbandry practised involving a systematic rotation of crops?”

“I do not know of a farm where a systematic rotation is practiced.”

J. W. AMBROSE, York Co.

“Such a thing we have heard of, and cannot question its importance; but in practice it is wholly ignored; every thing of the kind is left to chance. Generally the reason why a piece of land is broken up, is because it has become too poor to bear grass.”

WM. GREGG, Cumberland Co.

“No regular method or system of rotation is practiced.”

J. S. POWERS, Oxford Co.

“There has been none practiced.”

A. SPRAGUE, Androscoggin Co.

“None.”

J. CARGILL, Lincoln Co.

“Systematic rotation has not been practiced so as to enable me to give any reliable information.”

G. H. ANDREWS, Kennebec Co.

"Don't know of any."

O. SEWALL, Franklin Co.

"None practiced."

A. ARCHER, Somerset Co.

"No systematic rotation of crops is practiced worth naming; indeed, none that I know of."

B. F. WILBUR, Piscataquis Co.

"None."

H. HOBBS, Waldo Co.

"No systematic rotation here."

L. RIDEOUT, Penobscot Co.

"Our husbandry does not embrace systematic rotation."

O. W. HERRICK, Hancock Co.

"There is no systematic rotation of crops generally practiced."

D. J. FISHER, Washington Co.

"Nothing established in relation to rotation of crops."

M. L. GERRY, Aroostook Co.

Let us first inquire, what is to be understood by a *judicious* rotation, and the reply is, such an one as shall result in *obtaining the greatest product* from a plot of ground, in a course of years, *connected with the least exhaustion*. If manure and labor were always, and to sufficient amount, at the command of the farmer, there would be no absolute necessity for alternation of crops,\* for he might take from his land the same product, year after year, indefinitely, but it is because these are the two very articles which the farmer has need to economize with utmost care, and make both go as far as possible, that a judicious rotation demands his serious consideration. To determine in any given instance what may be the best rotation to secure this end, is a matter to be definitely settled only by experience; this experience our farmers do not possess; and they cannot attain the best success until they learn how, so that my present purpose is rather to show the desirableness of such knowledge, and give reasons for diligent inquiry, experiment and observation, than to lay down rules for practice.

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\*Boussingault states, that on the coast of Peru are tracts which have produced crops of corn in succession, from a date anterior to the discovery of America, and on the table lands of the Andes are wheat fields, which have yielded excellent crops annually for more than two centuries.

Theory may assist in determining by way of suggestion, but theory alone cannot dictate with confidence, *until we are sure that it is in all respects correct*. No theory yet broached has been able *fully* to account for, and explain, all the well ascertained results of experience on this point. Many and various are the theories which have from time to time been promulgated to explain the known facts attending rotation. The earliest in point of date was, that the land *got tired* of producing any particular crop, and required rest or change of employment, which is perfectly absurd, for soil is not a *being* possessed of a nervous system, or of organs of any kind, or capable of fatigue, or of recovery from fatigue by rest. To be sure, we sometimes speak in a loose way of driving, forcing, or stimulating the soil, but such expressions are all wrong, and should be carefully avoided, if only for the reason that incorrect language often leads, even unconsciously, to incorrect belief, and incorrect belief leads to incorrect practice.\* Our land should be looked upon rather as a reservoir, or a deposit of plant food, of materials or elements, such as plants, (which *are* organized bodies,) take up, feed upon and assimilate to themselves, and so are enabled to increase in growth and ripen seed. If the soil does not contain all which the plants need, we add manure, and manure is only food for plants, and whatever contains food for plants may properly be called manure, whether it be dung or gypsum, urine or ashes, leaves or guano. If we add to our soil just what food is required by the crop which the soil

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\* We can *stimulate growth* by furnishing the needful elements of fertility which may be lacking; and sometimes in this way, where little is wanting, and the want of that little is imperative, a slight application of the right kind will result in great yield; but to say that the *soil* is stimulated thereby is no more true than that a decanter is stimulated by putting brandy in it.

Not unfrequently cases like the following (which was related by a member of the Board, at one of its informal evening meetings last winter,) occur: A certain man applied to a piece of land so poor as to yield less than five hundred pounds of hay per acre, a dressing of muscle bed. The next year, he cut three tons per acre; the second year, nearly as much; the third, rather less; the fourth, less still; and the fifth, scarcely any. He then applied muscle bed again, but it produced no effect. He then tried a few loads of barn-yard manure, which did but little good; his soil appeared to be hopelessly barren, and he cursed the muscle bed for *driving his land to death*. Now let us look into this a bit. Within four years after the first application, he had removed from the land thirty or forty times as much hay as he could get in a year previous to it. Where did all this come from? What furnished



lacks, we add to its growth, and the application is a profitable one; if we add such as the crop did not require, or such as existed already in sufficient quantity in the soil, no effect is produced, and however useful it might have been on other soils, its application here was not profitable. Another theory formerly received with favor, but now discarded, is that of De Candolle and his followers, who supposed that the roots of plants excrete certain substances similar to the excretions of animals, and that these excrements were injurious to a succeeding crop of the same kind, but harmless and even fertilizing to some others, and so, when a field after repeated crops of wheat refused longer to yield the same, but would produce a fair crop of something else, the fact was explained by this "excretion theory" in an apparently simple and intelligible manner, and when it was found that wheat would again grow after a bare fallow, it was explained by saying that the poisonous excrements of former crops had in the meantime become decomposed and converted into food for a new crop of wheat. Plausible as this theory at first appears, and popular as it once was, it is now universally discarded by the best authorities as without foundation in fact, and of course utterly valueless.

The one most generally received at the present day, is what is known as the "mineral theory," which, although it does not satisfactorily and fully account for *all* the known results of rotation, some of which suggest the idea that collateral circumstances, independent of the inorganic constituents of the soil, may exert a hitherto unob-

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its mineral constituents? Certainly not the soil alone, for that produced but four or five hundred pounds before; not the muscle bed alone, for if it did, the second application would have given another eight or ten tons; but both together—the muscle bed supplied the deficiencies of the soil, and by its means, very soon every thing in the soil which Nature's processes could convert into hay was drawn forth and carried off.

If the manure yielded by the three tons cut the first year had been returned, and the same repeated each succeeding year, instead of ever failing, the productiveness of the land would doubtless have been fully maintained, and even steadily increased.

Now which in reality was the more blame-worthy of the two—the muscle bed for doing all the good it could, by bringing the land into a condition to yield three tons per acre, and which yield could have been, *by making proper returns*, maintained forever, or the farmer, who, not content with this, nor willing to deal honestly with his land, so used, or abused, its assistance as to utterly exhaust it? Such wisdom is equalled only by his who killed the goose which laid the golden egg, instead of properly caring for it and allowing it a reasonable amount of food.

served or unestimated influence on production, yet being in a good degree at least based on known truth, is worthy of careful consideration, and may prove suggestive of improved practice. It may be briefly explained as follows: The analyses of plants show that they all contain a certain amount of inorganic ingredients, or in other words, of mineral substances, which, after the combustion of the plant, remain behind in the form of ashes. This ash is that portion of the plant which it obtained from the soil, (the portion which was obtained from the atmosphere and from moisture having all passed away in gaseous form,) and consists of lime, potash, soda, silica, phosphoric acid, and other substances, and *in proportions varying greatly according to the plant, from the combustion of which the ash is obtained.*

Thus we find that clover, potatoes, turnips, &c., have drawn heavily upon the potash in the soil, while wheat and other cereal crops demand more largely of phosphoric acid, and leguminous plants, as peas, beans, &c., abstract lime in abundance, and so of all others, the ingredients or the proportions of the ingredients of no two being exactly alike; each having its own distinct and specific requirements. As these mineral substances could not be furnished to the plant either from the atmosphere or from water, it is clear that they must have been derived from the soil, and it is demonstrably certain, having been proved by the most careful and decisive experiments, that the absence from the soil of the proper quantity of any one of the necessary elements, will prevent the perfect development of the plant, and that its presence in the soil or its addition to it by means of manure, is as necessary a condition of successful growth as is light, air or moisture.

Some of these mineral substances, as potash, phosphoric acid, &c., exist in different soils in widely differing proportions, and in most cases in very limited quantities. Now, as the requirements of different species or families of plants vary so much from each other, that a soil, which, after successive crops of one plant being removed from it, refuses longer to produce a remunerating crop, (that is to say, will not produce a respectable crop without a too costly manurial application to supply its wants,) may yet yield freely of another species, the value of a judicious rotation stands out in a strong light.

To illustrate this principle farther, let us suppose the capital of a merchant commencing business to consist of coin lying in a bank of deposit, and to be composed of eagles, sovereigns, napoleons, roubles and doubloons, which he could draw thence to be employed *only for specific purposes*, and by no manner of brokerage could he use them interchangeably, to wit: with the eagles he might purchase cotton and flour, with the sovereigns cloths and steel, with the napoleons silks and wines, with the roubles hemp and duck, and with the doubloons sugar and molasses. It surely needs no argument to show that if he employs only a portion of his capital, he is not a farthing the richer for the possession of the rest. So with the farmer—he has deposited in his banks various elements of fertility, and existing in various proportions. These are of no value to him until drawn out, and if it be wise for him to draw at all, it is wise so to adapt his drafts as to obtain the greatest amount possible. The cases are unlike in this respect, that while the merchant might draw for only one at a time, the farmer in any crop would draw not for one, but for several, perhaps, for most, but the fact that different crops draw in so different proportions, still leaves a substantial similarity between them.

If we suppose, farther, that the merchant be ignorant of the exact amount of capital thus subject to his drafts, and of the relative proportion of each sort of coin, and has no means of ascertaining but by drawing for it; that he could draw only once a year, in April or May, and his drafts be honored or protested in October, we have a case still more nearly parallel to that of the farmer who has an unknown amount of the elements of hay, grain, roots, &c., and existing in unknown proportions; and it behooves both alike to draw for all they can. The universally acknowledged importance of manure to the farmer is based upon what? Just this: that by its application he restores to the land the needful elements which were removed from the soil in the crops taken off. Now, if by modifying our modes of operation, we can more economically employ the elements of fertility which are in the soil, or draw for them in such proportions that we should realize a greater amount of products, it would be an actual gain, equivalent to the addition of as much manure as would suffice to produce the difference; and if we thus effect a gain, we may hold on to it, for it is certain that the greater the

products of the farm, the greater will be the means of the farmer to enrich his lands. If he consume his crops at home, as he should always do to large extent, he has an annual supply of manure at hand. If he sell them, he can well afford to purchase enough of fertilizing materials to make good to the soil the deficiency occasioned by cropping. As we have before seen, plants derive a portion of their subsistence from the atmosphere. Their roots are constantly at work decomposing, rendering soluble, and appropriating portions of soil before unavailable; so that if due heed be given to returning what manure the crops will yield, our lands may be forever gaining in fertility.

In speaking of manures a few pages back, reference was made to the great waste now existing in the State, as testified to by many of our best farmers in the report of last year, and of the immense gain which would result from simply saving what is now needlessly lost. But supposing all this fully accomplished, to-day, would the limit of improvement be reached? By no means; for we have in our soil capabilities which have never yet been called into action, and which never will be and never can be until drawn upon in such a way that nature can honor the draft without violation of her unalterable laws, and this can only be done by a judicious rotation of crops.

With the hope of obtaining some valuable results from the experience of our best farmers as to the most judicious rotations to adopt, so far as proved upon our soils, some questions of the circular were directed to this end, but I regret to say that little has been elicited. From some sources, whence satisfactory replies were looked for with most confidence, the following answers, or similar ones, are received: "I do not know." "Am not prepared to express an opinion." "That is just what we need most to know," &c. In other instances, the prevailing practice is stated without any expression of opinion as to its merits or faults, as thus:

"Pretty generally corn or potatoes is planted on greensward, turned over in fall or spring, with manure the first year, and the next, it is stocked down with wheat, barley or oats, to remain as permanent mowing until it no longer pays for getting. This is sometimes varied by taking a previous crop of oats, sometimes by planting two years in succession."

In not a few instances, there is an apparent misapprehension of the term "rotation," as it seems to be understood to mean any sort of succession, whether recurring at regular intervals or not, and a course is recommended as a rotation which is evidently not intended to be immediately repeated when once gone through with, as for instance :

"My favorite rotation is potatoes the first year, corn the second, and wheat with grass seed the third."

Now if this was actually intended as a *rotation*, it follows that the fourth year the land would be again planted to potatoes, and the fifth to corn, and the sixth sowed to wheat with grass seed, and so on; for the very idea of a regular rotation involves a return to the same crop with which we started, when once the series is gone through with, and after a definite, and not an indefinite or uncertain number of years. By rotary motion we understand such as that of a wheel turning on its axis. Let the spokes, if you please, represent the crops—they may be many or few, of one kind or another—when the wheel has rotated once, it comes to precisely the position whence it started, and if the rotation be kept up, we have repetition of the same.

There are two very good reasons for believing that the course above recommended was not intended as a rotation, however "favorite" the practice might be with the writer; first, the grass seed would be thrown away, and next, no Maine farmer (of my acquaintance) proposes to dispense with a hay crop, and here it is entirely omitted.

Some few recommend a definite rotation; one as follows:—

"Our rotation is first year potatoes, second corn, third wheat with grass seed, fourth, fifth, sixth and seventh hay."

Another, who cultivates a light soil, says:

"Potatoes first year, corn the second, wheat the third, with grass, fourth and fifth hay; and if we think the land equal to it, take oats for a sixth, or the last year."

Another:

"On our grass farms we turn the sod smoothly early in September, having added coarse manure; in spring put on compost, sow wheat or barley with grass seed, mow three years, and then repeat; and on farms which grow mostly stock; oats and peas first year, potatoes the



second, corn, or part corn and part turnips the third, grain the fourth, hay fifth, sixth and seventh. We do not pasture our tilled lands, having plenty of broken and rocky land for this purpose, which is unfit for tillage."

Another says:

"There is very little regularity in this matter, generally speaking. The rotation which I have adopted and found successful, is for first year potatoes, or part of other roots, on the sward, with five cords green manure turned in; second year corn, with ten cords good compost; third year, split the hills with a small plow and harrow crosswise, adding a little manure if I have it, and sow wheat or barley, with fifteen to twenty bushels of *good* hay chaff (I grow my own seed) to the acre. This I consider equal to so many pounds of clover, and so many pints of berds grass. Then cut hay for three years, and pasture for two; so I get round in eight years, and find my crops improving every time with the treatment. Hay yields about three tons first year, two to two and a half the second, and one and a half to two the third, varying with the season, but the land being in good heart, the difference of seasons is not felt so much as on poorer fields."

Another says:

"First year oats or buckwheat, second potatoes, third turnips or sometimes corn, fourth wheat and seeded down, fifth and sixth hay, not forgetting a liberal coat of manure the first, second and third years."

Our correspondent who writes thus from Washington county, is fortunate indeed, if he can command a "liberal supply" of manure for half his tilled land every year. This is an excellent rotation without doubt for his soil, and very likely to beget an annual increase of manure. Most of our farmers, however, must for the present be content with a "liberal coat of manure" for one year out of six; and one desirable point to understand fully in this matter of rotation, is, on what crop it will do the most good, both immediate and ultimate.

Another recommendation is:

"Corn, potatoes or roots the first year, also for the second, but changing the particular crop; third year grass seed, with wheat or barley; fourth, fifth and sixth years, hay; then plow and repeat."

This, as a rule for practice, lacks definiteness, there being some margin for choice between "corn, potatoes or roots," also in the

order of succession, and with regard to which crop or crops should receive the manure.

Another writes :

“The almost universal practice is to plow sward for corn and potatoes in the fall or spring; corn to be followed by wheat, potatoes by oats or barley. My own plan is to plow late in autumn, and as early as possible in spring sow three bushels of oats and fifteen pounds southern clover per acre; harvest the oats early; let the clover grow until near time for frost, then plow it in, and in spring plant corn, manuring well with compost in the hill, to be followed by wheat and grass seed, and mowed four years. On a portion of my land this is varied by using long manure on the sward, and planting potatoes, to be followed by barley, and then hay.”

Another says :

“The best rotation must vary with the circumstances of the farm. A good course, ordinarily, is—pasture—pasture—oats—roots—wheat or barley—hay—hay. Or if this is too long, and oats are not needed for the stock, leave them out, and the land would improve more rapidly by taking off only one crop of hay in the course. The great amount of straw and roots will keep the stock.

In studying out the best rotations for our soil and climate, we may learn something from the practice of others; and as the favorite rotations in England, where farming has attained its greatest perfection, may not be familiar to all, it may be well to mention a few; not that they are to be *copied* by us, (for if there were no other reason, it were enough that they cannot and do not grow Indian corn,) but useful hints may be gathered. The system most in favor there, on good and light lands, is the one known as the Norfolk rotation. In this, nearly half the land is carefully and richly kept in permanent pasture, and the rest, or the arable land, is cultivated in a four field course, viz. : first year, roots, chiefly turnips; second, wheat; third, clover, or clover and grass; fourth, barley. By this rotation, nearly or quite double the crops are obtained as were yielded by the old fashioned mode. The starting point, and, in fact, the pivot of the system is the turnip crop, with its treatment, and the amount of manure yielded by its consumption. No pains are spared upon it, and to it is given almost all their manure. Thus it insures the crops following it, and produces largely of meat, wool, milk, &c.

“Wherever it is introduced and thrives, fertility follows. The value of a farm is most frequently estimated by the extent of ground which can be profitably devoted to this crop.”

On the less fertile soils of Northumberland, what is called the easy-going five shift course is in use, viz.: first, oats; second, turnips; third, wheat or barley; fourth, clover and grass; fifth, clover and grass.

That of the Lothians extends to six years, viz.: first, oats; second, potatoes and beans; third, wheat; fourth, turnips; fifth, barley; sixth, grass. In other sections, different rotations prevail, but these are the more prominent; and it is to be noticed that great importance is attached to root crops in all, except on soils so very stiff that they cannot be cultivated to advantage. In such, beans are often substituted; but this crop adds very little to the manure heap, compared with roots, nor can it in most cases so well economize the elements of fertility in the soil.

There is a plain, sensible little tract “On the general management of a farm, showing how an exhausted soil may be rendered fertile without the aid of any capital,” purporting to have been written by a farmer in the district of Montreal, which has been extensively circulated in the Provinces adjoining Maine on its north-eastern and north-western borders, and as I am informed, has been instrumental in effecting great improvements in the general style of husbandry; and as the soil and climate of these sections is not materially unlike our own, it may be well to quote from this also.

“The *habitués* of Lower Canada are in general thrifty and industrious: their farms look well, although they are, for the most part, worn out. All that they want is a *good system*, and such a system, to be available, ought to possess the following qualities, viz.:

First. It ought to be economical, and not require more capital than the actual system, or rather than the present absence of system, requires. It is undoubtedly of great advantage to apply capital to the land, but this advantage is in general beyond the reach of our farmers, as their means are not sufficient.

Second. It ought to restore fertility to the soil, and maintain it by the products of the land itself. Manures got from other quarters than the farm itself are always expensive, and, at a distance from town, are often not to be had at all.

Third. It ought to be simple and of easy application.

Fourth. Finally, it ought to have experience clearly in its favor. The author of this essay, having for a long time made the prac-

tical application of a system which unites all these advantages in a high degree, believes that it is his duty and privilege to submit it to his fellow Colonists, and he feels certain, that if this plan is adopted, it will render the country more productive, and consequently more prosperous; it will, in the space of six years, convert worn out, worthless, weedy land into smiling, rich and fertile farms, and the small miserable animals of Lower Canada into valuable stock, and all that without a greater expenditure of labor and money than is incurred by the system actually in use.

Before explaining his system, however, the author will take the liberty of relating his own experience, and for greater clearness, he will speak in the first person.

I came to the country thirty years ago, and burdened with a debt of forty pounds; I leased a worn-out farm in Lower Canada of eighty-four acres, in the midst of a French population, and at an annual rent of forty-five pounds. Well, in the space of twenty-one years, I have paid my original debt, and saved enough to enable me to purchase in the same neighborhood a much better farm than the one I rented. The owner of the farm which I bought, was going on every year from bad to worse, until he was forced to sell it, whilst I, the tenant of a less productive farm, and paying rent all the while, was enabled to buy him out, as just said. What was the reason of this anomaly? The Canadian was stronger than me, had equally good health, and had no rent to pay. The reason was, that he had no system; he let his land become exhausted, and full of weeds; he let his stock starve; he wasted his manure, the gold of the farmer, and let everything go to ruin for want of method; but when I had got hold of this same farm, and had applied the system which I am about to describe, the whole was brought gradually, field by field, into good condition by the end of six years; since then, the condition of the land has steadily improved, and that by resources drawn wholly from within itself.

The system to which I allude, is known to all good farmers everywhere as the basis of all improvement, I mean that of a rotation of crops.

**ROTATION OF CROPS.** There are two sorts of reasons in favor of this plan of rotation of crops.

First. Because different plants draw from the soil different sorts of food, so that one plant will grow freely in a soil which is worn out as regards another.

Second. Because the crops being various, the occasional failure of one is not so much felt, seeing that the others furnish subsistence sufficiently without it.

The cultivation of a fair proportion of all the varieties of crops which Providence permits to grow readily, ought therefore to be considered as the best means of averting a famine; and what intelligent farmer, with the case of Canada and Ireland before him,

would wish to be limited to the culture of wheat and potatoes only?

I shall now explain the system of rotation, which, during thirty years' experience, I have found best suited to the climate, the soil and the actual condition of Lower Canada, and which I believe to be generally applicable to the lands held by the French Canadians, and herein I shall speak of nothing that I have not done myself and practiced with success.

**PLAN OF THE ROTATION.** Divide the arable portion of the farm, whatever may be its size, into six parts, as equal as possible, with a direct communication from the barn yard to each field, and from one field to the other, so that the cattle may pass from one to the other when required. This division into six fields may require on most farms new fencing, and it will be proper, beforehand, to see how this can be done with the least possible expense. I shall now suppose the farm prepared to receive the application of this system, and that is the one which I have found the best for even the poorest settler.

First. Root crop, such as turnips, carrots, beets, potatoes, parsnips, &c., and in cases where the land is not sufficiently open for a crop of this kind, the field must be left in fallow.

Second. Crop of wheat or barley.

Third. Crop of hay.

Fourth. Pasture.

Fifth. Pasture.

Sixth. Crop of oats or peas.

In beginning the application of this system, that field of the series which is in best condition for a root crop, should be called field

	A
The best for wheat or barley, . . . . .	B
That which is actually in hay, . . . . .	C
The pasture fields, . . . . .	D & E
That which is best for oats or peas, . . . . .	F

Each field for the first year ought to be appropriated to the crops above mentioned, and after the fashion now in use, except in the case of field A. By this plan, they will at all events still get as much from their five fields as they get at present.

The culture of field A and of crop number one come up together for the first year, and ought to be the object of special attention, as this is, in fact, the key to the whole system; for the good culture of this field has for object, and ought to have for its effect, not only a good crop the first year, but also to improve the land for the five other years of this rotation of crops.

In the following year, the cultivation of the different crops will be according to the following order:

- Crop number two in the field A,
- Crop number three in the field B,
- Crop number four in the field C,



Crop number five in the field D,  
 Crop number six in the field E,  
 Crop number one in the field F,

and so on, changing each year until the seventh, when crop number one comes back to field A, and the whole will then be in a good state of fertility, and free from weeds. The above system has been proved to be capable of restoring old land, and extirpating all weeds.

In order to render the thing more simple and easy of comprehension, I shall suppose myself to be again obliged to take a worn-out farm in the autumn of 1849. The first thing that I should do would be to divide the land into six fields, by proper fences, to prevent the cattle going from one field to the other; and I would then take for field A, that which appeared best for green crops or root crops; I would collect all the manure which I could find in or out of the barns, I would take up the flooring of the cow-house, stable and piggery, and I would take out as much of the soil underneath as I could get; for this soil is the essence of manure, one load of it being as good as four or five loads of common dung. The portion thus removed ought to be replaced by an equal quantity of ordinary soil, or, if it be possible, of bog earth, which might be removed when necessary afterwards.

The dung and other manure thus collected should be placed on the field A in September, or the beginning of October, spread with care, (as far as it will go.) and covered up in a shallow furrow. Manure aids the decomposition of straw and the weeds of the soil, and frees it from these plants, which thus help to keep the soluble portion of the manure until its juices become necessary for the crops of the succeeding years. The greater variety there is in the crops of this field, the better it will be, provided the soil is suitable for them. Thus this field ought, as nearly as possible, to look like a kitchen garden.

Under the actual circumstances of the country, I would particularly call the attention of farmers to the cultivation of the carrot as being one well adapted to our soil and climate. The carrot has fewer enemies than any other plant that I know: the best sort for field culture is the red Altringham, and the method of cultivating it is as follows:

**CULTURE OF THE CARROT.** The land which has been manured in the fall, as above described, ought to be plowed at least twice in the spring, the one furrow across the other, and both as deep as possible. It is then to be harrowed until it is properly mellow. You then make with the plow two furrows, distant two feet, or two feet three inches from each other, taking care to raise the soil as much as possible between each. You pass the roller over this plowed portion, and then with the corner of a hoe, make a small furrow or drill along the top of the rows; drop the seed into this furrow, and pass the roller over it again; this last operation will cover the seed sufficiently.

If you can get a seed-sower, that will simplify matters considerably. A roller is essential in the culture of root crops which spring from small seeds, but it can be readily got by all farmers. A log of twenty inches diameter, and five feet long, with a pole fixed at each end, will do the business admirably.

Carrot seeds (and you may say the same of the other seeds) ought to be soaked in rain or soft water, until they are about to sprout, and then rolled in quick-lime until the grains are dry enough not to stick to each other. When there is no lime, wood ashes will do as well. A pound of seed, if it be good, (and you ought always to try it before sowing,) will be sufficient for one acre of land. By the above plan, the young plant will come up before the weeds, so that it will be easy to distinguish the rows of carrots before the weeds appear; this renders the cleaning comparatively easy, since it may be done (except the thinning) by means of a cultivator. A man or a boy may guide it so as not to touch the rows of carrots or other crops, but only to raise the soil to a greater or less depth, at pleasure. As soon as the weeds appear, you draw it between the rows, so as to bring the soil as close as possible to the young carrots, but without touching or covering them. This process will keep the plants sufficiently clean until the time of thinning them and leaving them four or five inches apart from one another; soon afterwards, you may plow between the rows thus harrowed and raised. These operations do good to the plant by permitting air and moisture to have access, and by facilitating evaporation. My plan for gathering the carrots in autumn is to pass the plow along the right side of the plants as close as possible, without injuring them; this frees them on one side, and the stem is strong enough to allow us to haul up the roots by it afterwards.

This method of culture requires a good deal of labor, but the return is more than enough to recompense the farmer.

When we consider the large amount of nutritive matter contained in this root, and its general application to all the living things on a farm, its culture cannot be too strongly recommended; besides, it is relished by all animals, especially by working horses, to whom it may be given instead of oats.

I have dwelt particularly upon the culture of the carrot, because the same method applies to the culture of all the root crops which can be advantageously grown in this climate, such as parsnips, beets, mangolds and turnips.

Parsnips will grow in a close soil, almost in clay, and do not require cellars, since they will remain uninjured all winter in the ground. In this case, you will have them in the spring, affording a new and succulent food, at a time when it is most necessary. Every animal will eat parsnips with relish, and cows fed upon them yield a very rich milk.

Beets and mangolds have the same value as a crop, and as food

for milk cattle; but I do not consider them to be so good for fattening cattle.

[In spring all the manure made during the past winter should be carted to the field, placed in a heap, and twice turned. All bones should be gathered and broken up with a hammer, all coal and wood ashes, scrapings of sewers, the dung from the fowl-house, and the contents of the privy, should be collected and made into a compost, with dry loam or bog earth.

The above manure may be used for that portion of the field devoted to cabbages, potatoes and turnips. It should be put in the bottom of the drill on which the above are to be planted or sown.

When the ground is properly plowed and harrowed, and a sufficient quantity of sound seed sown, say at least four pounds to the acre, the turnip crop is as certain as any other.

The sowing of turnip seed should be commenced early in June, and may be continued up to 20th July. If the fly takes the first sowing, a second will be likely to succeed.

The turnips, when well up and getting strong, should be thinned out to a foot apart, and the hoe and cultivator passed through them, at least twice before they meet in the drills.]

If the land is too heavy for root crops, beans and peas will suit for number one, taking care to sow them in drills, and to prepare the land as above described for root crops.

If it be thought absolutely necessary to summer-fallow, that is, to plow without sowing, which only happens when the soil is so hard and heavy that it cannot be pulverized in any other way, you ought not to spread the manure on the land in the preceding fall, but plow the land and ridge and furrow it with as much care as for a crop. You need not touch it again before the month of June, when you must plow it again and harrow it so as to render it even, and destroy the roots of the weeds. You may then draw the furrows in a straight line, giving them a uniform breadth, and so as to facilitate drainage. About the middle of July, you must plow it again, and sow it with plenty of buckwheat. At the end of September, plow it again, having previously spread it with dung. In this case, the buckwheat is plowed under with the manure, and serves greatly to increase the latter. The land thus prepared ought to be sown with wheat in the ensuing spring, and you may add a little timothy and clover. A bushel of timothy will suffice for four or five acres, and three or four pounds of clover to each acre.

By following the method above described, you will have, in the year 1851, quadrupled, or more than quadrupled the fertility of the soil.

I have now done all that I can for field A. I have weeded and manured it as well as I can; and after having taken the crop of roots and the crop of wheat or barley next year, I leave this field to rest until the other fields have been improved in the same way, and

according to the method above described. When this shall have been effected that is to say, in the space of six years, or in the year 1856, the worst will be over, and the battle may be considered as gained. The fields will then be in a clean and fertile condition, and their value will consequently be greatly increased. The farm of seventy or eighty acres, which in 1849 only sustained three or four miserable cows, and perhaps no more than an equal number of sickly sheep, will be capable in less than ten years of furnishing an abundant subsistence for ten or twelve cattle, and other stock in the same proportion.

One of the great advantages of this system of rotation of crops is, that the pastures, which in summer furnish summer-feed for the stock, are in due proportion to the quantity of roots and hay destined to winter-feed them, and in due proportion to the straw which the grain crops yield for their bedding. I will observe here that farmers—except those who live near towns where they can easily procure manures—ought never to sell a single load of hay, straw, or roots, since the whole ought to be consumed on the farm, with the view of procuring a sufficiency of manure therefrom, whereby the fertility of the soil is to be sustained. But if the farmer is not to sell hay, or straw, or roots, what is he to sell? I answer, the third of the land being under this system appropriated to grain crops, he will always be able to sell a part of them. The half of the farm being in hay and pasture, will allow it to produce a large quantity of butter, cheese, butcher's meat and wool, and to sell a considerable part of these after having supplied the wants of the family. It may be said, that six years is a long time to wait for the renovation of the whole farm; but I will reply, that I know of no other means by which it may be done in less time, from its own resources; and it is worthy of observation that the land is improving every year. The produce is larger, even for the first year under this system, than it is under the present method of culture, and from year to year the land is improving, field by field, and is producing more and more, so as to pay the farmer better than it does at present, and to recompense him doubly afterwards, when the whole shall have been improved under a system of rotation.

It may be objected that two years of pasture is a long time of rest for the land; but you will observe that the land does not remain unproductive during this period of repose. This plan not only contributes to re-establish the almost exhausted fertility of the soil, but it is also the best means of furnishing the farmer with the first necessities of life, and the articles which, so to speak, will most readily find an outlet in our markets, such as beef, lamb, mutton, butter, cheese, wool, and other products already named."

If deemed desirable to try the above plan on such of our farms as have a sufficiency of pasture lands unfit for tillage, the benefits of

pasturing might perhaps be secured by a sufficient top-dressing, (also leaving the aftermath,) and a crop of hay be taken instead, during one of the pasture years, if not both; but no rotation can be deemed perfect here, which does not include the culture of Indian corn; and it should be borne in mind, that if potatoes be substituted for the other roots named, inasmuch as they neither demand nor receive at our hands so liberal manuring, nor so deep and thorough tillage, nor send their roots so deeply into the subsoil, the subsequent condition of the land must be correspondingly inferior, and the practice might be of no substantial benefit over what is ordinarily practiced at present.

Another rotation which has been highly commended in the Province of New Brunswick, is an eight years course, and embraces both potatoes and other roots. It is this: supposing the land to be in sod and in low condition, it is plowed late in the fall in furrows six to eight inches deep, laid flat and rolled; the first crop oats, seeded thick, harrowed and rolled; as soon as the oats are off, plow in the stubble; second crop potatoes, manured in the drill with at least ten cords barn-yard manure to the acre; third year wheat; fourth, turnips, carrots or beets, or a part of each, manured and planted in the drill, with at least as much manure as for the potatoes; fifth, barley or rye, and seeded down to herdsgrass and clover; sixth, seventh and eighth, hay, and at the expiration of the eighth year plowed again, and the course repeated. Sometimes this is varied by substituting Indian corn for the fourth crop, in whole or in part. This, it will be seen, gives eight crops, and all remunerating ones, for two years manure, and leaves the land better than when the course began.

I have just received from a highly intelligent and practical cultivator in the eastern part of the State, the following communication, in which a six years rotation is proposed, not in itself materially unlike several above named, but connected with so judicious treatment as renders it a most valuable contribution:

“If the primary object, or the sole object is to bring back the fertility of partially exhausted land, I would recommend the careful husbandry of all the resources of the farm—the slops from the house, the liquid from the stables and cattle stalls, the contents of the privy, poultry house and hog pen, mixed with sufficient *dry* muck, sods or loam to absorb all the liquid, and kept from the wasting influ-



ences of the atmosphere, will be found sufficient to annually renovate quite a piece, say one acre. This will give roots enough to keep three hogs, and these, if well supplied with material, will manure half an acre more; thus the ratio is ever increasing. I see but one practical objection to this course; that is the great amount of labor involved; but the farmer who has an exhausted soil may practice this course to the extent of his ability. Then—but it is impossible to give directions without knowing the situation both of the farm and farmer. I may suppose a case or two, such as we frequently see: Farmer A has one hundred acres of cleared land, fifty of which he mows over and gets twenty-five tons of hay; he plants three acres, and sows grain on ten more; the produce of his farm may be set down at twenty-five tons hay, ten tons of straw, fifty bushels wheat, two hundred bushels oats, one hundred bushels potatoes, twenty bushels corn, and five hundred bushels roots. This is as much as one man can do—more than most men can. How shall he dispose of it, so as to get a living out of it, and still improve his farm, is a question many have asked, and are still asking. It must in the first place be made to produce more hay; it now keeps fifteen head of neat cattle, or a pair of horses and eleven head of neat cattle (say cows.) Now sell five cows, and give the pasturage, together with twenty acres of the mowing land for pasture to the remainder; buy with the proceeds of the stock so sold, guano and bone-dust enough to manure six acres sufficiently to produce two tons of hay per acre, for three years at least. This, with the increased crop of roots, will enable him to turn out the remainder of his grass land to pasture, and still have fodder for his stock, and he will probably find that the six cows, with their increased quantity of feed, are fully equal to the eleven sparingly fed; then by a rotation, in which the land has three years in pasture, and three years in mowing and tillage, a farm may be rapidly improved. But I find this improvement much more easy in theory than in practice. The absolute necessity of eating and wearing clothes, to say nothing about keeping up appearances, makes such a draft upon the farmer's time, as to leave him but little opportunity for improving either the farm or the mind.

To throw aside this scribbling, and answer the question more directly—'Where there is lack of capital to purchase fertilizers,' there is probably lack of capital for any improvement, as this is one of the least expensive. This lack must in some way be supplied, by selling part of the stock or farm, if no other means offer; and when capital is obtained which can be spared, let the farmer divide his farm into two equal fields—pasture one—manure as much of the other as his means will allow him to do *well*, putting five hundred to one thousand pounds bone-dust on an acre of such as is intended for wheat or barley, and to be laid down to grass. Till this manured part *thoroughly*, and mow the remainder. Next year, fence off from the pastured field one-third, to be manured and cultivated with

corn, beans, roots, &c.; and also from the other field fence off one-third, which was mowed last year, to be turned into pasture; lay down with wheat or barley, not forgetting the bone, that which was tilled, and mow what was in wheat last year. Next year divide and change again, and so on around, as shown in the annexed sketch:

Field of 24 acres producing 12 tons of Hay.						
1st year . . .	Corn, Roots, &c.	Wheat.	Hay.	Pasture.		
2d year . . .	Wheat & Barley.	Hay.	Pasture.	Pasture.	Corn, &c.	
3d year . . .	Hay.	Pasture.	Pasture.	Pasture.	Corn, &c.	Wheat, &c.
4th year . . .	Pasture.	Pasture.	Pasture.	Corn, &c. Drained.	Wheat, &c.	Hay.
5th year . . .	Pasture.	Pasture.	Corn. Drained.	Wheat.	Hay.	Pasture.
6th year . . .	Pasture.	Corn. Drained.	Wheat.	Hay.	Pasture.	Pasture.
7th year . . .	Corn, &c. Drained.	Wheat.	Hay.	Pasture.	Pasture.	Pasture.

The product of this seventh year may fairly be set at one hundred bushels corn, one thousand bushels roots, beans, pumpkins, &c., fifty bushels wheat, twelve tons hay, four tons straw, corn fodder, and pasturage for eight cows.

The first three years will require all the spare time to build division fences; after that, the spare time may make drains."

† In concluding upon this topic, it may be remarked that if an examination of the subject of rotation of crops by our farmers at large, should result in nothing further than a reduction of the number of successive hay crops, so as to retain a tolerable degree of fertility in the land, with which to commence anew their series of crops, there would be an immense gain—for it is very certain that one of the most active agencies which has effected the exhaustion of soil, from which we now suffer, is the practice so lamentably common of cropping fields for hay, so long as a scythe in being swung over them meets with perceptible resistance.

Perhaps the easiest way to accomplish this, would be to reduce the number of acres under cultivation, either by selling off, or turning out to pasture, or allowing to grow up to wood, so much as would

leave only what could be well and profitably managed. If in addition to this, some *system* be adopted and faithfully adhered to, leaving to chance, whim or convenience no dictation as to the operations of any one year, much more will be gained. Such system each farmer should make a matter of careful study, as thus only can he find that best suited to his own soil and circumstances; *and it should embrace a much larger proportion of root culture than at present prevails, for thus we may get more food per acre, at less cost, and more economically maintain the fertility of our soil, than in any other way.*

ROOT CULTURE has received so little attention at the hands of the great mass of the farmers of Maine, (excepting that of the potato.) that it was deemed advisable to obtain, so far as practicable, the results of the experience and observation of such as had given attention to the subject, and several questions of the circular were directed to this end. It will be noticed that great diversity of opinion is expressed in the replies which are appended, in regard to the comparative value of carrots, turnips and beets, as food for stock. That one root is preferable to another as better adapted to particular localities and the varieties of soil, climate, &c., is doubtless true; but with regard to their *comparative* value as articles of food, when each is well grown, it is impossible that all the opinions below expressed can be correct. We have great need, not only of increased attention to their culture, but of accurate and reliable experiments to prove their value compared with one another, and also with hay and other forage crops.

“Beets and carrots will require three or four times the labor per acre as corn, rutabagas twice as much. Beets and carrots will yield five hundred bushels per acre, and rutabagas six hundred to eight hundred bushels. For cattle and sheep, seventy-five bushels of rutabagas, forty-five of beets, and forty bushels of carrots, are equal to one ton of hay. Potatoes require less labor per acre than corn, and, of late, produce one hundred to one hundred and fifty bushels per acre, but carrots are worth fifty per cent. more than potatoes for cattle, especially cows.

The rutabaga is much easier cultivated than the carrot or beet, and yields more, but it is not of half the value. They are worth the most for sheep, but are valuable for other stock, especially if poor hay and straw are fed out to cattle. My mode of culture is, to sow in drills, two or two and a half feet apart; in the first weed-

ing, thin out where too thick, but thin sparingly the first time; and at the second hoeing, thin from nine to twelve inches distance between plants; then hoe the third time, and more, if necessary. Carrots and beets I sow in drills, eighteen to twenty inches apart, and if kept clean from weeds, will bear to be a little thicker in the row. The ground should be well dressed with fine manure, and occasionally a sprinkling of ashes and plaster mixed, during the fore part of the season."

D. NOYES, Norway.

"I am not prepared to say what kind of roots are best for field culture. Carrots are raised more extensively in this town than any other root, ear loads of which were sent to the Kennebec last year for the market. On the light sandy soils of the sea-board, they are probably better adapted to field culture than any other root; but on less porous soils, the rutabaga is successfully cultivated, though it probably would not yield so many tons to the acre as the carrot. I think a ton of rutabagas are actually worth as much as a ton and a half of carrots. Roots are no doubt valuable for neat cattle in winter, but carrots have been over-rated in this vicinity, while turnips (and perhaps parsnips) have been too much neglected."

JAMES W. AMBROSE, Wells.

"Beets are, in my opinion, decidedly the most profitable. I have tried them all. I can grow one-third more beets at the same cost than carrots."

AARON HOAG, Gardiner.

"Turnips first, carrots second, beets third. Modes of culture similar for all. Plow deep, say twelve or fourteen inches; harrow, and if lumpy, roll, and spread on six to eight cords of old stable manure to the acre; plow again eight or ten inches deep, harrow well, then furrow for the rows two feet apart, as deep as possible. Strew along in the bottom of the furrow, eight cords of old well rotted manure to the acre. Fill up the furrow with a hoe, pulverize the soil well, so that no hard lumps go into the furrow. Ridge up four or five inches above the surface; then sow on the top of the ridge; if sowed by hand, make a little trench along on the ridge before sowing, sow in the trench, cover one inch deep, hoe often, and thin to a proper distance. One-half less dressing, and one-half of the earth on top of the dressing, in the furrow, will be right for turnips. Feed carrots to hogs from harvest time to the last of May. Feed carrots and beets to milch cows through the winter season. Feed turnips to young stock while using coarse or rough fodder; the poorer the fodder the more turnips."

J. DAVIS, Webster.

"I think turnips the best field crop, although carrots might do as well. I have never cultivated them as a field crop. They do well

in the garden. As to the value of roots, I think carrots the best to feed all kinds of animals, even to hogs. I wintered a pig, principally on carrots last winter, and he grew well. I raised them in my garden, at the rate of one thousand bushels to the acre; special care was taken with them."

T. J. BURBANK, Cooper.

"Carrots are the principal root crop raised in this vicinity; our sandy soils furnish a good bed while the other requisite, quick acting manure, we find in sea manure. Carrots grow best on the same land a number of years in succession: it is less work to clear them of weeds. They are generally cultivated in flat beds, with from fourteen to eighteen inches between the rows, and from four to six inches in the rows. They are good food for all kind of stock. Since the failure of the potato crop, they have taken the place of that root for feeding hogs, raw carrots making better feed for store hogs than potatoes, and by boiling and mixing with meal will fatten them very fast."

JOHN S. WELLS, Wells.

"I cultivate carrots, sugar beets, rutabagas, and flat English turnips: the three first by themselves in the field. Have been accustomed to sow them by machine, which answers excellently for turnip, and perhaps for carrot seed, if mixed with something to prevent their running too thickly through the large aperture required by their peculiar form and character. I have lately heard an equal quantity of radish seed suggested to regulate the measure, and from its rapid growth and early maturity, prepare the way for the carrot, and perhaps somewhat check the intrusion of weeds upon its slow moulded companion. From several years experience, I am satisfied that we cannot, except in a very wet planting season, dispense with soaking beet seed, which would prevent its passing readily through the machine. I have therefore determined to sow them by hand hereafter. Of flat turnips, I have for several years obtained a crop of from one to three hundred bushels, by sowing the seed from a machine between the rows of corn after the last hoeing—sowing and harvesting being the only labor bestowed upon them. I feed out to my stock all the vegetables which I raise, and I know that they contribute directly to the health of the animals, and by the aid they afford to the process of assimilation, gain for them a greater amount of nutrition from their dry food."

J. F. ANDERSON, So. Windham.

"The cost of an acre of rutabagas, as we grow them here, is:

Plowing, . . . . .	\$2 00
Harrowing, . . . . .	1 00
Opening drills, two and a half feet apart, . . . . .	1 00
Three hundred pounds guano, . . . . .	12 00



Sifting and applying guano,	.	.	1 00
Covering drills,	.	.	1 00
Leveling down drills and sowing seed,	.	.	3 00
Thinning and weeding,	.	.	6 00
Cultivator and hoe,	.	.	4 00
Pulling and trimming,	.	.	8 00
Drawing home and housing,	.	.	4 00
Seed,	.	.	2 00
Total,			\$45 00

We grow our rutabagas on land which was in oats the previous year, plowing in the stubble in the fall, and harrow, drill and sow about 15th to 20th June, and usually obtain from six to ten hundred bushels. Eight hundred bushels may be considered an average crop. We have no experience in roots, as a *field crop*, except the rutabaga and potato. Have tried various other kinds of turnips from imported seeds distributed by the Patent Office, and have pronounced them all worthless, as compared with the rutabaga, either for cattle or the table. Our method of culture of this root, adopted from many years experience, and successfully practiced for the last eight years, is as set forth above; or to repeat:

1. Plow deep in the fall, (our land is clay loam.)
2. In June, harrow.
3. Open the drills two and a half feet apart, twelve inches deep—we use the common two-horse plow, going twice in each drill, turning a furrow out upon each side; to do this with ease and regularity, have your double tree five feet long.
4. Strew guano, (previously pounded and sifted,) in these furrows, at the rate of half a pint to a rod in length of row.
5. Cover, by turning back the two furrows thrown out, letting the plow run as deep as the bottom of the drills.
6. Level down the drills thus made, and make the surface fine, by a fine garden rake or drag hoe.
7. Sow the seed *immediately*, while the turned up earth is fresh and moist.
8. Thin to ten inches apart as soon as the second or rough leaves are well grown, say an inch long.
9. Stir the ground between the rows and about the plants with cultivator and hoe, as often as weeds show themselves or the soil gets hard; hoe no earth to the plants, but keep it light about them.
10. Seize the plant by the top with the left hand, pull it up, and with one light blow of a knife made of a piece of old scythe, strike off the tap root and dirt adhering; another blow strikes off the turnip from the top; drop two rows of turnips together and throw the tops into piles; in this way where the crop is good, a smart man will pull and trim one hundred and fifty bushels a day. I have been thus particular in detail, because so simple a thing as raising turnips is considered a great mystery by many. Every thing depends upon rapid growth at first start, and seasonable thinning and weeding.

Carrots we have grown only to the extent of quarter of an acre

per annum, and that by spade culture. The best method I have found as yet, is to spread and dig in a good coat of fresh stable manure in the fall; dig the ground again in the spring, eighteen inches deep, rake fine, sow about 1st of June, (May with you,) keep clean; thin early, to six inches apart in the row, the rows fifteen inches apart. Crop, three hundred and twenty bushels on quarter acre. I have no doubt carrots can be successfully cultivated as a field crop by plowing in deep, in the fall, a good coat of fresh stable manure. I have not practiced it, from having too many other things to do. I usually have a piece of couch grass to kill, or something of that kind to do, in places where the plow cannot safely be used, and I find the spade and a crop of carrots very effective for the purpose. As for the use and value of roots, rutabagas will make fat beef, good milk, and will keep store hogs in good condition, and is valuable for feeding *rats*, unless your cellar is rat proof. For hogs, chop up, with a root cutter, half a bushel for each hog, twice a day, (Suffolks will keep fat on half a bushel a day.) For cows, one bushel a day, and for fattening oxen three to four bushels a day each. Horses will thank you in a way perfectly understandable for a small feed occasionally. Carrots are more valuable for any of the above purposes. I should put the value of rutabagas for stock, at ten cents per bushel, and of carrots, at twenty cents. Either of them can be raised for less than that amount, and by their aid the straw and coarse fodder of the farm can be made available as cattle feed. More stock can be kept, more manure made, and more roots, straw, grass, grain, &c., grown, ad infinitum."

W. D. DANA, Perry.

While deeming it a duty to urge increased attention to root culture, from a conviction that it would result in notable benefit to agriculture, it is deemed not less a duty to caution cultivators from expecting too great results from a given amount of roots. Some of the estimates above given are believed to be decidedly larger than facts will warrant, so far as regards the actual amount of nutritive matter which they contain. Where only a small quantity of any one of the roots mentioned is fed out in connection with coarse, dry fodder, the help which it affords in the process of digestion may be fully equivalent, and perhaps even greater, than the good to be derived from an equal weight of hay, and to this extent, and in this connection, they may be said to be of equal value, but when used in larger proportion we must depend for profit upon the actual nutritive matter which they contain, and this it is highly desirable to ascertain with precision and accuracy. It can only be done by

repeated, protracted, and carefully conducted experiments, weighing the food daily, and weighing the animals fed at proper intervals.

The indications of analysis would hardly lead us to anticipate finding fifty, or even seventy-five bushels a fair equivalent of a ton of good, well cured herds grass or clover; yet in connection with what we know of the expense attending their culture, the amount we can grow, and the subsequent condition of the land where a good crop has grown, they do lead us to anticipate a greater amount of food, and cheaper, than we can otherwise obtain, and better crops in after years.

The analysis\* of the (white) turnip by competent chemists shows it to contain in one hundred parts, of

Nitrogenized, or flesh-forming principles, as albumen, fibrine, &c.,	. . . . .	1.14
Heat-producing and fat-forming principles, as starch, sugar, gum, pectin, &c.,	. . . . .	7.80
Mineral substances, or ash,	. . . . .	.63
Water,	. . . . .	90.43
		<hr/>
		100.00

In the Swede, or rutabaga—

Nitrogenous matters capable of producing flesh,		1.45
Non-nitrogenized substances, which support respiration and lay on fat,	. . . . .	8.67
Ash,	. . . . .	.62
Water,	. . . . .	89.26
		<hr/>
		100.00

In the carrot are found, of

Flesh-forming principles,	. . . . .	1.48
Heat-producing, &c.,	. . . . .	11.61
Ash,	. . . . .	.81
Water,	. . . . .	86.10
		<hr/>
		100.00

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\*An analysis in which the *proximate constituents* are arranged into the two great classes of alimentary substances, is deemed to be more useful for the farmer-student, and for our present purpose, than one in which the roots, &c., are resolved into their *ultimate elements*, as potash, soda, lime, phosphoric, and other acids, &c.

In the Mangold wurtzel,

Flesh-forming matter,	.	.	.	1.81
Heat-giving, &c.,	.	.	.	11.19
Ash,	.	.	.	.96
Water,	.	.	.	86.04
				<hr/>
				100.00

Now, if we compare these with the analysis of red clover, as freshly cut in the field, which is as follows:

Flesh-forming principles,	.	.	.	4.27
Heat-producing, &c.,	.	.	.	9.15
Woody fibre,	.	.	.	3.76
Ash,	.	.	.	1.82
Water,	.	.	.	81.00
				<hr/>
				100.00

we see that the nutritive matter of the carrot, the beet, and newly cut clover, to be nearly alike in amount, and about thirteen per cent. of their weight, and that of the turnip to be about nine or ten per cent. of its weight, or about two-thirds to three-fourths as much as the others.

If we take the above as the basis of our estimate, and allow a shrinkage of two-thirds in curing the clover, we cannot rate the roots at more than a third its value when dry, nor over a quarter, if it shrink three-fourths;\* and so far as we can judge from the analyses of the various grasses usually cultivated, it seems hardly safe to reckon the actual nutritive power of roots at over a fourth that of *good* hay. It should be borne in mind, however, that the economical value of any article of food cannot be absolutely and accurately determined by analysis, inasmuch as a great deal may depend upon peculiarities of constitution in each, the practical results of which, when used as food, it is beyond the power of analysis to compute or predict; and hence the necessity of careful and accurate experiments in feeding. In some respects, the carrot seems to

\* This may seem a large allowance, but if the sample analyzed was cut so green as to contain eighty per cent. of water, such allowance would still leave a fifth of its whole weight, or twenty per cent. of water remaining in the cured clover, which may be not far from the usual fact, when simply dried in the open air.

possess advantages over the turnip and beet, in being more uniformly relished by all kinds of stock. It keeps horses in good condition, is excellent for fattening oxen, causes a free flow of milk in cows, and imparts no bad taste to it; with manure and good treatment it succeeds well in soils which are sandy, and naturally inferior; is less liable than the others to disease and the ravages of insects, and by its long fusiform roots and minor rootlets penetrating to great depth, obtains a good share of its nutriment from the subsoil, and does good service in loosening the same, both finely and deeply.

**DEEPER TILLAGE.** Aside from the means heretofore alluded to for the restoration of lost fertility, several of which depend in part for their efficacy upon mechanical improvement of the soil, and a deeper culture of it, much may be accomplished by this alone. One correspondent replies to the query as follows:

“If I were to undertake the renovation of worn out lands, I would mainly rely upon deeper tillage, and by bringing to the surface the yet untried elements of the soil, endeavor to find something which would serve as a basis for new crops. In practicing this, however, I would take up no more at once, than could be dealt thoroughly with, and left in an improved condition.”

The suggestion is a valuable one. Deeper tillage and better tillage are means not to be neglected, for experience has long shown that the physical structure of a soil has much to do with its powers of production, and that where land has given out, it is not always because it is actually, as it is seemingly, exhausted, but because its latent or buried fertilizing powers have not been fully brought into requisition. All operations which tend to a more thorough pulverization and deepening of the soil, will help to bring them forth—of these, plowing ranks first.

Good plowing, in fact, lies at the basis of a good practical husbandry. No other work done upon the farm is so important as this. If it be not such as it should be, the resources of the soil cannot, in the present state of the art of agriculture, be made available. Deep plowing is repeatedly recommended as a means of renovation for exhausted lands, and there cannot be a doubt that by its means a great deal of land, which now produces little, might be improved. Unlike green manuring, it does not add directly to the amount of plant food in the soil, but rather serves to bring forth what is already



there, but not hitherto drawn upon. There is often, within a moderate distance from the surface, a great amount of mineral matter, which only needs full and free exposure to the atmosphere to yield food in abundance; but while lying undisturbed, is not in a condition to be of any practical value.

That there are occasional instances in which deep plowing may for the present be injurious, by bringing up some salt of iron, or other substance, which before protracted exposure, may operate unfavorably upon the growth of plants is true, and should induce caution with regard to going very deep at once; but the cases are rare, if they even occur at all, in which an additional inch may not be added to the depth of plowing every year, until it reaches a foot in depth, at least, not only without harm, but with positive advantage. This is now so well understood by our best farmers, that the average depth of plowing is probably nearly, or quite double what was customary thirty years ago, and it is believed that had the depth of plowing in years past been as great as now, the exhaustion from which we suffer would, in many instances, have been much less than it now is.

The action of the plow is not wholly beneficial, for with all the good which it accomplishes, it tends to render the soil beneath it more compact, and less penetrable to the roots of plants; consequently there is the more reason why it should run deep enough to allow the roots of plants plenty of good pasturage. If these have ten inches in depth of well loosened soil in which to ramble and search for food, it is plain that they can thrive better than if confined to five. If the plowing have been year after year at the same depth, say five or six inches, the stratum immediately below it is every time rendered more compact—we often, in such cases, find a crust formed, which is impenetrable alike to the roots of plants and to water, and not only is the soil above exhausted at an early date, but the plants suffer from drought, or from excess of water, as the season proves wet or dry. Besides bringing into action material for the use of plants, deeper plowing, by allowing excess of moisture to pass readily away, is of great use, and not less so in a dry time, for then the soil is in condition to bring up moisture from below, by capillary attraction. To obtain the full benefits of deep plowing, or of subsoil plowing, upon lands overlying an impervious subsoil,

under-draining is necessary, and should be considered an indispensable pre-requisite to best success; but there is a large extent of such as can be greatly benefitted by deep plowing and subsoiling, without previous under-draining.

Another advantage of deep plowing, not unfrequently obtained, is that thereby we effect a mixture of unlike soils. Everybody is familiar with the advantage of carting sand upon clay, and clay upon sand, or swamp muck upon either, or upon any soil deficient in vegetable matter—now, where the surface soil and subsoil are unlike, as we often find them, no small good is found to result from their mixture, irrespective of other considerations; and where it can thus be effected, it is by far the cheapest method of accomplishing the end. At a much higher cost even, than when thus effected, the mixture of unlike soils may be often adopted as a profitable means of improving their mechanical condition and structure, and thus increasing their powers of production.

My present purpose, however, is not so much to state the uses of plowing, nor to discuss the best methods of doing it, nor to urge that its importance in practical agriculture is so great as to warrant all the care and skill which can be brought to bear upon it, nor to dwell at length upon all the advantages which may be expected to result from deeper plowing, some of which are hinted at above, as rather to bring prominently into view the important fact that there are, beneath the surface of thousands of our exhausted fields which have been only skimmed over, great resources for fertility, which have not hitherto been made to contribute to the farmers' wealth, and that *by simply putting in the plow deeper than before, he may bring into action soil which never saw the light, and thus virtually work upon a new farm within his old enclosure.*

So, too, every other operation, be it digging, rolling, hoeing, or whatever else which tends to more perfect comminution of the soil, adds to fertility, and although we may reject so much of the creed of old Jethro Tull as avers that "fine particles of earth are the very pabulum on which the plant subsists," all experience shows that we may safely adopt, and use our utmost endeavors to carry out, the practice which such creed would dictate.

FOREST GROWTH. "Let exhausted land grow up to wood for the next generation," says another correspondent, and this suggestion is also a valuable one; it would be well, indeed, to devote a very

considerable portion of our most exhausted lands to the growth of wood. Fuel and timber are becoming objects of steadily increasing importance, and the effect of a growth of trees on the redemption of land from sterility is very considerable. Their roots exert great power in decomposing the rocks in the soil, evolving from them the mineral elements of plants, and besides deepening and mellowing the soil, a forest growth would add to it, by an annual deposit of leaves, a great amount of vegetable matter. In truth, no small part of the productive power of newly cleared lands is attributable to this very process having gone on year after year, and why may it not be the part of wisdom to profit by the hint thus furnished in the operations of nature? Besides this, a collateral advantage of no mean worth would result from the lessening of the number of acres under cultivation, which would enable the farmer to work the remainder more thoroughly, and of course more profitably.

Still another method of securing this desirable end, and the last specific mode which it is proposed to introduce, is suggested below:

“This is a hard question. I should say, from my own experience, that in order to reclaim land, or check it in its downward tendency, you should pasture sheep five to eight years, and the land will then be in order for a series of crops. If the slow process of pasturing cannot be waited for, plow in green crops, if enough of anything green grows upon them to make it profitable. Plow deep.”

J. DAVIS, Webster.

“With regard to the recovering of partially exhausted lands, I would recommend the pasturing of sheep for a number of years, but by no means exhaust it still farther. I would consider it poor policy to wear land wholly out and then abandon it.”

RUFUS BIXBY, Norridgewock.

“Turn it out to sheep pasture.”

D. HOLDEN, Otisfield.

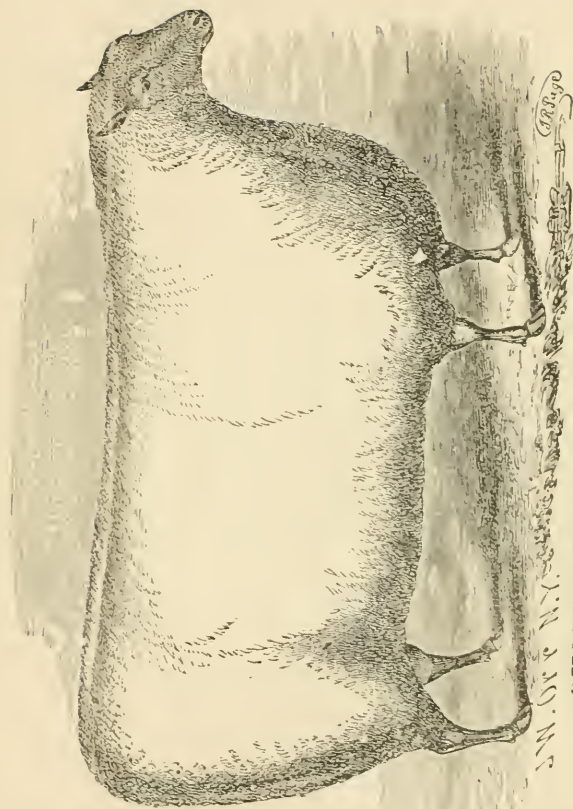
“I would recommend summer plowing, if you have not sheep to turn on and pasture. When grass is run out, sheep will bring it in again. If you wish to crop, put on your cattle and yard a piece. If the land is not entirely exhausted, the fertility of the soil will be recovered the following summer.”

T. J. BURBANK, Cooper.

“Under the circumstances you name, I would recommend plowing in clover or turning out to sheep for a restoration of such land.”

J. F. ANDERSON, So. Windham.





**"MASTER FORDHAM,"** (Southdown Buck.)

Bred by L. G. Morris, and now the property of J. C. Taylor, Esq., of Holmdel, Monmouth Co., N. J. Winner of the 1st prize, as a yearling, at the New Jersey State Show and the Monmouth Co. Show, in 1857.



The keeping of sheep is also repeatedly referred to by other correspondents, as a means of restoring lost fertility, and its importance and value in this light is believed not to be generally appreciated. Indeed, sheep husbandry, viewed in any of its aspects, has not received the attention in this State which its importance demands. It is not proposed, at this time, to dwell at length upon the general subject, but only to mention some points worthy of consideration; for when its advantages are fully understood, no doubt is entertained that sheep husbandry will take more prominent rank in our agriculture than it has done hitherto.

Wool is an article of prime necessity—it must always be in demand; and from some source or other, a supply will be obtained. Now the question for the Maine farmer to solve, is this: Can we find some grade of wool which, in connexion with mutton, can be profitably grown at a price enabling us to compete with anybody anywhere? for as long as the question of protection is so vexed an one in our national councils as it has hitherto been, this is the only safe ground. If we can, then we may always have a remunerating market, tariff or no tariff; and that it can be, seems highly probable from the fact that some have kept sheep, and profitably too, through all the fluctuations heretofore experienced, and these fluctuations it is, which have been a chief cause of discouragement, rather than the actual cost of production and market value. A critical examination of the facts bearing on this point, connected with judicious and carefully conducted experiments, will probably decide the question affirmatively.

But wool is not the only product yielded by sheep, and experiment may show that it is not, with many of our farmers, the one chiefly to be relied on. They yield mutton also; and while poor mutton is the poorest meat, good mutton is the best, certainly the most nutritious and digestible, which finds its way to our tables. Very little of such as would be deemed of really prime quality in a mutton-eating community, like that of England, is found in our markets, and hence its too general lack of appreciation in the popular taste. There is gain, however, in this respect. It is becoming gradually a more important element of food, and when occasionally that which is really choice is offered, the price which it commands is so amply remunerative that wool may be deemed of secondary

importance. The demand in the large cities has always been good, and the increasing facilities of communication with their markets make them accessible to a degree formerly quite unknown. Among the advantages of sheep husbandry may be enumerated the following :

They demand less care and attention during the busiest part of the farmer's season than any other stock. They leave the barn before he is most occupied, and return after his severest labors are over, and later than any other.

The fecundity of the sheep is scarcely equalled by any other domestic animal. They are available for the shambles from the period of early youth to extreme old age, and if they die, the wool and pelt insure against total loss. Another point worthy of consideration is, that sheep will thrive upon, and enable the grower to reap good returns from, much of our land which is unfit for tillage, and not so well adapted to the requirements of other stock. We have thousands upon thousands of hilly and rocky acres, where sheep will thrive and fatten, and yield a better profit than can be obtained from them in any other way.

The sheep, too, of all domestic animals, is the least dainty in its tastes and the easiest fed, eating freely, it is said, of a hundred different species of plants which are refused by the horse and the ox. They are thus of great utility in cleansing foul lands by the extirpation of troublesome bushes and briars, and noxious weeds. Nothing comes amiss to sheep; they feed upon all such with avidity, and fairly destroy them. Their digestion of what they eat is so complete and thorough, that no weed seeds, after passing this ordeal, retain any germinating power. Besides all this, it is the animal which derives the greatest benefit from the food which it consumes, and at the same time gives the most active and enriching manure to fertilize the land, and this, when at pasture, it scatters not only copiously, but with remarkable evenness, over the land, thus aiding the introduction of choice and delicate grasses, while horses and neat cattle, on the contrary, drop their excrements in large deposits, which tend to the destruction of the more delicate sorts of feed, and the growth of such as is rank and coarse. Thus sheep may be of decided advantage to dairy pastures.

The reasons why, and the way in which, an increased culture of sheep may avail to the restoration of lost fertility, are thus suffi-

ciently indicated. Wide tracts, which now produce only coarse and inferior vegetation, and scant at that, may be easily and profitably redeemed in this way.

One principal reason why the profits of this branch of rural economy have not been duly estimated, is believed to be owing to the absence of accurate accounts, a besetting sin of farmers generally. The aggregate returns yielded by sheep has thus come to be underrated; for instance, when a farmer sells a yoke of steers, which for three or four years have been steadily increasing in cost, at a fair price, and one yielding a moderate profit, it looks in his eyes a round sum,—something of a pile—and is duly appreciated. But if, instead of these, he keeps during the same years just so many sheep as will cost an equal sum, he often fails to estimate fully the returns which they make, if not quite so regularly as the semi-annual dividends on bank stock, yet in the two payments each year which they actually do make, in the clip of wool and the lambs annually dropped.

The same sum, received in the course of three or four years, and in six or eight separate installments, is apt to be thought less of than the gross sum at the end of the term; and yet, in fact, it is rather more, reckoning interest, and not less.

We may learn a useful lesson as to the value and intimate connexion of sheep with a profitable husbandry, from the results of experience in England, where their extensive introduction has worked a vast improvement, and where they have been steadily gaining in estimation ever since Sir Anthony Fitzherbert, a farmer, lawyer, judge, and the father of agricultural literature in that country, wrote his "Booke of Housbandrie," (A. D. 1532,) in which he says: "Shepe in myne opinion is the most profitablest cattell that any man can have."

The rearing of sheep in England is now considered the most important of agricultural pursuits, and there are many farms scattered throughout Great Britain, where scarcely any other stock is now kept.

"As if symbolical of the importance which the nation attaches to this production, the Lord Chancellor of England, as President of the House of Lords, sits upon a 'wool-sack,' (so called.)"

Some have attributed the profit of sheep in England to the mildness of their winters, and deem the case widely different here, but

it is believed that their advantage in this regard, is fully offset, if not more than counter-balanced, by the enormously high price of land there, as compared with ours.

Thus have we gone over the suggestions afforded by correspondents regarding means to restore a larger productiveness to our lands: Manures—fallows and fallow crops—green manuring—rotation of crops, (including root culture)—deeper and better tillage—forest growth, and sheep husbandry—perhaps quite enough for once; “a dose for a grown person,” as the doctors would say, and as much as may be advisable at the present time; but I can hardly consent to drop the subject, without suggesting what is deemed fundamental, and ought to underlie, and direct, and control all our efforts; and this is, a steady aim to make stock husbandry, in some of its branches, the leading object, and tillage subordinate and contributory thereto.

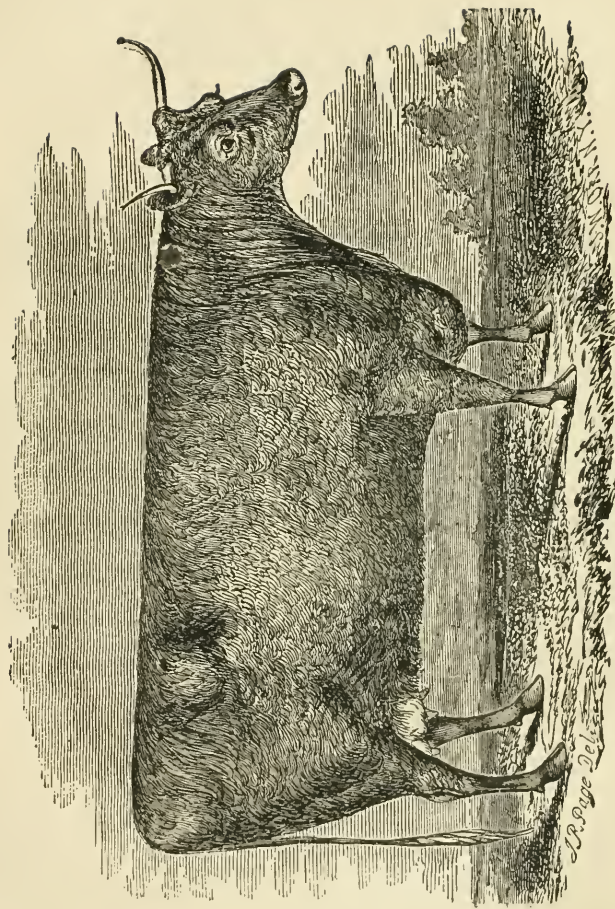
As at present situated, we cannot grow grains farther than to supply ourselves and our animals; (we don't do this now.) We can *live* by the plow, but can we *thrive*? and is there any doubt but that we can thrive by the sale of animals and animal products? not young or lean catile alone, for Massachusetts farmers to grow and fatten, but oxen, horses, sheep, *fat* beef, fat mutton, pork, butter, cheese. and the like.

If objection arise, that should all our farmers at once and earnestly adopt this plan, (and especially in view of the fact, that the great west is awaking to a sense of the importance of stock husbandry, to save itself from exhaustion,) there is strong probability of a material reduction in prices, it is readily and frankly admitted. Nay, more; in order to prevent disappointment, such a result should be counted upon for a certainty. Our answer is, that *we can afford* to sell at lower prices, and then do better than by neglecting it.

This policy is *not* advocated in view of the high prices which have ruled of late, *but for reasons of an entirely distinct character.* Our most pressing need is an increase of fertility, and to accomplish this end, the grand means is the consumption of the crops of the farm, upon the farm itself, coupled with due care in the preservation and application of the resulting manure. Improved modes of prac-







**DEVON COW, "FAIRY," (696.)**

Imported by Linsley Brothers, in 1851. For pedigree, see Davy's Herd Book, vol. 2.

tice should contribute all they possibly can, but this should be the reliance, the corner stone, the pivot of all our operations.

If the objection be urged, that should all our farmers at once adopt the policy proposed, bread would soon be scarce and dear, and bear undue price compared with animal products, the answer is, that we may safely calculate, that before such result ensues, we shall be in condition to grow all the bread we need, and possibly some to sell. By the plan advocated, if faithfully carried out, and accompanied with good management, every farm should increase in its powers of production at least ten or fifteen per cent. every year, and when our fields average upwards of two tons of hay per acre, our corn sixty bushels, our wheat twenty, and our oats sixty bushels per acre, we may safely sell the excess—cannot this be done? and if not, why not? Greater advances in practical agriculture have been made in individual instances among us, and if it cannot be done usually in Maine, we have yet to learn what the insuperable obstacles are which prevent. In Great Britain the average grain crops throughout the kingdom have more than doubled within a comparatively recent period, and though something is due to the importation of bones, guano, oil cake, &c., all this is as nothing compared with the degree of success which has arisen from the attention paid to the growth of animals—the care that green crops bear due proportion to grain crops, and both these to the amount of stock fed upon the products of the land.

There has been for some time a general move in this State in the right direction—the amount of live stock on Maine farms having largely increased of late. The doubtful point in the matter is, whether the move be not in view of recent prices, and so liable to be abandoned when these fall; rather than in view of ultimate results, with a determination to depend mainly upon animal products, *until we can afford to sell our crops.*

In the circular before alluded to, other inquiries were introduced, and, while upon some points, the facts obtained are deemed too scanty, partial and imperfect to be considered reliable as a basis for general conclusions, upon others, information has been elicited which may prove of practical value. One of these is the HAY CROP.

There is no occasion among us to invite attention to the production of hay as a forage crop, or to urge its importance as the principal dependence of our farmers for wintering their stock. This is already sufficiently understood and felt. The necessity in our case is rather to suggest caution, lest the exclusive or undue reliance upon it for the above named purpose do not result in too long continued successive cropping, with consequent exhaustion of our fields, and the neglect of green crops, with all the collateral benefits attending them. This has been already alluded to in the remarks on the rotation of crops. Still, as the grass crop is, and always should be, the great staple crop of Maine, it is highly important that we endeavor to learn all we can, of the conditions necessary to its most successful culture.

Respecting the best preparation for grass, the general tenor of reply amounts to little more than a recommendation of previous tillage with corn or roots,—some for one, more for two years, and a few for three or four years,—applying manure, and seeding down with grain, generally wheat; although where buckwheat is extensively grown, the preference for seeding with this grain rather than with any other is expressed in strong terms. Some prefer seeding alone, and these name August or early in September as the best season. Late fall sowing is condemned by nearly or quite all who refer to it, but August sowing seems growing into favor, although not much practised as yet, four-fifths of the replies being in favor of spring. Some statements are here appended which embrace several additional points worthy of consideration :

“ Grass lands are seeded the last of April and May, with herds grass, clover and red top. Many of our farmers would dispense entirely with clover, were it not for the great advantage to their grass land from the amount of food for other grass supplied from the clover root, and especially the condition in which heavy lands are found when the clover is killed out.

Many consider the after crop more than doubled from the porous state of clayey soils after clover. Any one can imagine the condition of a piece of ground with holes in it as *thick*, as *large* and as *deep* as each clover root

would make after the roots had two or three years' growth and then died. Have you ever estimated the amount of vegetable matter left in the soil, after a full clover crop had been grown and taken off? If so, will you give us an idea of it?\*

Many of our best farmers are of opinion that it is decidedly the better way, all things considered, to seed down grass land, *without* grain, in August or September, or in the spring—the seed to be sown, if possible, when the ground is covered with *anchor frost*. This we consider just the nick of time to sow our grass seed, if not sown in the fall.”

E. G. BUXTON, Yarmouth.

“My present idea of the best preparation for grass, is three or four successive seasons hoeing of manured crops, and then a generous allowance of several different sorts of clean grass seed, sown with wheat. A greater variety than the customary sowing of timothy and clover I deem of great importance to insure a heavier, better and more permanent grass crop.

I generally sow grass seed in spring, from the 10th to the last of May; sometimes in the fall, about the 1st of September. For seed, to an acre, seven pounds southern, and three pounds northern clover, four quarts red top, eight quarts timothy or herds grass, and four quarts sweet-scented vernal. To the above I would add, if the seed could be got readily, for upland, four quarts orchard grass, and for low ground, substitute for the sweet vernal four quarts fowl-meadow.”

J. F. ANDERSON, South Windham.

“All things being considered, I think it is best to follow a crop of corn or potatoes, though I have had the best crops of grain and hay where I have summer tilled and never planted, and it is my opinion that wheat is the best, spring rye and barley next, and oats the worst grain, to seed down land with.

We seed down our grass land always in the spring; our light land from the 20th to the 30th of April. Much of our land, however, is a clayey loam, and in wet seasons, it is often as late as the 20th or 30th of May before we get our grain in; but I believe the earlier we sow our grass seed, the better. We sow herds grass, and clover seed, and some times red top. Our usual quantity of seed is about twelve quarts of herds grass and ten or twelve pounds of

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\* “In an old pasture or meadow field, when plowed up, *the living roots left in the soil are equal to four times the weight of that year's hay crop*. If a ton and a half of hay have been reaped, then about six tons of dry vegetable matter remain in the soil in the form of roots. In the case of clover, at the end of the second year, the quantity of *dry vegetable matter left, in the form of roots, is equal to upwards of one-half the weight of the whole hay which the clover has yielded*. Suppose there be three cuttings, yielding four tons of hay, then *two tons of dry vegetable matter are added to the soil in the form of roots when the clover stubble is plowed up*.”—[Johnston's Lectures on Agricultural Chemistry.]

clover seed to the acre. It is natural for our land to produce any quantity of white weed, and for some years past, we have sown the New York clover seed. It ripens about as early as the white weed. It grows short and fine, and makes better hay than the northern clover, and for these reasons, we are much in favor of it."

JOSEPH CARGILL, Newcastle.

"We consider the best preparation for grass land is, to plow the ground, and after it is sufficiently manured, to seed it down to grass. We generally sow the seed with wheat in the spring; consequently, it is up about the time that the drought come on, and a great many of the plants die. Sometimes, even, we lose all the seed sown, and then we have to plow and sow again. There is a prevailing opinion that the fall of the year is the best time to sow down grass land, say August and September. If it is sown later in the fall, it is more apt to winter-kill, while, on the contrary, the earlier it is sown in the fall, the better it will be the next year."

THOMAS GARVIN, Shapleigh.

"For a preparation for grass, I like muck, sea-weed and ashes, say five parts of muck, two parts of sea-weed, one part ashes. This is not only a good preparation for grass, but for almost anything else. If grain is to be sown with grass seed, I should prefer barley. Of late, some of us have practiced the plan of preparing our ground in the fall and sowing the grass seed on the snow in the spring, just as the snow is going off. I like this plan much, though I should not recommend it for side hills, where the seed would be likely washed off by the running of the melted snow. I prefer clover and blue top for high lands, herds grass and red top for low lands."

JAMES W. AMBROSE, Wells.

"Lands that are fitted to raise any kind of crops had better be planted two or more years, with a plenty of manure and thorough tillage, before seeding down. Lands that are so wet that they cannot be planted with profit may be turned over and seeded down after haying. Any kind of grain will answer except oats.

We seed down mostly in the spring; sometimes we fit lands, that are wet, in the fall, and sow grass seed when the frost is coming out in the spring. We sow a peck of timothy, and half a bushel of red top, and from six to eight or ten pounds of clover to the acre."

JOHN L. WELLS, Wells.

"Deep plowing and subsoiling, on all lands, (except heavy clays, which should be under-drained) I esteem the best preparation for grass seed. Cultivation with root crops, and good manuring, for two years, places our land in the best possible condition for grass. To insure the seeds catching, we consider wheat the best grain to sow with grass seed in the spring. We by all means put off sowing our wheat until about the 20th of May, that we may



avoid the weevil; and I think this is as good a time to sow grass seed—fourteen or sixteen quarts of timothy, and as many pounds of clover, to the acre.”

JOHN C. BLANCHARD, Searsport.

“I consider deep plowing, and a thorough mixing of the dressing with the soil, and draining where necessary, are indispensable preparations for a good crop of grass. The kinds of grain I sow with the grass are: first, peas; second, wheat; third, barley; fourth, oats. I sow my grass seed as early in the spring as possible—for then the seed has the benefit of the spring rains—say from 20th of April to middle of May. I sow, on lands highly manured, about ten or twelve quarts to the acre; on pasture lands, sixteen or eighteen quarts of seed—for light soils, three-fifths clover, two-fifths herds grass; on clayey lands, one-third clover, two-thirds herds grass; on low swampy lands, one-fourth clover, one-half herds grass, one-fourth brown top.”

JESSE DAVIS, Webster.

“My best preparation for grass is to put on a good dressing of manure before plowing. Let the plow run deep—say ten or twelve inches—and, let me add, it will depend upon the depth of plowing as much as upon the manure. Wheat or barley is the best for mixing seed for sowing. Many, however, among us, sow their seed clear, and with good results. Clover and herds grass are the principal seeds sown—on rather wet land, red top does well—twelve pounds clover and one-fourth or a half bushel of herds grass to the acre. Our lands are generally seeded from the 10th of May to the 1st of June.”

G. H. ANDREWS, Monmouth.

“The best preparation for grass *alone*, on an old field that can be well plowed, is: Turn it over ten inches deep, spread and harrow in a sufficient quantity of good compost, with ten or twenty hundred weight of bone-dust per acre, and sow half a bushel of timothy, clover and fowl meadow seed, in September or August. Harrow smooth and roll. Or, if grass is *not* the only crop sought, the rotation of two years pasture, one year roots, one year wheat or barley, with grass seed, and one or two years hay, not omitting *draining*, *deep plowing* and *bone-dust*. We usually sow in April, if the surface of the ground gets sufficiently dry to harrow, or as early as the ground is in proper condition to work—unless the object be grass alone, then sow in September. Timothy and clover are almost the only kinds of seed sown here. Fowl meadow and brown top make a valuable addition, and for pasture, orchard grass; but this comes to maturity before other grasses are fit to cut, consequently should not be mixed with them for *hay*. This last is in flower the last of June, and ripens in July.”

W. D. DANA, Perry.

In reply to the question of the circular regarding the present yield of English hay per acre, answers from about a hundred towns state it variously at from half a ton to a ton and a half; nearly

three-fifths stating it to be three-fourths of a ton; nearly a third at a ton. The others at less and more, from which it appears probable that the actual yield is something less than a ton per acre. Regarding the probable increase during the last five years, it appears to have been on an average ten to twelve per cent, and principally from better tillage, comparatively little waste or swamp land having been reclaimed. As to the extent to which it may be profitably increased still farther, and the means of accomplishing the same, some replies are here appended:

“The present crop of hay can unquestionably be doubled by a more liberal application of such dressing as it is in the power of almost every farmer to obtain, without cash expenditure beyond the team and hands he ordinarily employs for the summer's work, if he will haul muck, or turf, or loam, or decomposed vegetable matter of any kind, to his barn cellar, or shed, and yards, and hog-styes, thus working up some of his leisure time. Saving the liquid manure and wasted wash would more than double the amount and value of the manure on every farm that I have observed closely enough to form an opinion upon.”

J. F. ANDERSON, So. Windham.

“It can be doubled by discontinuing the present practice of fall feeding, by under-draining, and top-dressing.”

E. G. BUXTON, Yarmouth.

“Guano has been applied to grass lands in this town, both last year and this, on almost every variety of soil with uniform success, in every case increasing the crop. In one instance, one hundred and fifty pounds of guano, with two hundred pounds of plaster, spread on three-fourths of an acre—soil a clayey loam, quadrupled the crop of grass.”

WILLIAM GREGG, Freeport.

“Three tons per acre might be raised as easily as to cut but one, and the three tons costing no more. Now for an experiment that I made. I had a piece of ground, from which there was cut but a half ton per acre. I plowed it up in the spring, manured it well by spreading on the green-sward, plowed and planted to corn, which was manured in the hill. The crop of corn and fodder paid for the labor, manure, and seed. Next year, spread manure over it, plowed in the manure four inches, sowed it to oats and grass seed. I took from that piece, August 21, three tons of oat straw to the acre; up to this time the crops were worth all I had expended, and interest on the value of the land. The first two years it yielded three tons to the acre; then, by application of top-dressing once, I was enabled to cut the same amount up to this time, which has been three years more.”

S. P. MAYBERRY, Cape Elizabeth.

“From twenty-five to fifty per cent., by keeping your hogs in the pen, and at work, with material enough to work profitably. I make five to six cords of manure from a hog, which is worth very much more than an equal amount of cattle droppings. I make my sty (which has stone floor and walls, with no yards,) the common receptacle of all refuse animal and vegetable matter of every description, with all the slops and washing suds from the house, keeping the mass as dry as possible without heating. When it is too dry, carry water from the pump; when too wet, go to the woods and get a load of leaves. To my knowledge, there is scarce a farmer who keeps a hog the year round, and mows ten acres of grass, who cannot at a very small expense, with that one hog, increase his hay from three to five tons per year. This looks like a great story, but I can make it good. I consider your twelfth question of more importance than any other to the farmers of Maine, therefore I would say to them, *make manure, save manure, and judiciously apply manure.*”

D. H. THING, Mt. Vernon.

“The hay crop can be profitably doubled by draining our swamps, and under-draining our high lands, carting muck into our barn cellars and yards, loam into our hog yards, and saving the waste from the sink-spouts. In short, cultivate less ground, and do it more thoroughly.”

J. O. KEYES, Jay.

“The hay crop here may (in my opinion) be increased nearly or quite one hundred per cent., by leaving the dry, worn out knolls, which have been worked time out of mind, simply because they would work easy, and bear corn, by leaving these knolls that have been *over worked* and *half fed*, and descending to the meadows and low lands, that have received the wash and deposits of the uplands year after year, until one is impoverished, and the other enriched. Let these low grounds be drained and cultivated, and farmers will secure an increase in their hay crop, that will more than realize their most sanguine expectations.”

JAMES W. AMBROSE, Wells.

“I think by a judicious application of manure to the land, and the blessing of seasonable rains, the crop of hay in this town for the coming five years, may be increased one-third, or perhaps one-half. Grass lands this year are fast recovering from the effects of the drought of 1854, so that the crop of hay this year will considerably exceed *that* raised in 1855, or 1856. In order to increase this crop, more manure must be applied to the acre. Swamp muck I find to be very beneficial in increasing the quantity and value of manure, especially if spread over the yard in the fall, and incorporated with the straw and other manure before hauling to the field the next fall. It may not be improper to mention, in this connection, that none of our most able farmers in this vicinity, so far as I can ascertain, have made any experiments in the use of the more active manures, such as poudrette, guano, &c. It is so late in the spring before corn and the grains can be put in the ground, that corn, in particular, seems to require some more active manure than is usually hauled from the

barn yard. I think the Board of Agriculture would confer a favor on the community, if they would publish the result of their researches and experiments in the application of manures to the corn crop, &c., and at what price a farmer might expect a remunerating return in the crop."

J. ADAMS, West Newfield.

"Three hundred per cent., simply by a proper cultivation of the soil. Land may as well yield four thousand pounds, as one thousand per acre."

AARON HOAG, Gardiner.

"It might be increased to almost any extent, by reclaiming bog lands, the free use of muck, and such other fertilizers as we have among us, together with a judicious system of cultivation."

AUGUSTUS SPRAGUE, Greene.

"I have found, by many years experience, that sward land plowed four to ten inches deep, twenty to twenty-five loads manure (fifty bushels to the load) thoroughly incorporated with the soil, planted with corn or potatoes; second year seeded with grain and grass seed, gives us the best crops of corn and grain, and a succession of good crops of hay. We receive much heavier crops by prosecuting this mode, and continue to work over larger breadth of land, and keep the soil in a higher state of cultivation. We have increased our hay crop by this mode from a half ton to two tons per acre."

JOSEPH FROST, Elliot.

"By thorough draining, deep or subsoil plowing, and the use of bone-dust, with a careful husbandry, and the use of the sources of fertility on and about the farm, the crop of hay can be profitably increased from the present average of half a ton, to two tons per acre."

W. D. DANA, Perry.

"It can be increased one-half, and that profitably—not by sending to Boston or New York for fertilizers—but let every farmer treble his amount of manure every year. There will be enough to doubt this, and I will just show you what I am doing, and ask if I have not some reason to believe that I shall double my quantity of grass in a very few years. I have a cellar under my barn, where all my manure is deposited until wanted for use. I keep there one hog to every two or three head of cattle, and haul in three loads of all kinds of material that will absorb moisture, to one made by the cattle; and in spring I have three loads of good manure, instead of what would have been one of ordinary, if it had been thrown from the window. Some will say it costs a great deal to keep hogs, and so it does; but if you have any to sell, they bring a great price. Now, I say, instead of laying out money for fertilizers, buy corn and feed it to hogs, and make your own manure. This is the best way to make a compost heap that I know of. I will add, that my cellar is so warm in winter, that it never freezes so but the hogs can work in the manure just as well as in summer."

JOHN C. BLANCHARD, Searsport.

TOP-DRESSING, as a means of increasing the fertility of grass land, seems not to have received any great amount of attention at the hands of Maine farmers, and yet, judging from the replies of those who have practiced it, the result of their experience is almost universally in its favor, as an effectual and profitable means.

“There is but little practice of top-dressing of grass lands, yet I believe it to be *the way*. The attention of farmers should be called to this fact. I care not what your dressing may be, (the better the dressing, the better the crop, of course;) you may take the gravel from the ditch, and you will be handsomely paid for all trouble. The roots of grass, of late years, are more or less thrown out by the action of the frost, and they are left exposed to the cold of spring, and the action of the sun, causing them to be dried and withered. Now take a dressing of sand or loam and apply it early in the spring, covering up these roots. We shall find, instead of one blade of grass, (*and that slender,*) several blades luxuriantly growing. This is no whim, neither does it require any art to understand it. It is nothing less than plain common sense. It should be laid on to the depth of a half or whole inch. I am satisfied the expense would be met by a return of many fold.”

G. H. ANDREWS, Monmouth.

“I have not practiced top-dressing to much extent with manure, but will name one experiment. Four years ago, immediately after haying, I carted from the shore eight loads of sea-weed, and spread it thinly over about one acre, where I cut less than half a ton of hay that season. Before winter had set in, there sprang up a fine second crop of clover and herds grass. The next season, I cut at least two tons of good English hay from that piece, and have cut two fair crops from it since, without any more being done to it. This piece of soil is a clayey loam. I have tried sea-weed in fall and spring, but with less success. I think the great benefit derived from it in this case is on account of its effects as a mulching. I am satisfied that in dry seasons, if we only throw over something that will keep the scorching sun from the roots, immediately after taking off the crop of grass, it will do as much good as a light dressing of manure.”

JOHN C. BLANCHARD, Scarsport.

“I do not practice top-dressing to great extent at present, although I have faith in its economy as well as efficacy, where one gets a chance to try it on. Liquid manure, or finely pulverized compost, in the spring, is undoubtedly the best; but I have received great benefit from a single application of clayey mud, the cleanings of a small pond. The land was of a gravelly nature, and the quantity hauled on to it, in the fall of 1853, was not over five cords to the acre. Its effects are still very marked.”

J. F. ANDERSON, South Windham.



“Top-dressing is not extensively practiced. I am preparing a heap of soil that has washed into a valley by the side of the road, by mixing refuse lime, that I get at the kilns of Rockland at a nominal price, and shall apply it this fall. I think a top-dressing may be made of washed gravel, chip-dirt, muck, or almost anything, by mixing lime and ashes from the kilns, that will pay well for the application. Top-dressing keeps the surface from binding.”

HENRY HOBBS, Hope.

“Land properly drained, that has been several times plowed deep, so that a part of the manure has been mixed with the soil to a good depth, may be kept in a state to bear two tons of hay per acre, by judicious top-dressing. I top-dress, because it is the cheapest method of raising grass. I use a light dressing of manure from the barn, and cover immediately with salt dressing that I procure from the river. I also use plaster on lands that contain much clay.”

SAMUEL FORD, Newcastle.

“I have not practiced top-dressing to much extent, owing to a want of dressing. I have used lime, plaster, ashes and stable manure,—the last is best—have it well rotted and made fine before using. I think, from my own experience, that it is an excellent method for making cold clayey soils yield the most profit. I will here state my reasons and method. The hay crop is the most important crop that the Maine farmer can raise.

Spread on a moderate coat of dressing, plow it and lay it down to grass, so that no water will remain on the surface. Spread on yearly, before the fall rains commence, (as such lands are invariably soft either in the fall or early in the spring) two cords of compost manure to the acre, prepared as follows: One bushel of plaster, four bushels of ashes to the cord; mix thoroughly with old yard dressing, and spread immediately. On certain kinds of cold clayey soils, the grass, after it has been mown a year or two, grows in tufts or bunches, leaving from a quarter to a half of the land bare of grass roots. By putting on the above composition, the ground will keep swarded all over, producing hay over the whole surface.”

JESSE DAVIS, Webster.

“I have never practiced top-dressing for grass, but from observation deem it very important on soil that washes by plowing—particularly on hill sides, and stiff clay soils.”

JOSEPH FROST, Elliot.

“Top-dressing is not generally practiced, yet it is profitable. Almost any kind of mud or dirt from the sides of the road, and muck, (when composted,) lime or ashes are really very beneficial to grass land, when applied as a top-dressing. It is confidently asserted that the present hay crop may be increased at least one-third from such means.”

CHESTER B. SUMNER, Appleton.

“Top-dressing is not practiced to any considerable extent in town. I think, however, that in many localities, a top-dressing, with well rotted compost manure, would be highly beneficial and economical, if applied in the fall or early in the spring. My reasons are, that we have much land that is not profitable to plow, unless it is underdrained at a great expense, which, after it is seeded down and made fit to receive the scythe and horse-rake, an application of manure once in four or five years, would, at a small expense, keep in good condition for grass for a long term of years.”

E. A. BRADEEN, Waterborough.

“Ground that is too wet for good tillage, is very much benefitted by top-dressing, as it improves both the quality and quantity, and will hold out very much longer. Apply it early in the spring, and if compost manure cannot be spared, common earth will richly pay the labor.”

DAVID NOYES, Norway.

“I practice top-dressing only by carting rich mould or soil upon low land, and find much benefit therefrom. I pursue that course, because it is not so convenient to cultivate wet lands. I apply it in autumn.”

MARK DENNETT, Kittery.

“Not much done in this way. I have, on a very small scale, top-dressed with fine, well rotted manure, and with admirable success. My only reason is, that God, the greatest agriculturist, puts manure at the top.”

E. JONES, Minot.

“Top-dressing causes the land to hold out to grass longer than any other mode of dressing. Barn manure, loam, dirt from the ditches, almost any-kind of manure, spread on in the month of November, about ten loads to the acre, would increase the crop of hay one-third. It keeps the land warm, and it starts earlier in the spring, and is not so liable to winter kill.”

THOMAS J. BURBANK, Cooper.

“Our hay crops might be increased by top-dressing with guano or bone dust, but it is so expensive that but few here use it. Some farmers have top-dressed their grass land with swamp muck, which makes the grass grow finely. Plaster sown very early in the spring on clayey loam grass land, in the proportion of one or two bushels per acre, will, in a dry season, be of great benefit.”

RUFUS BIXBY, Norridgewock.

“I am of opinion that liquid manure is the best dressing for all mowing fields. A year ago last spring we had occasion to clear out one of our manure pits when it was filled with water, and to get rid of it, hauled it out in hogs-heads to some old grass land, applying it on the driest parts. At mowing

time the effects of every pailful was visible in great increase, and I am so well satisfied of the great benefits to be derived from this kind of manure, that in a new barn to be built another season, I shall have water-tight manure vaults, with the yard so graded that all the wash from it will run into them, to be pumped up into sprinklers, and applied to the mowing land."

E. K. FRENCH, Chesterville.

"Top-dressing is not extensively practiced by farmers in this town, but I am in favor of it, and have done something at it for several years. I believe it an economical way to improve grass lands. When my grass land gets run down, and has a smooth surface, I spread about ten (thirty-five bushels) cart loads of fine compost, made of marsh mud and lime, to the acre, which costs me about fifty cents per load. This will generally increase the crop from fifteen hundred per acre to thirty hundred weight, for about four years; so that for one dollar and twenty-five cents worth of manure yearly, and twenty-five cents for laying it on, making one dollar and fifty cents, I get fifteen hundred weight of hay of an excellent quality, being a mixture of herdsgrass and clover. I have tried double the above amount per acre, but made a perfect failure of it. It brought up weeds, and the grass grew so rank that for two or three years it was good for nothing. I spread it invariably in the fall."

JOSEPH CARGILL, Newcastle.

Another question was: What do you consider the principal defects of the agriculture of your vicinity, and by what means within the present ability of the farmers, may they be obviated? Some of the answers are:

"This double question of yours is not in itself long, but to be properly and fairly answered would require a reply in the style of an old-fashioned sermon of points, with an immense salutatory, and considerable length of valedictory; not feeling competent to the full task, I will designate a few of what I consider the principal defects of our agriculture. In the first place, we all of us cultivate too much land—much more than we have means to work thoroughly—we never deposit enough to warrant the drafts we are constantly making upon our land bank; consequently we are always overdrawn and out of credit, and then we are, as a class, one-third of the year lazy, (it is truth) and always short-sighted. The obviating means are evident to those who will admit the assertions."

J. F. ANDERSON, So. Windham.

"The principal defects of agriculture in this vicinity, are want of system, and a better understanding of the business, and more thoroughly working the lands. Neglect, and a want of care is the cause of a great portion of all the failures in other business, as well as farming. Farming is carried on too

carelessly. If there was that care and attention given to farming as is required in other business, we should see a vast improvement in the farms throughout the State.

C. B. SUMNER, Appleton.

“The greatest defects are shallow plowing, and little of that, and gross negligence in regard to increasing the quantity and quality of manure.”

D. NOYES, Norway.

“Want of system is the first great defect in our agriculture, and we never can succeed profitably until we adopt some regular system, and then carry it out. Some farmers are so situated that sheep husbandry would be the most profitable; others would do better to devote themselves to raising neat stock, their farms being better suited to that purpose than for tillage; others, again, from the nature of the soil, would do better to devote their acres to the cultivation of cereal grains; but we find almost every one pursuing a course of mixed up husbandry, doing a little of every thing, and complaining when they get it done, that there is no profit in farming.

I agree with them, that there is but a very small margin for profit, as farming is at present carried on, and while the present system, or rather want of system, prevails, I see no chance for much greater profits. How to bring about a change and the adoption of such a system as is best calculated to result in profitable agriculture, I leave to wiser heads than mine.”

W. H. POWERS.

“There are many defects in the cultivation of the soil in our vicinity. Farmers do not plow deep enough; they go over too much ground, consequently their manure is thinly spread, and being shallow plowed, it dries up, doing but little good. Many let their manure lie exposed to all weathers; also, one of the most valuable manures that the farmer might have is often entirely lost. I refer to night-soil. Instead of having a suitable place for the reception of it, and saving all the liquids by absorbents,—such as muck, loam or saw-dust—it is almost invariably thrown away, and then we send to New York for some of theirs, which is not worth one-half as much as that they throw away every day. Much might be said upon this subject, but as your thousand correspondents are better able to talk upon this matter, I will leave it to them.”

G. H. ANDREWS, Monmouth.

“The principal defects in the agriculture of this vicinity are: plowing and tilling too much land, sowing too many oats, farms too large for the amount of labor bestowed upon them, and not a sufficient quantity of manure. In my opinion, one-half of the land that is now plowed, well manured and properly cultivated, would afford more profit to the owners than they now receive from the whole. Let every farmer in this State, who can obtain it, deposit in his barn and hog-yards, at least once a year, as many cords of swamp muck

as his cattle and hogs would make of manure, and he will find his compost heap almost double in quantity and nearly equal in quality. By this means, we can prevent our farms from being exhausted."

DAVID FROST, Norway.

"The principal defects of the agriculture of this vicinity are these: first, cropping land without putting on a proper quantity of dressing; second, allowing manure to go to waste. The remedy for the first is plain; we must cultivate no more than we can properly manure. For the second, keep the manure under cover, and use absorbents to save the liquid of the barn, sink, back-house and hog-pen."

D. J. FISHER, Charlotte.

"Skimming, going over too much land, want of study and plan. Grazing is our proper business. Improve the mowing grounds about the barn, till two tons grow on an acre; advance out by plowing and top-dressing, and increased crops of hay and larger stocks of cattle will be the result."

E. S. HOPKINS, New Portland.

"Want of drainage, want of agricultural knowledge, want of system, want of some means by which reports on agriculture may be put into the hands of the *farmers* by the State, instead of their being distributed to lawyers, doctors, and indeed to everybody but farmers,—the number finally authorized by the Legislature being inadequate, even if they should be fairly distributed. The two copies which I received have been circulated in at least fifteen or twenty families, and causes them to inquire why such information is not imparted to the whole community.

WM. GREGG, Freeport.

"I think the principal defects are, light manuring and not stirring the soil often enough while the crops of corn and other hoed crops are growing, to let in the air and keep down the weeds—although our farmers are a very industrious class of people and strive to do their best."

HENRY HOBBS, Hope.

"I believe the first and leading defect is, plowing more land to plant than we have manure to dress well. I remarked before that it would be advantageous to the owner of a hundred acres of land, to turn that part he could not till and dress well, to grazing. But in the division of his farm as it now is, he has more fence to repair than he can now look after. To lay out his farm again would make the burden greater, so he continues on in the same course. Still, with favorable seasons, I have hope that fields during the next five years will yield a better harvest. Farmers must, if possible, make more manure—*that* is wealth.

J. ADAMS, West Newfield.



“Too long cropping in one kind, without rotation, is doubtless our principal defect. Some people seem to think that nothing is manure unless it has actually passed through the digestive organs of their cattle. There is some improvement, however, in this respect, and we hope to see more.”

E. JONES, Minot.

“The principal defects in agriculture in this vicinity, are: first, a lack of thorough working and pulverizing of the soil; second, light manuring. We have great advantages for getting salt and fresh mud. A great number of the farms of this town have muck bogs on them, and many are inexhaustible; and many have the privilege of salt marsh. York and Kittery have greater privileges, but few farmers make use of the privilege or take *any* means to increase the manure heap. It is my opinion, that if the farmers in this and neighboring towns, would make use of the advantages within their power, double the amount of crops might be produced yearly.”

J. FROST, Eliot.

“The principal defects may be readily stated. 1st. Leaving farming for other employments, especially lumbering. 2d. A neglect to work properly the soil intended for the production of crops. 3d. Too little attention to the care and culture of the crops themselves.—Evils which can be obviated in no other way than by a reversion of action in the matter.”

B. HAMILTON, Six Mile Falls.

“So far as my observation extends, farmers improve or rather plant, sow and mow over too much surface. It makes more labor and less profit. More attention should be paid to manures, and adaptations of stock and crops to each farm, also to its location, which should influence the farmer in his produce and stock. The increased expense of labor has induced farmers to calculate with more care what crops pay best.”

ELIJAH BARRELL, Greene.

“The principal defect in this vicinity, is the lack of manure. The means to obviate this lie in saving every material for the compost heap that is worth saving. Let the droppings of the animals be carefully saved; give the hogs muck or loam enough to work; let the out-house and sink spout be well fed with the same, and the hens looked after. Every farmer can make and save twenty-five per cent. more than he does now. This going to the Pacific after guano, when we might make double the manure we do now, is not the thing. We had better by far plow in one or two green crops every year, for the very purpose of enriching our land. In our town we have plenty of deposits of muck, besides sea dressing all along the Cape, which is pretty well cared for and looked after by those living near the shore.”

SAMUEL HASKELL, Cape Elizabeth.

“One defect with farmers is that they do not think and study enough, and do not take interest in their farms; they see others speculating and making

money and are apt to think that all may do the same. They lack system about their business. They should have more self-respect, and remember that they are in good business, that will bear to be well followed."

JOHN S. WELLS, Wells.

"Too much land and other business carried on at one and the same time. Less land, and less business away from that land, would give a better and more thorough cultivation to our farms, and where one blade of grass is now permitted to rear its head, two, three, yea, four, would soon be made to come forth in its place. We should be *surer* of better crops, (potatoes excepted)—never realize a failure in grass catch as is now too often the case; we should soon learn to dig and plough deeper, considering the fact that, as we haven't all creation to go over, we could better afford to go over a little deeper, and feed better old mother earth.

We should cultivate less acres, and confine our observation, experience and means more directly to one and the same end.

Friend Goodale, I presume it will be excusable in me, if I should digress a little from the queries in your circular. In answering those questions, I have confined myself as strictly as possible to, and within the limits of this town. As a town, we have varied and multiplied interests, but that of agriculture seems just at this time to predominate; there is a manifest interest aroused among our farmers, and a good deal of zeal is showing forth its good work among the tillers of the soil in this vicinity.

The interests of our citizens are so varied and scattered, that concentrated action upon any one point is no easy matter.

This will account in great measure for the fact, that among the three hundred horses, six hundred oxen and cows, and one thousand swine in this town, there cannot be found a *full* blooded animal in either department, unless it be a yoke or two of oxen imported from some other town. So you see, for the many valuable horses, oxen, cows and swine we have in town, we are dependent upon those who are ahead of us in these matters.

On the nine or ten thousand acres of land which constitute the area of this town, we have quite a variety of interests drawing counter to that of agricultural improvements, but still we are bound to be up and doing. Our four hundred thousand dollars interest in navigation must, as a natural consequence, hold in check much of the *real* interest that would otherwise go directly in favor of agriculture and its improvements. As a town, we are small in territory, but are highly favored; we have within our borders a chance to obtain unlimited discounts, if we will but learn to appreciate the value of our *beds* and *banks*. When we take into consideration the fact that we have shipped *annually*, for years past, more than *twelve* hundred tons of hay, it will be seen that within the five years past, we have taken and carried from our soil more than six thousand tons of its production.

Now, the question naturally comes up, how long will our soil hold out under such treatment? This is robbing Peter *without* paying Paul, and

neither can survive any length of time unless a change of treatment, more favorable to the life and health of the patients, shall soon take place.

Old mother earth is generous; but with all her generosity, she will not always *give* without receiving something in return. It is not her nature to always give out, without being *foddered* occasionally, and I am thinking that if she isn't 'stall fed' pretty soon, we shall forfeit her good graces entirely.

We have an inexhaustible resource in marine dressing, if the same result continues to follow their application to our soil that attends it now. But this is supposed to be somewhat doubtful, and hence let us guard against every leak and waste place on our premises that will deprive our soils of one pound, one quart or one foot of substance that will, if given, enrich the soil in any degree. We should guard well our *ashes* that they may not be wasted—there are more *pearls* in a bushel of ashes than some pearl hunters are aware of; then if we wish to save the LIFE of our manure heaps, we must put them under cover, or they will surely be frozen or bleached to death.

The ladies are frequently treated in our agricultural journals with a chapter on 'house plants.' Now, brother farmers, the ladies never had, and never will have, in my opinion, a plant that needs *housing* and in-door treatment half so much as our manure heaps, and none will pay half so well for the change of treatment, if it is but done as it should be. Again, there are riches in our swamps and muck holes, and little will be our profits from them if they are not disturbed; they must be dug over and exposed to the air, and worked into the hog-pen, &c.

I see that I am straying away into forbidden paths, so I will 'haul up' by wishing you every success in your labors in behalf of agriculture, the *best* interest of Maine."

E. G. BUXTON, Yarmouth.

These replies suggest several particulars which have already been considered at some length, and others, a simple allusion to which may suffice to bring to mind the necessary obviating means, and this is all which is requisite, *except to put them into operation*, which each must do for himself.

There is, however, one other very serious defect in our husbandry, which must not escape notice and comment. It is not alluded to above, probably by reason of its having been made the topic of a special inquiry. The question was asked: What per cent. of saving can be effected in the present cost of feeding animals, during winter, by *suitable* shelter and protection from unnecessary exposure? to which a few reply ten per cent., some fifteen, some twenty; but from many, who have given the subject most careful consideration and the test of actual experiment, the saving is stated at no less than a quarter or a third, and a few make it as high as forty per cent.

If these opinions are well founded, the conclusion is inevitable, that, whether it arise from ignorance of the facts, or from extravagance, recklessness, or any other cause, there is here a most serious defect in our prevailing practice.

The wintering of farm stock is one of the heaviest bills which the farmer is obliged to meet in the whole course of his experience, and in not a few instances greater than any other; and if he were compelled to respond to a needless call from his winter stores, for enough to supply his animals during an additional six weeks or two months, he would deem the case a bitterly hard one, and justly, too; and yet, what can be more clearly capable of mathematical demonstration than the statement, that if a saving of a quarter or a third of the present cost of wintering stock can be effected, that it would be equivalent to an actual shortening of the winter, a lessening of his expenses, an increase of his profits,—call it what you will—by just so much? And what would such a saving amount to on the three hundred and fifty thousand\* head of neat cattle in the State, (let alone all other stock)? This problem is commended to the farmers' boys, to cypher upon during some of the winter evenings. The answer will probably be found to count up dollars, not by hundreds or thousands, but by *millions!*

Experience has amply proved, and every body is ready to admit, that animals *comfortably* housed, and well cared for, can be wintered more cheaply, and come out in spring in better condition, than if exposed to the inclemencies of a northern winter, (or a western winter, either). *Shelter is cheaper than fodder*, and no farmer or herdsman, who wishes to thrive in his calling, *can afford to neglect to furnish the full amount of shelter and protection which can be economically done.*

To sustain a due degree of animal heat, is a prime necessity of bodily existence—no individual can live without it. In order to understand how comfortable shelter and the warmth thus saved, is connected with the economical keeping and growth of animals, it is necessary that we first endeavor to understand by what process of nature animal heat is generated; and although we may not find the

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\* The census returns in 1850 give the number then as three hundred and forty-three thousand three hundred and thirty-nine.

obscurity which formerly involved this subject completely cleared away, yet we may easily learn as much as will serve intelligently to guide our action. Eminent chemical physiologists will tell us, that animal heat is generated and sustained by a process not different in kind from that by which we warm our rooms, or obtain heat for any of the other purposes of every-day life. To this end, we burn fuel; and fuel, whether it be wood, coal, or something else, is composed largely of carbon, which, in the process of combustion, combines with oxygen, forming carbonic acid gas, and as a *consequence of the combination*, heat is evolved.

Careful experiments have shown conclusively, that the amount of heat thus evolved, corresponds to the quantity of oxygen which enters into combination with the combustible matter, be it carbon, hydrogen, or something else. This can be measured, and we find, too, that the result is the same, whether the combination takes place so rapidly as to produce intense heat, or so gradually that there is no appearance of fire at all. The essential point is the combination of oxygen with the combustible matter; when this takes place, whether slowly or rapidly, heat is evolved.

Let us next inquire, what is food, and what becomes of it when eaten? Take, for instance, the case of an ox fed upon hay, roots and grain. Without going into the minute details of analysis as to their ultimate elements, we find the proximate constituents of these articles of food to consist of, first, albumen, gluten, casein, &c., which are composed of nitrogen, carbon, hydrogen and oxygen. These mainly go to form muscle, cartilage, &c, and are familiarly known as the flesh-forming principles. We also find another class of alimentary substances composed of the same ultimate elements, with the only, but important, difference of being *minus the nitrogen*. These are starch, sugar, gum and others. They are known by the generic name of elements of respiration, or familiarly called the heat-producing principles. They are thus called, because, when absorbed in the process of digestion, they are conveyed in the blood to the lungs, there to be exposed to the action of atmospheric air; and during the exposure, the carbon combines with the oxygen of the air, and passes away from the lungs as carbonic acid gas mixed with the expired air. (A portion of the hydrogen also combines with oxygen there, and passes away as watery vapor.) *Con-*



*sequent upon the combination*, as stated above, heat is evolved, and this the arterial blood conveys to all parts of the frame, and so sustains the heat of the body. If more food is digested than is needful to sustain the required warmth, these elements, after contributing to supply the constant waste going on in the system, (and which is greatly increased by exercise,) are converted into fat and suet, and stored away. To this end, also, the oily or fatty portions of food (as the oil in Indian corn) contribute, and even more directly; but these and the sugar, starch, &c., are so similar in their constitution, that either can be, in case of necessity, substituted in place of the other.

From this, we infer that animal heat, being indispensable to life, must first be supported from the consumption of food, which, to the extent required for this purpose, may be viewed as fuel; for the animal may *live* without fattening or growing. When this want is supplied, the balance of the food digested may supply waste and contribute to growth or fatness.

It is a well-known fact, that in cold weather, and in high latitudes generally, food which is rich in carbon, as fat meat, &c., is required in larger proportion than in lower latitudes or in warm weather. The voyagers in arctic expeditions have required large quantities of the heartiest food, a pound or two of tallow serving one for a lunch there, much as a piece of bread might do here. The Esquimaux, and other natives inhabiting such latitudes, eat almost incredible quantities of blubber, or other food of the fattest kind. The combustion of fat, as fuel to sustain vitality, is farther illustrated by what we know of the hibernation of animals. The bear, for example, goes into comfortable winter quarters, with a thick fur coat outside and rich stores of fat inside, becomes dormant, (for exercise would demand a supply to make good the waste caused by it, and more than he can well afford, under the circumstances,) and his fat is gradually absorbed into the system, the carbon and hydrogen burned in the lungs, and thus his vitality sustained. It is no figure of speech to say that his lamp of life was fed during the winter with (bear's) oil; it is the literal fact.

The question above, it will be observed, refers to *suitable* shelter. This does not preclude a proper degree of ventilation, which is highly necessary. Perhaps the hay-mow might not be the worse off

for somewhat more than is absolutely necessary; but to indulge cattle in an excess of it when the thermometer is below zero, is very expensive, in fact, grossly extravagant; and when the matter comes up for the farmer to decide upon in his own practice, whether it be the better policy for him to warm his cattle in winter on beef-tallow, (or what will make it) or on pine boards, plenty as these are in the State of Maine, the question is believed to be one *not very difficult* of solution.

And this may remind us that there is often more of beneficence in the arrangements of the All-Wise than we are apt to give credit for. So many trees, so much timber as exists in our State, were not made to grow here for nothing. There is deep meaning in it, deeper by far than we have yet fathomed; and this topic of *SUITABLE SHELTER* is particularly commended to the thoughtful attention of every grumbler at the dispensation of Providence which compels him to feed his cattle at the end of the pitchfork for half the year.

Another question was: Can hired labor be profitably employed in farming operations, at present prices of labor and produce? Upon which point it is somewhat remarkable, that although the replies are divided about equally, half being of an affirmative and half of a negative character, an analysis and comparison of such as do more than simply affirm or deny, show a substantial agreement of opinion. It is deemed advisable to quote several of these, as the suggestions thereby presented may be of more profit than any generalizations which could be drawn from them:

“It cannot under present system of farming.”

D. J. FISHER, Charlotte.

Under judicious management it can.”

S. N. WATSON, Fayette.

“Few can make it pay.”

G. H. ANDREWS, Monmouth.

“All hired labor does not pay, but it can be made to.”

J. C. BLANCHARD, Searsport.

“It pays well here—high prices, good conveyance, and cash markets, do wonders for farming.”

WM. BURNS, New Gloucester.

[New Gloucester, it will be borne in mind, is on the line of the Atlantic and St. Lawrence Railroad.]

“Not with present imperfect systems of husbandry, and lack of facilities for market.”

W. H. POWERS, Bridgton.

“But few can carry on farming wholly by hired labor, and make it profitable.”

J. S. POWERS, Fryeburg.

“Not unless the employer either ‘hold or drive,’ and then it can.”

ELIJAH BARRELL, Greene.

“Near a good market it can, if rightly applied.”

J. FROST, Elliot.

“Not under ordinary circumstances.”

R. WINCHELL, Acton.

“Divide the farms into five classes—the first and second will pay; third doubtful; fourth and fifth won’t pay.”

JESSE DAVIS, Webster.

“I am able to work but very little; have one hundred and sixty-five acres, and no help but what I hire. Keep two men constantly for seven months, and three in haying; hire considerable by the day besides, and I am making money by it; but my farm is better than the average in this county.”

D. H. THING, Mt. Vernon.

“As a general rule it will not pay, but where large grain crops are grown, it will, though we think the same amount invested in improved implements and machinery for carrying on farm operations, would pay better still.”

R. BIXBY, Norridgewock.

“Not except in haying.”

T. J. BURBANK, Cooper

“Yes, on new farms.”

D. BLANCHARD, Blanchard.

“By managing work to best advantage, hired help *will* pay.”

D. FROST, Norway.

“Proper management, and adhesion to the old maxim, ‘He that by the plow would thrive, himself must either hold or drive,’ will make hired labor profitable.”

J. W. AMBROSE, Wells.

“It depends upon circumstances; on a strong, fertile soil, judiciously cultivated, it will pay handsomely; under other circumstances, loss will ensue.”

JAMES WALKER, Fryeburg.

“Not except under favorable circumstances, as to manure and markets, connected with judicious supervision.”

J. L. WELLS, Wells.

“A man who understands farming, pursues it systematically and judiciously, can pay high wages and make good profits.”

[No signature.]

“Hired labor will pay at present rates, being lower than for some years past.”

C. B. SUMNER, Appleton.

“It will now, but would not three years ago.”

J. CARGILL, Newcastle.\*

“Many farmers have an idea that they cannot afford to hire labor to carry on their farms, but my experience is to the contrary; and having tried the experiment with care, am *fully* satisfied that it is profitable to employ as much help as is necessary to carry on farming to advantage.”

E. K. FRENCH, Chesterville.

“With the ordinary shrewdness which induces success in other business, and makes hired labor there profitable,—a proper system and the direct personal attention of the farmer himself, I think he will get a handsome return from the wages paid to every man he employs, even at the present high prices; the number of employees to be limited only by the extent of his farm, his means for enriching it, and his ability to direct and control.”

JOHN F. ANDERSON, Windham.

The question is practically one of considerable magnitude, as on its decision in the mind of each farmer will depend his course of action, whether he pursue farming *as a business*, striving to obtain a profit from his operations, or whether he be content to employ his own labor alone, and *earn* what he can.

It is a question for each to decide for himself, upon a careful examination of what is within himself, and of all the circumstances surrounding him. If called upon to venture an opinion, after asking that of others, it would vary in form rather than in substance from those above quoted, being, that with skill and capital, and executive talent to direct labor to best advantage, farming could be made profitable by hired labor in any location, (as to market) or on any soil in Maine, ordinarily cultivated.

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\* At Newcastle, and probably also at Appleton, the price of farm labor is regulated, in part at least, by the condition of the shipbuilding interest, at present depressed.

The conditions, it will be noticed, are very broad; embrace a great deal—but being granted, will any one venture to affirm that such soil is any where too distant from a manure market, or a muck hole, or a bed of forest leaves, to be profitably improved by some of the means before alluded to for renovation of exhausted lands, or any location in Maine so far from a produce market, that horses, cattle, or meat, or butter and cheese, (if good as they should be) or wool, or timothy or clover seed, or some other product, will not pay to carry to market?

It will be seen, by referring to the report of the doings of the Board at its last session, in January of the present year, as published in the "Abstract of returns" from the agricultural societies in the State, for 1856, that several committees (ten or eleven in all) were appointed to investigate divers subjects connected with agricultural pursuits, and report to the Secretary facts, experiments, views and conclusions, for publication in his annual report. Up to the time of the present writing only two of these reports have been received, and it is therefore with greater pleasure that I am able to add a communication from an eminent veterinary surgeon, on the subject of shoeing horses—a subject intimately connected with the usefulness of this valuable animal.\* If it be true, that a horse with useless feet is of no worth, it follows that whatever may tend to correct erroneous practice, and diffuse a knowledge of the principles upon which success in securing the full use of his feet can alone be obtained, must be of widely extended, and indeed almost universal benefit; for, although every person may not be an owner of horses, few are not more or less dependent on their services. To shoe a horse properly, involves, as will be seen below, a familiarity not only with the mechanical art, but with the structure of the foot, the laws of motion, and of the principles of mechanical science.

Maine ranks deservedly high in the production of horses—we rear many, use many, and sell many, and good ones, and we might profitably rear, and use, and sell more and better. But, as a State, we

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\* Besides our obligation to Mr. Cuming for his valuable letter, we are indebted for the illustrations accompanying it, and which add much to its usefulness, to the courtesy of the Directors of the St. John County Agricultural Society.



are lamentably deficient in veterinary science, either in theory or in practice. Indeed, it is more than doubtful whether large numbers of those who have need of the benefits it may confer, be not ignorant of its very existence in the advanced condition which it has attained abroad. They may know of some who pass for "horse doctors," and whose skill is justly estimated to be on a par with that of a "seventh son of a seventh son," or of the practitioners of medicine during the dark ages, but have yet to learn that within a comparatively recent period the structure and diseases of domestic animals have been made the subject of patient study and investigation by men of great scientific attainments, and that results have flowed therefrom greatly to the benefit of the agriculturist; more especially, of course, in the department of stock growing.

Agricultural societies abroad have exerted themselves to diffuse a knowledge of the principles of veterinary science, and with notable results. Why may not our societies accomplish something in the same direction?

In Scotland, within the last thirty years, the losses of farm stock from disease have diminished one-half, partly from better treatment where disease occurs, and partly from the introduction of better systems of ordinary hygienic treatment, resulting in the prevention of disease, and which is equally the fruit of veterinary research. By reason of the latter, it is said that some diseases formerly prevalent there, have entirely disappeared.

To care properly for the foot of a horse is a part, but a very small part, of the province of a veterinary surgeon, for his science embraces every thing pertaining to the anatomy, physiology, pathology and hygiene of the ox; the sheep, and the swine even, not less than that of the horse, and it is as intimately connected with the agricultural interest, as medical science is with our bodily welfare.

ST. JOHN, N. B., Nov. 18th, 1857.

S. L. GOODALE, ESQ., *Dear Sir*:—In the course of one of the agreeable conversations we had when you were here last summer, I recollect our discussing the subject of horse-shoeing, and of showing you some specimens evidencing the wretched state the art was in when I came here, and the improvements that have since been made. I recollect also of your saying at the time, that a similar reform was much needed in many parts of your State, and of your asking me

for a contribution to your annual report, on the subject; and your letter of 9th instant puts me in mind, that if I am to furnish anything of this sort, it should be set about now. But as my present leisure will not permit me to write you an original communication, such as I would wish, and as, besides, I am ignorant of what faults are most prevalent in the practice of the art in your quarter, the best I can do is to send you, in substance, the views I urged on the community here some years ago, through the medium of a letter addressed to the Directors of the St. John County Agricultural Society. How far what I then wrote may be applicable to the state of the art now, and with you, I am of course unable to say; but if, on perusal, you deem my suggestions deserving of a place in your publication, they are very much at your service.

In the course of the correspondence which led to my coming to this Province, the Secretary of the St. John County Agricultural Society wrote:

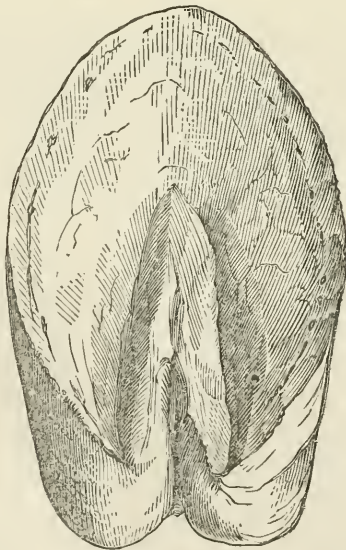
“It is greatly desired by members of the society that the Surgeon should have in connection with his establishment, or under his charge, *a forge* where horses could be shod in a proper manner. At present, we are very badly off in this respect, there being but few smiths with whom a good horse can be safely trusted.”

This was written in the summer of 1851, and my own observation after coming here in 1852, fully bore out the truth of the statement. It was not necessary to take off shoes, or examine feet, or enter into any other minute kind of inspection, to find out the evil. The long donkey-like hoofs every where seen, and the number of horses lame from corns, contractions, ringbones, spavins, sprained tendons and interfering, were sufficient evidence that the society had not instructed its Secretary to write as he did without abundant cause.

Such being the case, there was need for little further proof that the horses here were not generally shod as they should be, nor was it required that I should argue the benefits of a better system. The adage “no-foot no horse,” is equally applicable here as where it was first used. In this country, where horses are hard driven, and too light generally for their work, it is of the greatest importance that as few defects should exist in the plan of shoeing them, and as many advantages be combined, as the state of the shoeing art will admit of, and it was to further this desirable end that the following remarks

were meant. In writing my ideas, therefore, on horse-shoeing, I had no wish that they should be looked upon as a complete or formal treatise on the subject. So many of these having already been published by men eminent in the art, as to supply to the scientific or inquiring reader all the information nearly, that books can give. My object was of a less pretending but more practical character, namely, to point out the errors most commonly fallen into as the thing was done among ourselves, the effects of these errors, and their remedy.

The first thing that took the notice, at the time I wrote, of any one accustomed to see horses well shod, on looking at the feet of almost all he met here, was the preposterous length of the toes. So strange indeed did this feature seem to me at first, that I doubted if the internal parts of the foot could be the same as those I had been used to see elsewhere, or if nature had not in a freak made them different here from what they are in other places. Subsequent inspection however showed me that this was not the case, that nature forms the feet of horses here the same as every where else, and that the absurd and often ludicrous forms I saw them fashioned into, was only the work of the shoeing smith.



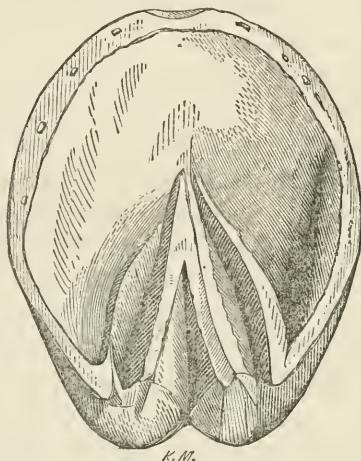
*Fig. 1.*

FIGURE 1, is a good exemplification of this. It is a sole view of a foot elongated and contracted by a long continued course of bad shoeing. The frog has almost disappeared between the contracted heels, the bars have been cut away, the sole and crust scooped out with the buttris to a thin edge, and the toe left untouched. The foot from which the sketch is taken, is in the exact condition in which it last left the blacksmith's shop, with the exception of the shoe being off; and is a good illustration of the common mode of buttris paring. It is also a good illustration of the long uncouth form of feet, to which I have adverted, as attracting my notice on first passing up the market slip of St. John, and of which a sample is now rarely to be seen on our streets. The plate is an exact representation of the foot in all its proportions. The foot itself had originally been a very good one; the quality of the horn being still unimpaired.

When the foot is unshod and the horse at liberty, the growth of the hoof is barely sufficient to provide for the constant wear and tear of the sole and toe, and consequently no part is either wanting or superabundant. But when the horse is put to work on hard roads, and to stand in dry stables, the foot becomes inadequate to the wear, and to save it we put an iron shoe on. This shoe prevents the wear, without checking the growth of the hoof; and to compensate for this, every time the shoe is off, the foot should be brought as near as possible to the form and size that nature gave it. In the unshod colt, the greatest diameter of the hoof is across the sole. This is especially the case in the fore foot, and it contributes materially to the usefulness of the animal that it should continue so through life.

The function of the fore leg is mainly that of supporting the weight of the body, head and neck, and of transferring that weight forward from point to point, the time the animal is in motion. In performing this latter action, its mechanical bearing is much the same as that of a spoke in a carriage wheel. It is in fact a lever, in which, to give increased speed, the power acts at a disadvantage; the fulcrum or fixed point being at the long end of the lever, while the power and weight act near each other at the short. This long portion or arm of the lever is the leg from the elbow to the ground, the toe being the fixed point over which the body is raised, and

hence any addition made to the length of the toe, has the same effect upon the horse, as the placing of a block before the wheel of a carriage has on it. It acts against the muscular power of the animal as used in the raising and carrying forward of his weight, and if ridden, of the weight of his rider, and though only requiring a small additional effort at each step, tells materially in a day's journey.



*Fig. 2.*

FIGURE 2.—Is a sole view of a foot of the same size and shape as figure 1 had originally been. It appears to be the foot of a young animal, and only to have been shod for a short time. Still the inside heel (that to the left hand) has slightly begun to contract. The foot is prepared for shoeing, the crust levelled, the toe made as short as it will admit of, and the bars and frog left full. The outside circle shows the thickness of the wall of the hoof, which in this foot is very thin. The shading shows the way in which the sole should be cleared out between the bars and crust at the heels, so as to prevent the production of corns. A comparison of the two feet is worth infinitely more than any description. The actual difference of length between them was more than an inch. Therefore the long toed horse (if other things were equal) had the whole weight of his head, neck, and body, to lift this inch more at every step, than his snug footed neighbor; an amount of exertion that would tell plainly on a hard day's work, or a closely tried race. Both feet from which the figures were sketched are still in my possession.



Every one the least a judge of horses can tell of the advantage of having them short below the knee, and is ready to despise as misshapen any one that has the reverse defect. But there seemed few (hereabout at least) who had got so far as the consecutive idea, namely, that to cultivate an additional inch of unnecessary toe, was just the same as to put that much to the length of the bone below the knee, in fact for the horse, worse, as the addition is made at the point of greatest disadvantage.

In the hind leg, though the functions of the part be different, the effects of a long toe are equally an evil, if any difference, worse. The main use of the hind leg is the propulsion of the body forward, and when hauling of the load also. In effecting this the leg from the hock to the ground is a lever also of the second class. The power is the muscles whose tendons are inserted into the point of the hock, the resistance is concentrated in the *tibia* or bone of the leg, where it forms the hock joint, and the fixed point of the lever is the point of the toe upon the ground. From this it is plain on the simplest mechanical evidence, that anything added to the length of the toe, is so much leverage placed against the animal's power of hauling, and consequently that he must either do less work, or else exert himself more in the doing of it.

Mechanical disadvantage to the horse in the performance of his work however, is but one of the evils following the long toes that were then so common in this country. Another equally great, often arises when the animal is standing at rest.

Every one knows what is meant by a horse being "sprung in the knees." For the information of those who are curious to know how this condition is produced, I will explain one of its causes. The bones of the foot and pastern of the horse do not stand perpendicularly above each other, but slope backwards, a considerable portion of the animal's weight resting on the tendons that pass down the back of the leg, and hence the greater the slope, the more the strain the tendons have to bear. If we put a horse to stand with his head up hill, more exertion is needed to sustain himself than if standing on a level. The reason is, that the bones of the foot and pastern are thereby placed more obliquely, and more of his weight is thrown upon the tendons and muscles, and thus a wearied horse, if left to himself, always feeds with his head down hill. But we add to the

slope of the foot and pastern the same by adding to the length of the hoof and shoe, as by placing the horse's head up hill, and with greater permanency of effects, as we leave him no power to relieve himself. Often the two conditions are conjoined, the toes are injuriously long and the horse is confined nine-tenths of his time in a sloping stall. Here the muscular exertion of sustaining his weight soon becomes irksome. He shifts from one foot to another, but finds it only a temporary relief. The muscles connected with the tendons that pass down the back part of the leg to the foot soon begin to relax, till the weight falls on the ligamentous straps behind and below the knee. Then the bones of the pastern and foot become still more sloping, and to sustain his body perpendicularly above his feet, and still more to relax the muscles, the knee bulges out in front to a line with the projecting toe. This at first occurs only now and then, when the horse is wearied or forgetful, his postures becoming natural and proper when roused up. By-and-by however, it becomes a habit, and the causes being permanent and constant in their action, the effects soon become the same, and we have the horse for life "sprung in the knees."

Many a valuable animal, tottering on the brink of this condition, has been saved and brought back to usefulness, by having his feet put in a proper shape, and a run at grass, or a loose box to stand in allowed him, while others on whom the torture of long toes and sloping stalls was persevered with, have become permanently useless.

Another evil resulting from the length of toes to which I have been adverting, is interfering. The horse, finding the long projection in front of his foot as so much leverage acting to his disadvantage, gradually gets into a habit of shifting it, by raising himself from one or the other of the quarters. This is still more the case when, in addition to the long toe left on the hoof, a small round knob of steel is set into the point of the shoe, as if in contempt of all that nature teaches. With these absurd contrivances placed between his weight and the ground that supports it, it is next to impossible for a horse to raise himself evenly upward and forward, and hence the number that one way or another interfere. If in raising his weight from the ground, the pressure be upon the inside quarter of the foot, then the thick part of the pastern is thrown inward, in the way of being struck by the upper edge of the hoof of

the other side. If the cant be the other way, and the outside quarter raise the weight, the inside edge of the shoe is thrown round and upward, and runs the risk of cutting with it the opposite leg. Even when the horse from having a naturally good gait escapes both these evils, still he is not free from trouble caused by this shape of shoe.

The fore foot of the horse, as nature makes it, has no such projection in front and downward as that which the smiths here gave it, but rather the reverse. The sole surface at the toe is commonly broken off and notched back at the middle, so that the pressure, when the foot strikes the ground or the animal is raising his weight, is distributed over the whole front of the foot. In accordance with this, the coffin bone (see figure 3) which fills the internal cavity of the hoof, has the same turned-up and notched-back form.



*Fig. 3.*

FIGURE 3.—Is a drawing of a fore foot coffin bone, in a position to show one side entire and a part of the front. The front is to the right hand, the notch indicating the centre of the toe. This blunted form, which the hoof also soon assumes if left bare, and which we do not see in the corresponding bone of the hind foot, has an evident connection with the use of the member it belongs to; and is to give a broad firm opposition to the concussion caused by the foot striking the ground; and a solid and stable base over which the animal may raise his weight. In the English form of shoes, with plain toes, and tips let into the front of the hoof as in figures 8, 13, 14, and 17, this natural position of tread is nearly followed; but more so in that of the French shoe (figure 18) with its rounded up front. Nowhere in the world has so much scientific study and attention been given

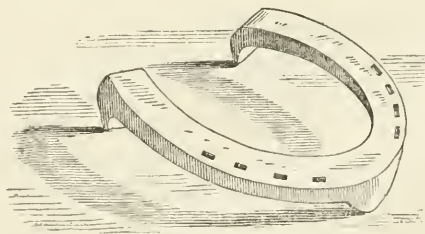
to horse-shoeing as in France, and although the English workman thinks little of some of their methods, (such, for instance, as one man holding up the foot while another drives on the shoe,) still there is no doubt but their form of foot and shoe is the best and nearest to nature that has yet been proposed, and is fast coming into favor among the more scientific of their British neighbors.

The main point of inquiry among the French of late, is to find the proper *aplomb*, or tread-posture, (if I may put two expressions into one,) of the foot; convinced that the nearer they approach to nature in this, the more will they facilitate the easy working of the other locomotive powers of the animal. If we take the cut, figure 18, as in any way making this approach to the proper form of shoe, we will find it presenting a very marked contrast to the pointed, peaked, and pivoted shape represented in figures 4, 5, 7, &c.

In England, France, and on the continent of Europe generally, wherever veterinary schools exist, and scientific attention is given to shoeing, this natural form of foot is more or less followed in the shape of the shoe, (see figures 8, 13, 14, 17 and 18) and the animal has preserved to him, along with the protection from wear which the shoe gives, the position of tread for which nature has constructed the other mechanical arrangements of his organs of motion. Why it is not so here is partially perhaps due to the use of the buttris for cleaning out the foot when it is shod, as it is almost impossible with this antiquated instrument to bring the hoof to the proper shape in all its parts; but it is more so to want of study on the part of those who shoe, of the structure of the foot, its uses, and the relation existing between it and the other motive organs, the bones, tendons, and ligaments of the limbs.

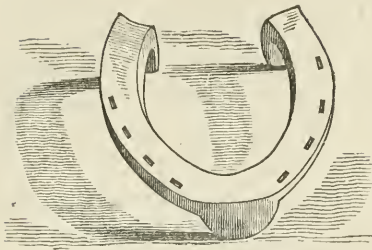
Let me describe for an instant the way the horse was commonly shod here a few years ago, and still sometimes is. The foot an inch longer at least (often more) in hoof than it should be, and brought out to a point instead of being rounded back. (Figure 1.) On this point is placed in addition to the unnatural length of the shoe, a round button like knob of steel, (figures 4, 5, 7, &c.) with perhaps only a fourth part of an inch of level bearing to rest upon the ground. When the ground is soft it is all well, as this projection penetrates till the flat of the shoe comes to bear the weight; and all the extra labor the horse has is that of raising himself an inch or

two more than he needs at every step, and digging up an unnecessary quantity of dirt or gravel. But the case differs when the horse treads on anything impenetrable, as a piece of stone, or smooth hard rock. Then the difficulty of raising his weight is added to by that of balancing himself while doing so, upon the pivot by which the point of his toe is terminated. The horse not being furnished by nature with muscles of abduction and adduction in the fore limbs (that is muscles for drawing the legs outward or inward, from or to the body) has but little power of balancing himself from falling sideways. The instant he begins to raise his weight upon the narrow base of less than half an inch on which the smith has propped him, the tendency is for him to topple over, which he does till the side or quarter of the shoe, either outside or inside, takes the ground and gives him farther support. This, however, is not done without a cant or jerk to all the joints of the foot. True, it is the work of an instant, and the horse recovers himself, and goes on before we can almost see it is done. But then the same occurs a hundred, it may be a thousand, times a day when the roads are rocky, or dry and stony; canting, twisting and jerking the coffin pastern and fetlock joints at every step, and yet, we daily meet with those who gravely wonder how the ringbones, swelled fetlocks, sprains and spavins, are all produced. The wonder rather is, considering the improper and unnaturally shaped feet and shoes, that there are any sound. (See figures 4 and 5.)



*Fig. 4.*





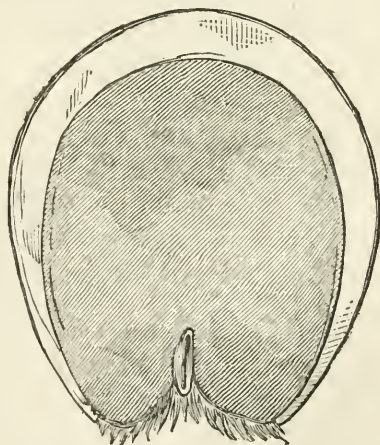
*Fig. 5.*

FIGURES 4 and 5—Are perspective views, the one of a fore, the other of a hind foot shoe, showing in slightly different aspects the objectionable forms of the toe caulks to which I have above alluded; and representing a system that was, at the time I speak of, all but invariable here in the formation of this part of the shoe. Both shoes were taken off feet in which severe lameness had been suddenly caused by a false step, jerk or twist, the fault being, (as in hundreds of other cases where it is never suspected,) from the animal's treading on something hard or impenetrable, with the narrow point on which he is propped up. I have often admired the almost artistic care bestowed by some of our smiths, in bringing to the nicest point this part of the shoe, which, after all, has nothing but the dirt among the horse's feet to come in contact with, while leaving the other side, to which the elastic and often tender foot has to be nailed, twisted, uneven and unworkmanlike. From the degrees of care they bestow on the different sides of the shoe, one would almost think the foot was the insensible body and the road the animated and sensitive being; but the reason probably lies in the fact of the side of the shoe next the foot being hidden when it is nailed on. Both the shoes from which the sketches represented were taken, were made in St. John.

Another of the errors in shoeing which I found current when I came here, was the want of a tip or projection, turned up on the point of the shoe for an abutment against the toe of the hoof. It seemed to me that in respect of this, the smiths had turned the shoe wrong side up, giving a tip downwards where nature never designed it to be, and denying one upwards where it was essentially wanted. As from the long toes, so from this also the fore feet are the greatest

sufferers. I have already mentioned the function of the fore limbs to be mainly the support of the weight, and its transference forward from point to point during the motion of the animal. In doing this, a considerable degree of concussion is inflicted upon the foot every time it strikes the ground. The direction of this concussion is neither right downward, nor right forward, but between the two; partaking of the horizontal motion of the body of the animal along the road, and of the perpendicular direction of the descent of his weight.

Every one knows the additional power of resisting or sustaining concussion and weight, any fibrous substance has if struck or pressed in the direction of the fibres, besides if acted on in any other. The hoof of the horse is composed of an infinite number of dense fibres, strongly agglutinated together; and to enable it with the greatest advantage to meet and support the concussion there is when it strikes the ground, these fibres are every one of them so placed in the unshod foot as to receive the shock directly on their ends. (See fig. 13.) In addition to this, the front part of the hoof, where the force of the concussion is greatest, (see fig. 6,) is twice or thrice as thick and strong as the side and heels, its slope indicating exactly the direction of the descent of the horse's weight.



*Fig. 6.*

FIGURE 6—Is a section of a fore foot cut across half way between the ground surface and the top of the hoof, to show the increased

thickness of the crust at the front, over that of the sides and heels. The circle round the outside represents the cut edge of the hoof. The foot is one of about the same size as that in figure 2, but has a thicker and better crust. The thinning of the crust from the point of greatest width of the foot, back to the sides and heels, shows the evil of driving our nails into these parts; and a comparison of the cut with the shoes figured 9 and 10, will at once explain how the lameness they caused was brought about.

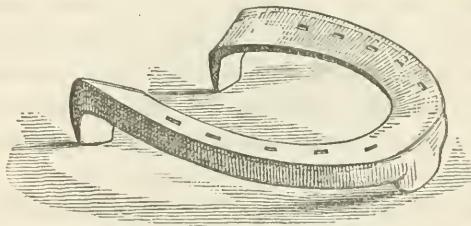
Now, all this thickening and strengthening and sloping at the toe of the fore foot is not without an obvious design, which is to enable it to receive without injury the shock upon it when the horse is thrown forcibly forward, as in leaping, galloping, or even hard trotting, especially if down hill; and by turning up a tip on the shoe as an abutment for the toe to press against when it strikes the ground, we make both shoe and foot to act together in harmony, we save the shoe from being knocked off, and at the same time promote the natural action of the foot. In shoeing without this simple expedient, we frustrate the design which nature evidently had in making the toe so strong, and throw the concussion this strength was designed to meet, upon the nail holds of the weaker parts of the foot, the sides and heels. These have not only to support the weight of the shoe, but also to bear the force of the foot striking the ground; and the shoe being found from these two causes more inclined to come off than is wished, recourse is had to an extra amount of nailing, not only at the toes, where from the thickness and want of spring in the hoof, it is harmless, but round the quarters and even to the heels, where by its pinching and fettering effects it is productive of the worst of consequences; corns, contraction and founder being its daily fruits.

No disease is more certainly a consequence of shoeing than corns, and the number of horses lame from this is almost beyond belief. I have met with them in feet where they had caused lameness for years, and been shod over all the time without discovery. In such a case we may blame the shoer for oversight, but not for wilful mis-doing; but what shall we say when a corn is discovered, and to some extent relieved by the knife, and then the shoe refixed on the very plan by which the evil was originally produced; yet such things happen not once or twice, but daily.

Two causes mainly contribute to the production of corns; nailing of the shoe too far back, by its preventing the spring of the foot, is one; the other is unequal pressure of the shoe upon the sole and heels. When both are combined, corns are next to inevitable.

A reason, or at least a pretext for heel nailing, I have already noticed. The extent to which it is carried, and the uniformity of its occurrence show, that those who practice it never entertain a doubt of its propriety, nor a suspicion that the hoof of the horse is an elastic and organized structure, contracting and expanding alternately at every step, and consequently suffering in proportion to the extent to which it is fixed and fettered.

The unequal pressure between the hoof and shoe which leads to corns and other hurtful consequences, may arise either from the shoe being improperly made, or the foot insufficiently pared out. It was rare to meet with a shoe here four or five years ago, on which even an attempt had been made to form a seat for the sole; more rare still that the attempt was successful. The seat, when tried to be made, was commonly only a concave form given to the entire surface of the shoe next the hoof, instead of extending only as far outward as the sole, and leaving a level rest for the edge of the crust. Such shoes (see figure 7) should be called scooped rather than seated, and are worse to make a horse go with, than even those flat made.



*Fig. 7.*

FIGURE 7—Is a sample of the form of shoe here referred to, and presents about as many faults as any one shoe can well have. There is neither abutment, nor even rest for the toe part of the hoof on the shoe, the front of the latter being depressed a full fourth of an inch from the level of the two sides. The foot surface is dished quite to the outside edge, with not the least space of level bearing

for the foot; so that even were the crust made level, only its outside edge could touch the shoe. Then the heels, instead of being level, slope to each other at a not very obtuse angle, the foot being *in* this part of the shoe, instead of on it, and performing the action of a wedge every time it receives the animal's weight. And to keep all these vicious contrivances in action, it is fixed with five nails on each side driven back to the very heels. No wonder the poor beast from which it was removed, went hirpling lame; the wonder would have been had it been otherwise. Yet it was no uncommon thing to see the same form of shoe in daily use on many of the best heavy horses in the city, and the owners all the time complaining of the badness of their feet.

But the cause of corns is often to be found in the way the foot is prepared. I have already adverted to the buttris as being instrumental in the production of long toes. It is equally so in that of corns. Of this no better proof is needed than the disappearance of the one simultaneous with the disuse of the other; this has happened generally in Britain within the last thirty or forty years, and particularly in the practice of regimental shoeing.

Professor Coleman, of the Veterinary College of London, writing in 1809, says: "There are very few horses that are not attacked with corns. This is so common a disease, that nine hundred horses out of a thousand have it." Mr. Percival, Veterinary Surgeon to the First Life Guards, in his work on lameness in horses, published in 1852, says: "That faulty shoeing is the chief and predominant cause of corns, cannot anywhere receive more satisfactory demonstration than in the Army. Corns, and quittors, and contracted feet, were in former days as rife in the Cavalry as in other places, whereas at the present day these diseases are all but unknown to Veterinary Surgeons of Regiments; and all is owing to an amended practice of shoeing."

My own experience, if it could add anything to the above, is this: During seven years practice immediately preceding my coming here, I did not meet with more than five or six cases of lameness from corns; and in a record of more than a thousand cases that I kept during a part of that time, noting them in the order in which I treated them, there is only one of corns, and that a slight one. Since I came here, there are few days that I do not see horses lame from



this cause, although it can be but a fractional part of the evil that comes under my observation.

In blaming the buttris for producing corns and other evils, a few words of explanation is necessary. From the shape of this tool, its tendency in cleaning out a foot with it, is to cut away both crust and sole, bars, heels and all, to one level. In fact it is hardly possible when using it to leave one part more prominent than another, especially when it is the crust and bars that should be left, and the sole removed. The hoof of the horse, though strong and tough to resist external agencies, is by no means a stiff or rigid body, but springs and expands at every step, and along with this expansion the sole descends and flattens out from the weight of the horse resting on the coffin bone inside. Now if this descent of the sole be not allowed for in fitting the shoe, either by a seat worked in the shoe itself, or by cleaning out the sole to a lower level than the crust, then the sole in its descent presses on the shoe, and the sensitive part inside is squeezed between it and the coffin bone. As the heel is the part of the foot in which expansion is greatest, and the descent of the sole and coffin bone most, and as the angle between the bar and crust is the place from which the sole is with greatest difficulty removed; so it is in the heels that the bruising and corn producing action of bad shoeing is most to be met with. Yet I have seen on all parts of the sole round near the crust, bruises caused by pressure of the sole downwards on the shoe. The way therefore in which the buttris aids in the production of corns, is from its unfitness for effectually removing the more depressed parts of the unnecessary horny sole. In the hands of a person aware of how the foot should be dressed, and who will take the drawing knife and rasp to give the sole, heels, and toe, the proper form, after doing the rougher part of the work with the buttris, it is an efficient and useful tool; and so long as people allow the feet of their horses to grow six months at a time without removing the shoes, they can hardly expect it to be laid aside. Its abuse, however, if better understood, would be easier guarded against; and it is to this, rather than to its entire disuse, that I wish my remarks to tend.

The common way in which I have seen feet prepared and shod here, is this: After removal of the old shoe the buttris is brought over the frog, bars and heels first, and these being soft and easily

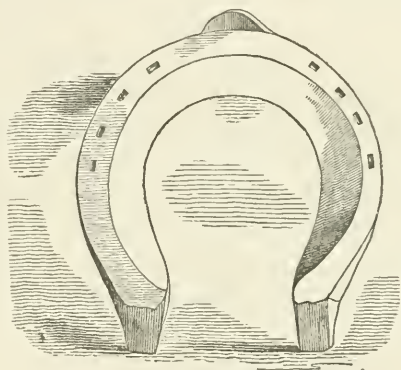
cut, get a liberal slicing; a scoop is then taken out of the sole on each side, extending nearly to the toe, and forming a uniform concave from the point of the frog to the out edge of the crust, so that when a scooped shoe is placed on it, instead of the foot and shoe presenting two level surfaces to each other, they rest upon two thin edges; and even with the level shoe, it is the thin out edge only of the crust that bears the weight. This scooping out of the sides of the sole, is all the implement can conveniently effect. It is not handy for rounding or shortening back the toe, and so is seldom applied in this way, that part being left entire, except a little out of the sole surface, which rather adds than otherwise to its projecting point. Neither is it available for cleaning out the sole from the angles between the heels and bars, leaving these parts prominent to rest upon the shoe. All it can do here is to bring the whole to a uniform level, and this being done with the foot off the ground, the instant it is set down all the parts change their relative positions, and if the sole was left equally full as the crust and bars (parts designed to bear the horse's weight,) it is now more so, and a week or two's work and growth brings such a degree of pressure on it as to bruise the sensitive sole underneath, rupturing some of the minute blood vessels with which it is studded, and showing the evil that is done by the effusion of the blood through the pores of the horny sole as in the condition called corn.

The foot being prepared in this way, the shoe was fitted (so far as it got any fitting) to its elongated and pointed form, and being turned wrong side up so far as the shape of the toe went, it was nailed as far back towards the heels as nails could safely be driven, and the same process being repeated time after time when the shoes were removed, we had the long, contracted, mule looking feet produced, that were seen daily on our streets.

A system of shoeing free from these defects is just as easy to practice, equally cheap, and productive of far more satisfactory results. The following is an outline of its most important points.

In making the shoes whether fore or hind, the elongated and pointed shape should be studiously avoided. Even when from previous bad management the feet are contracted at the heels and flattened in on the sides to an extent admitting of only a partial restoration to the proper shape; still the projecting point upon the

toe can be dispensed with, and a broad and solid bearing given in front. The fore shoes if they have a concave seat should have a perfectly level bearing of the breadth of the crust round the outside. (See figure 8.) The hind shoes do not need seating, as the hind feet have a greater concavity and less descent of the sole than the fore. Both fore and hind shoes should have a tip or projection turned up in front, as a rest for the toe to bear against, in the descent of the foot, and an aid to the nails in keeping it on. The web or body of the shoe should be of a uniform thickness all round, and when heel caulks are worn, they should be both one length, (figures 8, 17); and when only one caulking is worn, the other heel of the shoe should be thickened up to the same level, as in figure 15.



*Fig. 8.*

FIGURE 8—Represents the form of shoe here referred to. It is the fore foot shoe in common use generally in all parts of Britain; and is easily adapted for light or heavy work, and for having the ground side plain or fullered, and with, or without toe and heel caulking. It represents the upper sides of the shoes figured 12, 16, and 17. By replacing the shoes figured 7 and 11, with others made in this form, and confining the nails to the front part of the foot, the wearers were restored to comparative soundness, from being completely and uselessly lame.

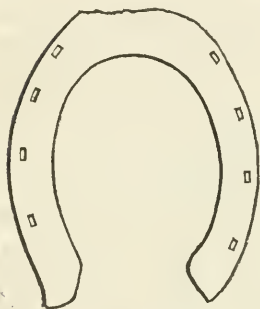
When toe caulks are required, either to give foot-hold for heavy draught, or for sharpening in winter, they should extend as far laterally as the breadth of the foot will admit, (figure 12,) be as little prominent as may be to afford sufficient hold, be of a uniform

depth from end to end, so that all parts bear equally on the ground, and have the bearing edge on the same level as a line drawn between the points of the heel caulks.

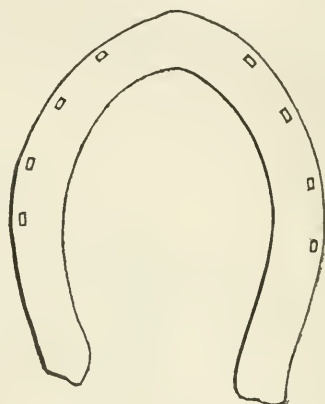
The fullering or grooving of the shoe is a useful device for securing the even punching of the nail holes, and protecting the heads of the nails from wear. Beyond this I am not aware of any benefits from it, and it certainly has the disadvantage of weakening the shoe and facilitating its being worn down. In France, many parts of Britain, and in all the English Cavalry Regiments, (figure 16,) the nail holes are simply punched and counter-sunk, without any groove or fuller, and have a nail suited to the size and form of the hole. The shoe made thus has a greater solidity and durability, and I have little doubt will ultimately be the form preferred. But whether fullered or not, there are one or two things about the punching of the nail holes not to be overlooked. They should all be so punched that the nails may enter the wall of the hoof on its inner edge. No nail hole should ever be seen on the seating of the shoe, nor nail in any part of the edge of the sole. To do this properly, requires some nicety, as both the thickness and slope of the crust alter as we proceed from the toe to the heels, and it is one of the things much neglected in the making of shoes, there being but few in which you will see a well graduated range of nail holes. A point worse managed, however, is the placing of the nail holes properly as regards their distance from the heels. No nail should ever be driven into the feet further back than its broadest part. This is a rule of nature's indication, and she will not suffer its violation with impunity. Behind the broadest part of the hoof the spring and expansion is such that it cannot be fettered or confined without harm; yet it is quite common to see shoes with one or two nails into this forbidden ground, and sometimes they are nailed to the very heels.

As an instance: a gentleman drove a horse from Fredericton to St. John, which had been shod the day before leaving. He was two days on the way, and before reaching here was lame on all four feet. On taking off the shoes no special cause of lameness was found in any of the feet except the fettering effects of the nails; but these were driven to within half an inch of the heel caulks, so as to destroy entirely the natural action of the foot. (See figure 9.)

In another case, a gentleman's horse in the neighboring parish of Portland, had been lame from corns nobody knew how long, as the hoof was so over-grown that the corns had never been discovered. In this case the fore feet admitted of being shortened back more than an inch, and a proportionate quantity taken off the sole; and the nail holes of the old shoe, instead of extending only half round as they should have done, occupied more than two-thirds of the circumference from the toe to the heels. (See figure 10.)



*Fig. 9.*



*Fig. 10.*

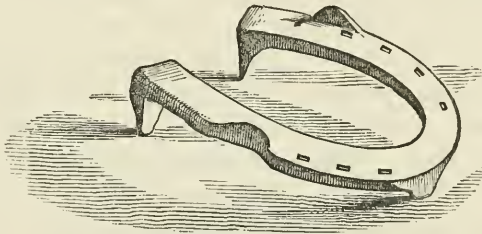
FIGURES 9 and 10—Are plain views of the sole surface of the two shoes above referred to. In form, proportion, and position of the nail holes, they are the exact representations of the originals. The long pointed toe of the one, and the proximity of the nail holes to the heels of the other, obviate the need for farther notice of their merits. The one was of Fredericton workmanship, the other St. John.

A third instance may be mentioned. A gentleman from Sussex brought a colt for me to see, being in the belief himself that he was foundered, as he was equally lame in both fore feet. The most careful examination could detect no acute disease as a cause for his lameness, but both fore shoes were nailed on with ten nails each, five on each side, and back almost to the heels, as if intended not to need removal during the animal's natural life.

During the time I was preparing these remarks, the following case occurred within a few doors of me, as if to impress more strongly



the necessity of exposing the system referred to. A dray horse was lame on a fore foot, and was taken to a forge and had a new shoe put on. Three or four days afterwards, (the lameness in the meantime having increased,) I was called to see him. I found the cause of lameness to be a suppurated corn in one of the heels, the inflammation from which had run so high as to break out at the top of the hoof, between the hair and horn. The cause of the corn was equally obvious. The shoe had no toe tip to steady it on the foot, but instead, had a large one turned up at each heel, (see figure 11) so as completely to fix the foot and make its lower part rigid as if in a vice. On inquiry, I learned that a shoe of the same kind had been on before the recent shoeing, and had no doubt produced the corn and lameness for which he was re-shod; while the more complete fixture of the new shoe caused the inflammation and suppuration I was called to treat.



*Fig. 11.*

FIGURE 11—Is a faithful picture of the shoe found on the foot in this case. It is a contrivance so absurd and hurtful under the circumstances, that had I not seen it, I would not have believed that any one possessing the slightest knowledge of the subject would have practiced it. Happily, such blunders are now of rare occurrence among any but the most ignorant of our shoeing smiths.

These were not singular instances; similar ones were occurring almost every day, and anything approaching to a well made shoe or well shod foot was the exception rather than the rule, at the time I write of.

In the preparing of the foot for the shoe, there is also, as I have already noticed, room for much amendment on the way it is practiced. The back parts of the hoof, having less growth and more wear on them than the fore, seldom require anything removed, except

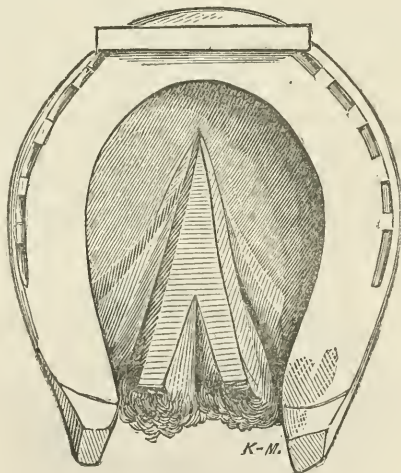
it be a little from the outside heel. The frog should only be touched to remove any cut or ragged portions. The bars, those angular ridges that lie between the frog and heels, should be left at their full strength, and the sole between them and the wall of the heel thinned down, so far at least, as to prevent the possibility of its descending on the shoe. The sole at the toe where it has the protection of the shoe, should have all the dead and ragged horn removed, and the crust should be shortened back in front, and a notch taken out for the reception of the upturned tip, and its whole lower surface where it rests upon the shoe made plain and level.

The last is a most important point. The weight of the horse is supported by the attachment of the coffin bone to the inside wall of the hoof, the lamina by which the connection is formed, permitting of a very perceptible amount of motion of the parts. It is consistent with this that the rest of the hoof upon the shoe should be greatest at the inner edge of the crust rather than the out side, so as to give the weight the most direct support. In the scooped out form of shoe and foot, (see figures 1 and 7,) where the bearing of the one upon the other is by the extreme out edges, this is widely departed from, and the effects are seen in the broken, twisted, and contracted edges and heels produced. When the fore shoes are made without a seat, as in case of having the side next the ground concaved, (figure 14,) the same holds good with respect to the flattening and leveling of the crust, but the sole requires to be more cleaned out so as to prevent its descent upon the shoe. For doing this, as well as shortening back and forming the toe, the drawing knife will be found a far fitter tool than the buttris. In applying the latter to the foot, the heels, frogs and bars, are what first present themselves, and stand most in the way of its cutting edge; with the knife, the toe and sole are the parts easiest to cut, the back of the foot being out of the way rather; and it is owing to this perhaps more than anything else, that in the hands of those who shoe by rote only, without rule or reason for what they do, the one tool may be taken as the emblem of a good plan of shoeing, and the other the reverse. It is quite possible to make a bad shaped foot with a drawing knife, and not impossible to make a good shaped one with a buttris, but it is more convenient with each tool to do the reverse.

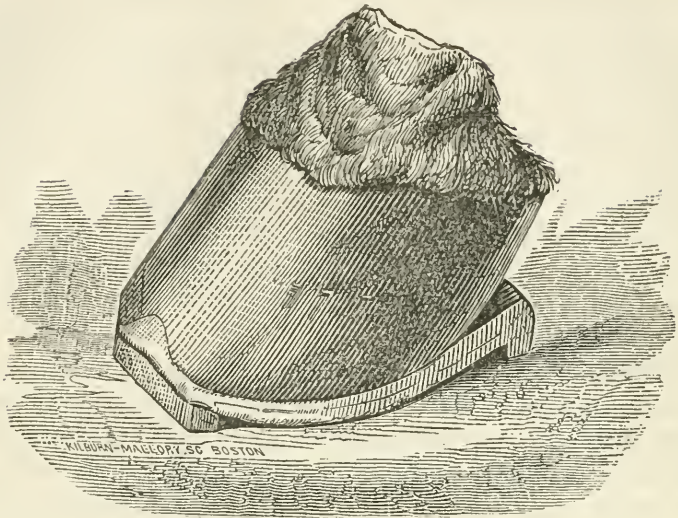
Few general directions can be given about the driving of the nails.

Different kinds of feet requiring different depths of hold. None of the nails should be so far to the inside of the wall as to press on the sensitive parts, (see figure 6,) nor so near the out edge as to split or break the hoof; and as a mark of fair and uniform driving, the nail points should come out all about one height. The rasp should be used to finish off with, but should be applied but sparingly to the upper part of the hoof, and wherever it has gone the surface should be coated over with a composition of greasy and resinous matters to stop its pores and prevent its drying and cracking on the surface; this should be done occasionally to the feet of all horses going much in snow and wet.

It is only horses used for heavy draught that should be shod with toe caulking; and where the animal is to be used for saddle only, even the heel caulks had better be avoided on the fore feet, as in figures 14 and 16. Of course this only applies to summer. In winter, when the roads are icy, there is a necessity for caulks to give foothold, but even then the inside caulk should always be left blunt for fear of its cutting the other leg.

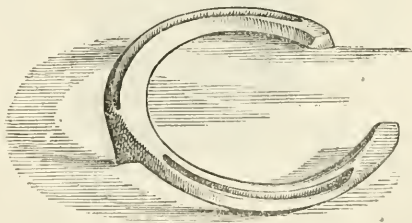


*Fig. 12.*

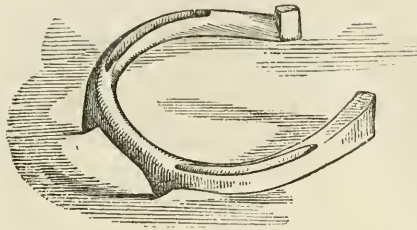


*Fig. 13.*

FIGURES 12 AND 13—Are sole and profile views of a thoroughly good foot, properly shod for heavy draught. The sole well cleaned out, and the frog and bars left. The toe caulk extending sufficiently far across the toe to give a solid support to the limb when only the toe is on the ground; and the upturned toe tip affording a firm abutment against the sloping point of the hoof. The direction of the fibres of the hoof as shewn on the cut will enable the reader the better to follow the arguments used at pages 146-7.

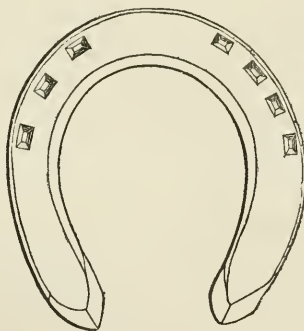


*Fig. 14.*



*Fig. 15.*

FIGURES 14 AND 15—Represent (ground side upward) an English fore and hind foot hunting or racing shoe, suitable for any kind of light saddle work. The fore foot shoe is dished or concaved on the ground surface, so as to give as near as possible the same form of tread and grasp as the hollow surface of the unshod foot. The hind shoe is rounded on the lower side, for the threefold purpose of affording strength in small bulk, giving a firm hold to the foot in leaping or galloping, and coming easily out of deep ground. It is commonly fitted with two tips, instead of one, to allow of the hoof projecting slightly beyond the shoe right in front, and preventing the annoying custom of forging, or striking the front of the hind shoe on the fore one, and the more dangerous one of over-reaching.

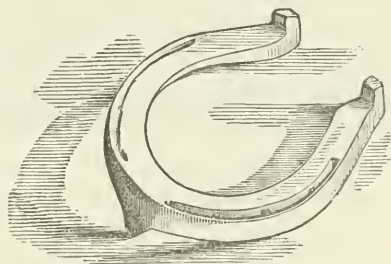


*Fig. 16.*

FIGURE 16—Represents the ground side of the shoe worn at present in all the British cavalry regiments. Until a few years ago the shoeing of each regiment was under the entire direction of its own Veterinary Surgeon; and though all agreeing in the same general principles, considerable diversity existed in some of the details,

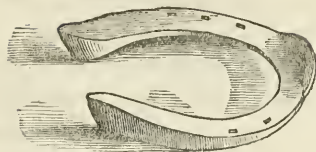


especially the outside form of the shoes. Lately a committee conversant with the subject was appointed to inquire into it, and report to the Horse Guards, accompanying their report with a plan for a uniform system, for the adoption of all the different regiments. The cut represents the shoe thus recommended; and though some good authorities have found fault with it, preferring to have the lower surface concave, as in figure 14, rather than flat, as in this; yet it is a good useful shoe for a saddle horse, where there is much riding on hard roads to do, and admitting easily of having toe and heel caulks raised on it if needed for draught work. The cut is from a fore foot shoe, the side not shown being represented by figure 8.



*Fig. 17.*

FIGURE 17—Shows the ground side and toe tip of the common English fore foot shoe, with double heels, for light harness work. In all these shoes, and in all the different kinds of shoe used in any part of Britain, provision is made in this or some similar form for the steadying of the shoe upon the foot, and preventing of the forward action of the foot upon the shoe. In all these shoes also the rounded form of the toe shows a palpable contrast to the pointed shape of the shoes, (figures 4, 5, 7, 9, 10 and 11,) which are but fair samples of the form of shoe worn here till within the last few years. In all, the nail holes are confined, as they ought to be, to the part of the foot anterior to its point of greatest breadth; and in all, a perfectly level bearing is given to the wall of the hoof all round.



*Fig. 18.*

FIGURE 18—Gives an idea of the French form of shoe, spoken of at pages 142-3. The pattern from which the cut is taken is a shoe for light riding, but can be easily adapted to any kind of work. The cut represents the upper or sole side, the deep shading at the toe, and the light below it, showing the manner in which the whole of that part is turned up to a right angle with the slope of the front of the foot, the better to resist its concussion and forward action. For horses weak in the back tendons, or inclined to bend at the knees, or stumble, it is an excellent shoe to enable them to do their work with greater ease and safety; and if sanative with them, why should it not be prophylactic to those that are sound.

It would be easy to multiply these illustrations to any extent, either from faulty shoes taken from feet in which they had caused lameness of one kind or another, or of varieties of improved ones that have been put forward from time to time in Britain, during the struggle that has been going on for the last fifty years for superiority. But it is not required. Enough has been shown to prove the need there was for a reform in the art in this country, and the need once shown, an important step is gained towards reform. To the scientific inquirer I would only say that the subject is far from being exhausted, my aim having been to confine myself to points plain and obvious, and to errors common and glaring. Could our horse-shoers generally be brought up to the standing I have indicated, it would *then* be time to introduce inquiries of more strictly scientific interest. But we must not attempt nor expect too much at once, nor on the other hand give up hope, although reforms are but unwillingly adopted. Here in St. John, since the preceding views were given to the public a few years ago, a most material change and improvement in the general mode of shoeing has taken place, so much so, that some of our shoeing smiths would hardly

now acknowledge the shoes they put on so recently as five years ago, and that are figured in the preceding pages as their handiwork. The point for all who would excel in this most necessary and useful art to find out, is, that its secrets, and the welfare of the valuable animals depending on it, are not things to be right or wrong, according to this or that one's notion, but are based on mechanical and physiological laws, old as creation, and persistent as nature herself; and that whatever the plan be, whether old or new, unless it square itself by these laws, it is naught.

Hoping, my dear sir, that the foregoing hints, if you think them worthy of publication, may be of some use in your community,

Believe me ever yours very truly,

M. A. CUMING, V. S.,

Member of the Royal Veterinary College,  
of London and Edinburgh.

## REPORT ON BARNS.

MAINE BOARD OF AGRICULTURE, }  
 January Session, 1857. }

The Standing Committee appointed to report after the close of the session to the Secretary of this Board, "plans and suggestions regarding the best mode of constructing barns and barn cellars," have given such attention to the important subjects assigned them, as to present the following views and suggestions as their report :

The anxious interest with which the people of Maine are now looking for agricultural improvement, the zeal and intense desire in many, manifested in practical agriculture, by the use of improved implements, better breeds of animals, imported seeds, skilful culture, increased attention to fertilizers, drainage, growth of green crops, feeding of stock, and improvement in other forms—the general desire to advance the condition of husbandry, seconded and fostered by recent liberal legislative enactments,—these cheer and encourage us to press onward, leading the way, or pointing to general or particular achievements.

Our farmers complain that winter interferes with, and diminishes their profits. To what extent it does so, is an important subject of inquiry. It may be another's privilege to teach and show the ameliorating effects of winter or arable cultivation, and its beneficial influence on the hay crop and grazing.

We cannot possibly shorten the period in which our stock must wholly be fed at the barn; and it is only left us to adapt our system of husbandry to the production of the largest amount of feed to the smallest area, and learn to appreciate the truth, that "*shelter is cheaper than fodder.*"

An improvement on our present practice of shelter, and care of our animals, would be equivalent to an actual shortening of winter. It can hardly be questioned that exposure of cattle to extreme cold injures their health, and thus interferes with the owner's profit. Chemical physiology teaches us that warmth is equivalent to a certain portion of food, and that an animal exposed to more cold will eat more, and one better housed, and warmer kept, will eat less. To keep an animal comfortable, therefore, is to save food; and this alone is a sufficient inducement to provide that comfort to the full extent. (1.)

(1) It is asserted on good authority, that exposed animals will consume a third more food, and come out in the spring in worse condition.

As we are appointed to the honorable and responsible duty of furnishing good and proper plans for barns, to all who may want barns hereafter, we cannot stop here to show both sides of the picture of *barns as they were*. Much improvement is seen on every hand over the old style, consisting of a wooden frame standing on a few wooden blocks or cobble stones, covered with single boards, with a generous crack at each joint for ventilation, rendering the inside rather the colder side.

In building, we study convenience and adaptation to the uses and purposes intended. To this we join economy, and look to a prudent disposition of material to secure strength and permanence to the erection, and greatest convenient space in proportion to the outside. This last point is often lost sight of in the many long, low, narrow buildings everywhere to be met with. (1.) Let us look at the plain, simple teachings of geometry in this connection.

Take a barn fifty by thirty feet, and height of walls fifteen feet. This gives us of enclosed cubic feet of space,  $50 \times 30 = 1500 \times 15 = 22,500$  feet. Take a barn forty by forty feet, and fifteen feet high, and we have of enclosed space,  $40 \times 40 = 1600 \times 15 = 24,000$ . Thus we see a clear gain of fifteen hundred cubic feet of space in precisely the same number of square feet in the outer walls. This is obtained in the change of form from the parallelogram to the square. Then the roof is the same on a barn of fifteen feet in height as one of twenty. An economical plan as regards enclosed space for the quadrilateral form, is, to adopt the full width for convenience, as proved by experience, and also the full height; then extend in length to meet the demands of the case.

In economy of enclosed space, geometry teaches us farther in this matter. It is consistent with our general purpose to show a practicable approximation to the circle in the erection of our buildings, of whatever materials.

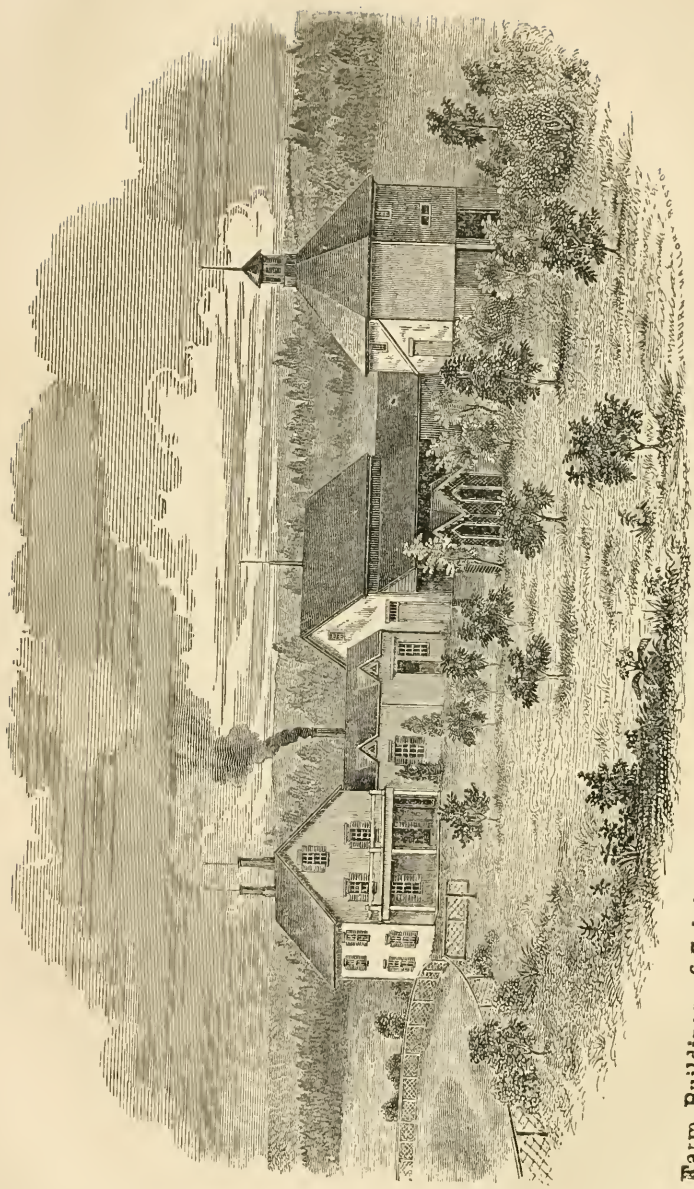
Take a barn thirty by thirty feet, and twenty feet high— $30 \times 30 = 900 \times 20 = 18,000$  feet. Compare with this an octagon of the same extent of wall, each of its eight sides being fifteen feet. We

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(1.) The committee, in consulting European authority on barns and stables, find one point in their practice to commend—permanence in their structures. Beyond this, we have only to say, they are long, low and narrow, not generally designed for the storage of grain or hay, and affording no shelter for manure.







Farm Buildings of Calvin Chamberlain, Fexcroft, including Octagon Barn described in his report.

here have  $15+10,61-10,61=36,22\div 2=18,11\times 15=271,65\times 4=1086,60\times 20=21,732$  cubic feet, showing a gain by this approach to the form of the circle, of 3732 feet in this small barn; the capacities of the two being as 6 to 5. In most cases, it proves good economy to unite in the erection of a barn as many objects, purposes and conveniences as practicable, saving the expense of numerous smaller buildings, and a loss in time and travel in conducting each day's routine of business. An octagon of fifteen feet in the sides is too small for a farmer, yet many suburban occupants of a few acres will find this size just the thing wanted.

One of your committee a few years since changed his residence, taking a few acres of land with unfinished buildings, and wanting a barn. We decided on the octagon, but never having seen a building in that form, and no mechanic being at hand with the skill to aid us, what we did in the case is claimed as an original thing *with us*, and may be pertinent for the occasion, inasmuch as it may add our test of the thing to theory.

The plat of ground favored our design for a cellar under the whole, eight feet deep, and a cart-way leading out on a level. The cut (figure 1,) shows the floor plan.

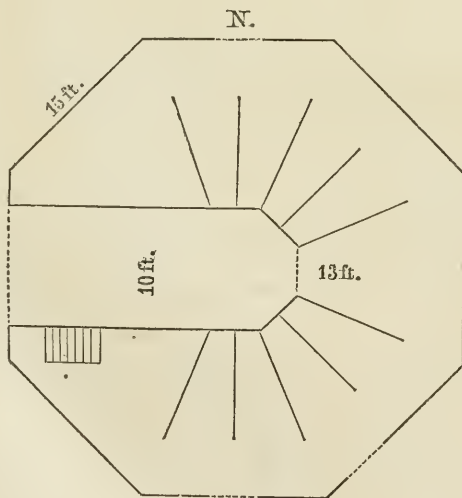


Fig. 1.

Scale 15 feet to the inch. Diameter of barn 36 ft. 2½ inches.

Floor, ten feet in the clear; doors same width and height; height below scaffold, seven and a half feet clear; entire height of walls, nineteen feet. A door is shown opening north to the pasture, four feet wide and seven and a half high; one south, same size, opening to yard; one on south-west side communicates with other buildings. Stairs lead to cellar and hay-loft. Passage way behind cattle stalls five feet wide, admitting wheelbarrow to pass at any time to any manure scuttle. Gates hanging to outer wall close passages to stalls, so that any animal may occupy its place untied. Side-lights at large doors, and a large window on opposite side, one sash of which slides horizontally, light the stable. Four large windows, set quite up to the plates, light the hay-loft. These let down at top, and are left down half the year; the two feet projection of the roof protects them from all storms. Cellar is lighted by four double windows and the side light at head of stairs. The open space, thirteen feet long, at end of floor, admits the horse, so that the hay-cart is brought to the centre of barn for unloading.

Your committee, not being familiar with the use of descriptive mechanical language and terms, must proceed in their own way, at the risk of being misunderstood.

A brief view of this structure may interest and aid the novice, however worthless it may be to the accomplished mechanic. Having laid out the site, we proceeded to remove the earth to the depth of about three feet, then dug a trench a little wider than the designed foundation, to the proper depth, and laid the cellar wall of granite which had been split from boulders to remove them from arable land. This wall was raised six feet, to the surface of the ground, on which was set granite underpinning, showing two feet above. Four granite posts, set deep, support interior sills. The cart-way from east side of cellar is ten feet wide, closed by double doors, secured on outside by strong cross bars, to hold the pressure of a manure heap.

Sills and sleepers are of selected cedar; outer sills seven by seven inches, on top of which is pinned a plank four inches wide. The entire floor is then laid of two inch plank, resting three inches on outer sills, leaving stairway and a sufficient number of scuttles for passing manure, roots, or material for compost into any desired part of cellar. The cattle stalls are afterwards planked within division walls, the forward end of planks raised two inches from under floor. Slots

are cut in floor behind cattle, one inch wide and of length to pass a shovel, for venting liquids.

One-half the earth in cellar excavation, it will be noticed, is left to be incorporated in the manure, and eventually carried to the tillage land. We find the hogs not averse to this sort of sub-soiling, and the dirt, although not the best for an absorbent, is being removed quite as fast as we desire.

The outer sills, girts and plates are all of the same size, and in framing are cut to a board pattern, the ends without tenon or mortice, at the right angle to fit together, and are secured at the corners with bolts of half-inch refined iron, fourteen inches long, a nut worked on a full thread screw at one end, and a large head at the other. These bolts, passed through the timber at such an angle with the grain, with a well fitted heading, are stronger than any device for a union of the wood; indeed, we think even these bolts superfluous in our manner of boarding, except in the plates. The corner posts have their outer sides hewed to the shape of the corner; their ends, cut without tenons, rest on the plank top of sills, and having the girts resting on their heads. Posts above the girts have the plates resting on them in the same manner. The door posts are of the whole height of the wall, and tenoned in the plate.

The door cap has two braces of three feet run above it. These are the only braces in the frame.

The studs are 4 by 3 inches, without tenons, except those on each side of the corner posts, which are of the whole height, halved to the girts, and tenoned in the plates for the convenience of raising. The girts on each side of barn floor extend across the barn, tenoned in door posts and girt opposite; being over corresponding cross sills, these four are the only long timbers required in the frame; and these, from having intermediate supports, may be spliced without detriment.

To raise the frame, put together door posts, cap, plate, studs and braces between them, and the short girts tenoned in door posts and reaching the corner, and raise it; set up all the corner posts, and stay them in place; put on the girts; set the studs in place, and nail them at the ends; then proceed to board up the walls to the girts; provide boards of the proper length for the sides where no door or window occurs, so there be no waste; saw them three-fourths



inch thick, and put them on double, nailing fully with No. 12 nails; put up the upper portion of the frame in the same manner, and complete the boarding of the walls before raising the roof. Erect a temporary staging on centre girts, on which to work in raising the roof; give the roof a good elevation. Ours rises fifteen feet above the walls at the apex; the corner rafters 8 by 3 inches, of spruce; the others two inches thick. This form of roof, when well boarded and nailed, is self-supporting; no beams nor interior posts are necessary; clapboard the walls; shingle the roof, painting as you lay the shingles. A cheap paint may be had of pine oil and hydraulic cement; or Ohio clay, (Blake's patent,) or even Maine clay.

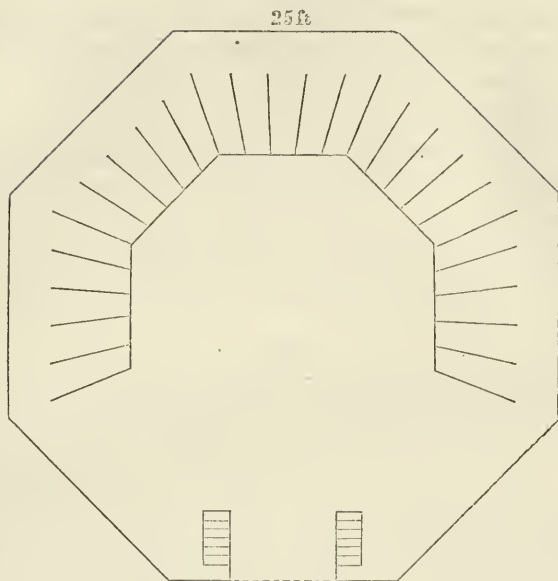
A scaffold thirteen feet long is put over the floor, and twelve feet above it.

The small barn above described will store twenty tons of hay. We find it convenient, and if it has faults or omissions, we have not, in three years, had time to find them.

We are satisfied that no other disposition of the same amount of material will give so strong and spacious a structure. The frame is simple and cheap. The covering, if put on as it should be, takes much time. A considerable saving in labor may be made by cutting the shingles to pattern for the corners at a shop with a burr saw and side-table. A ventilator is left at the apex of the roof, and always kept open. Good scaffold flooring can be made of plank sawed from large elm trees, which are of but little worth for other purposes.

This plan, though rather on the "Chicago balloon" order in its details, is offered with much confidence.

The committee will theorize so far as to present in outline a large structure on the above plan.



*Fig. 2.*

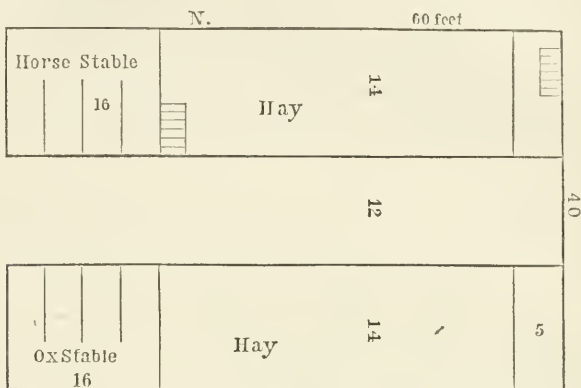
Scale 20 ft. to the inch. Diameter of barn 60 ft. 4 $\frac{1}{3}$  inches.

FIGURE 2 shows a barn of twenty-five feet on the sides. Diameter of barn sixty feet and four and one-third inches. A good height of walls for such a barn would be twenty-four feet. The floor-way should be twelve feet in the clear. Under the girts the centre space is thirty-three feet wide. Five sides give ample room for twenty-five stalls for large cattle or horses, being four feet wide each at the rear. Pillars may be set in front of stalls to support the scaffold, and leave the centre space clear. The loft of such a barn will store one hundred tons of hay. In many locations the cart way could be cheaply made to an upper floor, thus saving much severe labor in the unloading of fodder. When such an arrangement is not practicable, (3.) the height of roof on this plan would admit

(3.) An upper floor for a cart-way in this plan is not impracticable, even on a level plat. Neither should the cellar be omitted. To a floor elevated twelve feet above the lower one, the lower being three feet above the surface of the ground, an easy grade may be had (five degrees elevation) by commencing an artificial embankment one hundred and seventy feet distant. The twenty feet adjoining the barn should be a bridge, under which a short cart may enter and leave the lower floor. This matter of an upper cart-way is one of immense importance, and should be secured even at a heavy outlay.

a system of pulleys attached to the apex of the roof, and by a horse working below, a load of hay could at once, by a net of ropes laid in the cart, be raised and swung to any side by a changeable pulley, and deposited at will.

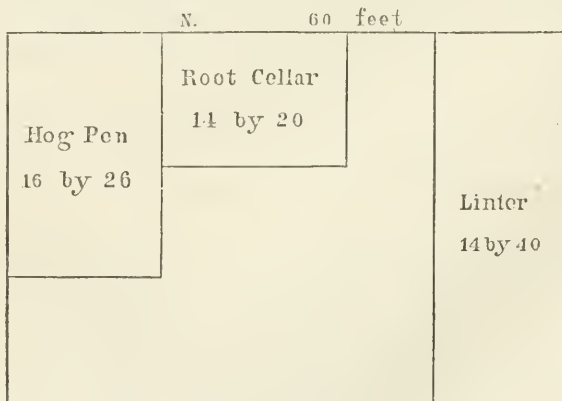
We will not tax our artist for many lines and figures on this plan. A general idea based on our convictions of its entire feasibility, is all we here offer.



*Fig. 3.*

Scale 20 feet to the inch.

FIGURE 3 represents the main floor of a barn sixty by forty feet, facing the south, the ground descending east and south, entrance at the west. This figure shows the floor, stables for horses and oxen, hay bays, walk for feeding cattle in basement, and stairs to basement and root cellar. Figure 4 shows the basement to same structure.



*Fig. 4.*

This plan is designed for a substantial wall under the west and north. The yard is to the south, and on the level of the bottom of the cellar; the hog pen is shown on the west, sixteen by twenty-six feet, under horse stable and floor; the root cellar at the back, fourteen by twenty feet. The *linter*, (corruption of *lean-to*?) byre, or whatever proper, local or provincial name may be applied to a cattle stable, is at the east, forty by fourteen feet; being above ground and built of wood, is free from damp, and admits of being well lighted and ventilated. The remaining space serves for the manure and a shed for stock.

It will be observed that the hog pen—the farmer's bank—is, in this plan, large, and its location well conceived. Designed to be near the swill-room, it takes the horse manure, and being under the floor, material for composting may be discharged therein through a scuttle from the cart.

The feeding troughs may be placed under the side of the floor way, and kept in place by fixed vertical rods of iron passing through their ends, on which they may be raised as the manure accumulates. The manure is discharged from the hog pen by a large door or window opening into the shed.

The committee offer this plan with much satisfaction; but before leaving it to the criticisms of the farmers of Maine, we will give it the first *cut* ourselves. The owner of such a structure must practice "eternal vigilance" or the liquid excrements from the cattle stables will run to waste. The best that may be done by providing dry absorbents through our long winters will serve only a partial purpose, unless the following plan, or some other equally efficient, be adopted:

The width we have given the linter will serve to admit an open reservoir back of the floor, constructed cheaply in the following manner: Take heavy earth,—clay or gravel—raise it to the sills, packing it firmly, forming a trench representing the vertical section of a circle, three feet wide and a foot deep at the centre. Mix hydraulic cement to a semi-fluid state, pour it in the trench, and spread it with a brush broom. Give it a good coating. This will make an indestructible, impervious receiver. Lay the floor tight, a little inclined, with the planks projecting eight inches over the trench, the remainder left open. We have this idea from the lips of Prof. Mapes.

At the risk of infringing on the prerogative of another honorable committee, we quote from the same for authority, on a matter so intimately connected with our subject, and of such vital moment, that it will bear repetition even *in a book*.

Having provided our reservoir for liquid excrement, we will point to the best and most generally diffused absorbent for filling it—*muck*—by introducing

*The "Salt and Lime Mixture."*

[See "Working Farmer," Vol. 3, page 280.]

*"To three bushels of caustic lime, add one bushel of salt dissolved in water.*

The salt water will slake the lime, and a chemical change will take place. Salt is composed of *chlorine and soda*, both of which are valuable as manures. The lime will combine with the chlorine, forming chloride of lime, while the soda, being set free from the chlorine, will take carbonic acid from the atmosphere, and become carbonate of soda. Having commenced with salt and lime, we now have in its stead, *chloride of lime and carbonate of soda*, four bushels of which added to a cord of muck, peat, swamp-mud, wood-earth, or other organic matter, will decompose in a short time, and render it suitable for being composted with stable and other manures.\*

In making the salt and lime mixture, if the lime is not fresh from the kiln, it will not receive all the dissolved salt the first day. When this is the fact, turn over the pile the following day and add

\* [The method of preparing muck for use by means of salt and lime, introduced by Dr. Dana, is a very valuable one, and worthy of extensive use. It is best done by placing the lime upon the muck, slaking it with a *saturated* solution of salt, and then mixing the whole mass immediately and as thoroughly as possible, turning the whole several times subsequently.

But the extract from the "Working Farmer," as above given, makes erroneous statements of the chemical changes which take place. "Common salt consists of chlorine and *sodium* (not of chlorine and *soda*.) If water is added to it, the chlorine will abstract from it hydrogen, and the sodium oxygen, and muriate of soda is formed." This muriate of soda is decomposed by caustic lime, which has a stronger affinity for the muriatic acid than the soda has, and so muriate of lime is formed, (not chloride of lime) and the soda set free, at first in a caustic state, which enables it to act more efficiently upon the muck. It however gradually attracts carbonic acid, and changes to carbonate of soda; other, and more complicated combinations and changes also take place, which it is not necessary here to enlarge upon. The errors of statement thus referred to, do not affect the results of mixing salt and lime in the least, but it is always better to use correct terms; and if the above should lead any to think he could thus make *chloride of lime*, he would find himself egregiously mistaken; for scarcely any two salts in common use are more widely unlike in their uses, and effects when used, than muriate of lime and chloride of lime.—Ed.]



the remainder, or perhaps three or more turnings may be necessary before the salt water will be received by the lime. This mixture should always take place under cover, as both the chloride of lime and carbonate of soda are soluble in water. The mass should be turned over every other day for a fortnight, and it will then be ready for use. We have decomposed with this mixture spent tan, saw dust, corn stalks, swamp muck, leaves from the woods, and indeed every variety of inert substance, and in much shorter time than it could be done by any other means. Many soils are short of chlorine and soda, and for such the salt and lime mixture is an admirable top-dressing; but its great use is in enabling the farmer to prepare a large amount of material suitable for mixing with stable manures as fast as made, and which, during the fermentation of a compost, is capable of absorbing the more valuable portions, and thus be rendered equal in quality to the putrescent part."

Muck prepared by the above method during our dry summers, may be put under cover in such a state of dryness as to be handled during winter. For the convenient storage of this article in quantity, we suggest an addition to figure 4, which we will give without a diagram. Attach to the front of the barn an overshot roof, projecting so as to cover sixteen feet in width. At the east end, in front of linter, inclose a room sixteen by fourteen feet, and communicating with it, or, in other words, lengthen the linter room sixteen feet in front. This space filled with prepared muck to the height of eight feet, is fourteen cords. At the other end of barn, the open space in front of hog pen might be inclosed and lengthened in front in same manner; or perhaps better extend the hog pen over the whole space, in which case, the muck used as an absorbent under the ox stable could be deposited through the barn floor. The committee believe the few plans here offered, by being enlarged or diminished to suit cases, will be adequate to present general wants; and we may take our leave without infringing on our idea advanced at the outset, by introducing plans of sheep barns, dairy barns, or structures to be multiplied on the farm for special purposes. We have no ambition to gratify by an attempt to make a picture book.

*Some fragments gathered up.*

In the plan figure 1, we like cribs for cows at least eighteen inches above the floor, built of hard wood; the front of feed-box five or six inches high; a rack set vertically in the line of the floor-way, and a swing-board at the floor side for feeding long fodder. The space

under the crib is left open for the purpose of placing within reach of the cattle such coarse fodder as may be partly eaten, and the residue to go for bedding.

Lest we should not be understood in our brief explanation of figures 3 and 4, we will add, that the plan is designed for a plat that descends at least eight feet in the length of the barn. This may be secured in part by an artificial embankment at the upper end and the back side. The object is to secure the whole height of the linter in the basement, above ground. It will readily be seen that this plan is an accommodating one; it may be reversed when the entrance is desired at the east end. The root cellar being protected from frost by the earth embankment at the back-side, and by the hay over it, may be secured on the other sides by a double wall of boards, filled between with dry tan or other non-conductor, as an ice-house is built. We would urge the importance of double boarding the walls of barns, whether the frame is designed for horizontal or vertical covering. If it is to have an outer finish of clapboards, the nails hold the better. It is a cheap way to secure warmth and strength to the structure. A barn should be nearly proof against frost in our most severe weather, when well filled with cattle and their fodder. There is not the least difficulty in attaining to this.

A few parting words :

With this brief attempt towards a discharge of the duty assigned, it seems due to the Committee on the one part, and the Secretary and the State on the other, that we should say, that this committee was appointed without their being consulted, and without their knowledge at the time; that the individuals composing it have no personal acquaintance one with another; that they have failed since their appointment to effect a meeting of any two for consultation; that at a late day, when the work could no longer be deferred, the working part of the committee could not be less numerous; that the broad invitation given to "the rest of mankind" by the Secretary in his circular, failed to elicit anything touching this subject. Bred neither to literature nor mechanics, with but an occasional hour for the indulgence of extras of this sort, are circumstances attending the working part of the committee, that mark their impress clearly on the face of the production.

The chairman acknowledges his obligations to his associates, for

the expression of their cordial good wishes for the successful discharge of our duties, and desires they may be richly rewarded by the approval of a just and generous discriminating people, of all such of their timely views and suggestions as have been incorporated in these pages.

CALVIN CHAMBERLAIN, *Chairman.*

FOXCROFT, Nov., 1857.

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## REPORT ON BEST METHODS OF PRESERVING MANURES.

S. L. GOODALE—*Dear Sir*—Having had no interview with, nor any communication from, any of my associates, except a short conversation with Mr. Parlin, after long delay, by your repeated promptings, I am induced to communicate the following, not as the report of a committee, but as my own views on the subject:

It is to be regretted that a subject of so much importance to the agricultural interests of the State, as that of reporting "facts and conclusions regarding the best and most economical method of preserving solid and liquid manures," should not have had a seasonable and thorough investigation by an able committee, who would have presented a lucid report, in such form, and so well sustained by science and by practical tests, as to secure for it an attentive reading, and prompt to the desired action on the part of the farmers of the country. On no subject connected with the agriculture of this country, is reform in opinions and practices so much needed, as on that of preserving the manure made upon the farms. The loss from want of care, and from erroneous practice, is immense.

Had I confidence in my ability to do it in an acceptable manner, I would not attempt a dissertation on the preservation of liquid manures to be applied in a liquid state, for in the present condition of our agriculture it would be labor lost. Though there can be no doubt of the fact that plants receive all their food in a liquid state, and that nutriment is not thoroughly prepared for their reception until it is liquified, the farmers of this country have not generally the capital to invest in tanks, pipes, and other conveniences to convey

manure to their fields in liquid form, if they could be convinced that it was desirable to do so. The true condition of manure to be applied, and method of applying, for us, is to carry it to the field and thoroughly mingle it with the soil, in a state as completely soluble as can be attained without loss of any of its fertilizing properties.

The important question, in the existing state of things, is the method of preserving manures so as they may be applied in any form or manner.

Without claiming perfect accuracy on the point, it is deemed safe to say, that something more than fifty per cent. of the manure made from the farm stock is lost in the onset, by suffering the liquid portion to run to waste. True, some farmers are saving it by the use of absorbents, but the number is so small in comparison with the whole, that the excess of value in the liquid, above the solid portion, (being, according to the best authority, as five to four,) is so great, that the average waste is more than one-half. This estimate applies only to "housing time"—to stock that is housed, and to the manure made in the house. Manure made by stock in yards, both summer and winter, suffers still greater wastes, and the manure from flocks is, during the warm season, almost without exception, an entire loss; not so much as enriching their own pastures, being dropped in the woods, by the sides of streams and ponds, or wherever the sheep can find a shade. Add to these the waste of pig manure, poultry manure, sink water, night water, night soil, bones, dead animals, and other refuse about farm establishments, and the aggregate waste must equal two-thirds the fertilizing matter made from the consumption of farm produce, which, with proper conveniences and proper care, might be returned to the soil to aid in reproduction.

However important and profitable it may be, in some cases, to apply imported specific manures to renovate exhausted lands, the only reliable source of fertilizers to continue and increase the productiveness of our farms, is *the manure made upon them, and from their products.*

Should any think the waste is here estimated higher than the facts will warrant, let such objectors cast about them for proof of the unsoundness of the position assumed. How many of the floors of cattle "tie-ups" and pig houses of farmers who take due care

that their stock has clean and dry lodging, will he find perforated with augurs that the urine may run off as fast as it is voided? How many cases in which the manure from cattle stalls is thrown outside of the barn to be mingled with the snow and drenched with the rain that falls upon the roof, and left in this position till "after planting," and then carted and spread over the surface of yards, upon the long manure made by "feeding out," to be mixed with it by repeated plowings and the tramping of cattle during summer, these yards generally receiving all the water that falls upon one side of the roofs of the buildings that surround them, and not unfrequently the water from higher ground outside. Manure treated in this way, thus far, is often carted to the field in the fall, containing *two waters to one manure*, dripping all the way, there to remain uncovered through the winter, for use in the spring. How many dead horses and other animals are hauled into the woods to feast foxes and crows, or thrown into ponds and streams for food for fishes, or, worse still, left to rot in the field, to poison the atmosphere with their deadly effluvia! On how many farms will he find any pains taken to preserve bones and apply them to the soil in any form? Will he not oftener find them scattered about the yards and over the grass fields, wherever the dogs have left them? On what proportion of the farms are absorbents collected to receive the water from sink-spouts, wash-rooms and water-closets?

Some or all these things may be witnessed on a great majority of the farms in this State, with others, in a greater or less degree, improvident; and amongst them may be classed that of carting bog-muck and other material into *yards* to receive the droppings of cattle, the sun and rains for a while, till a large portion of the volatile properties of the whole are carried off in the air, and the soluble parts washed out by the rain.

Agricultural writers and speakers have been diligent in exhorting farmers to this course. Perhaps, on the whole, it is better that this should be done than nothing; but in some cases, not so much is gained by all the labor of extra cartage as is lost by drenching and evaporation; and in all cases, the loss from these causes is very great. Had the breath and ink which have been spent in keeping the importance of such a course "before the people," and the labor which has been spent in following such teaching, been devoted to



showing the necessity of having shelter for manure, providing dry absorbents, and keeping cattle housed as far as practicable, both summer and winter, and this teaching been as faithfully followed as it has been in the former case, the benefits would have been greater, at less cost.

The course here taken, without any attempt to point out a remedy for the evils complained of, would subject any writer to the charge of "tearing down." To avoid this charge, and to carry out the design of the present effort, it will be attempted to give the details of a method within the means of every farmer, by which the principal loss—that of the liquid manure—may be avoided.

The management of manure is so connected with the management of stock, that it is difficult to treat of one without reference to the other. To successful farming, it is equally important there should be covering for manure, and well arranged and comfortable stables for stock. A hard, dry and smooth yard or yards, connected with the barns and stables, is not only a convenience, but almost indispensably necessary.

For saving all the manure and keeping the cattle clean, the best arrangement for a stable is for each animal to have a separate stall, with the floor a little inclined from the stanchions back; and in the floor, at such a distance from the stanchions as to give the cattle room to stand, there should be a gutter six inches deep and fourteen to eighteen inches wide. From the gutter to the back of the stable, the floor should be horizontal and level with the outside sill. This horizontal part of the floor, in a stable fourteen feet wide, will be three or three and a half feet wide—wide enough to allow cattle, in coming in, to walk upon till they arrive opposite their own stalls or stanchions; they will then step over to their places. By this arrangement, there is a dry walk in the rear of the cattle, which may be kept clean, as both the solid and liquid manure, drop into the gutter; and if the stanchions are so near the partition in front that the cattle do not step forward into the manger or crib, they will never drop manure where they can lie down in it. Independently of the advantage of the gutter for the reception of absorbents, the benefits of a dry walk behind the cattle and of keeping them clean, is a full compensation for the extra cost of the floor, which cannot exceed two shillings a head for the cattle in a stable thirty or forty

feet long, if made at the time of building or repairing. The idea of this gutter was taken from "The Working Farmer," and acting upon the suggestion, in repairing the stables on the farm of R. H. Gardiner, Esq., I made a gutter of the kind here recommended, in stable room enough for the accommodation of thirty or forty head of cattle, seven years ago. An advantage, not before named, is that of less liability of the manure freezing to the floor in the gutters than on a floor where the urine runs off. The gutters described by the editor, and which he has adopted on his own premises, are much larger than those here described—large enough to hold the manure made for several days, with the addition of muck to absorb the urine for the time. Those recommended above will need clearing out every day.

Having these preparations—the shed or a dry cellar for the reception of manure, the dry yard, and the gutter in the stable floor—there should be provided a supply of dry material to be used in the gutter as an absorbent. For this purpose, bog muck, rotten wood, leaves, saw dust, spent tan, charcoal dust or loam, may be used with profit. If the material, whatever it is, is not dry at the time of collecting, it should be stacked in or near the yard, and in the dry part of the season spread a few inches thick over its surface, and as it becomes dry, removed under cover, and the yard spread over again. In this manner, the matter intended for absorbents may all be prepared. A convenient place of deposit is one end of the stable, if not wanted for cattle. When this cannot be spared, an open shed, with ground or floor so raised as not to be exposed to water, may be used; and in the absence of this, it may be re-stacked and a temporary roof thrown over till better preparation can be made. In cases where it is necessary to make additions to the farm buildings in order to adopt this method of preserving manure, a good arrangement would be to make an addition to the stable, twelve feet wide or more, upon the side or end in which are the cattle stalls. If the ground falls off, or the stable stands a foot or two above the level of it, the floor over the lower room which is designed to receive the manure as thrown from the gutters, may be so low as to admit of conveniently throwing the material to be used as absorbent from the cart into the room directly above that which is to receive it after being saturated in the gutter. From this second floor, (on the sup-

position there is a floor near the ground,) the absorbent may be shoveled directly into the gutter through doors made to rise and fall in opening and shutting. Besides this being a convenient depository of muck, &c., it may be lighted and made comfortable quarters for poultry, both summer and winter.

With these fixtures, and a supply of dry muck on hand, the arrangements are complete for "preserving solid and liquid manures," so far as the manure of neat stock and poultry is concerned; and to secure all the benefits of them, it will be necessary that the dairy cows, and such other stock as come home at night, should be put in the stable, and that all stock should be fed under cover during winter, the gutter daily supplied with as much muck as the urine will saturate, and be cleared out every day. The practice of "putting up cattle" at night will never be abandoned by any farmer who has tried it long enough to learn its advantages. By pursuing a method similar to the one suggested, the last two summers, the manure of five cattle, with the addition of three or four cords of charcoal dust, has been made of as much value to me as that of fifteen or twenty for the same time would have been if dropped in the yard.

To save the manure from sheep, they should be fed under cover, in boxes or cribs, either in sheds open on the warm side or with wide doors that open by raising them with pulleys. Sheep, if left to their choice, will leave most of their manure under cover, both winter and summer. The floor of the sheep house should have an occasional covering of muck, that nothing be lost. Pastures for sheep should be so arranged, if possible, that they can have access to their winter quarters in the summer, which they will be sure to occupy on hot days, if the sun is excluded and there is a free circulation of air through them. If sheep cannot come to the barns in summer, low roofs may be built on high ground in their pastures, and dry muck thrown under for them to leave their excrement in. Sheep prefer this kind of shade to any other, and to be out of the sun and the trouble of flies, will occupy it during most of the warm days. In this manner, a few loads of manure each year may be saved, which would otherwise be an entire loss. This manure is not inferior in quality to that sometimes sold for guano.

To go through with describing the methods of preserving other wastes about farm establishments is more of a task than I feel

inclined, at present, to undertake, and close by suggesting that it be recommended to the Trustees of the Maine State Agricultural Society to offer premiums for the best fixtures, conveniences and *practices* in saving all manures, and materials capable of being converted into manures, on the farms of competitors. By this, something practical and valuable to the public may be gained.

In treating of the method of saving the manure of neat stock, perhaps it should have been added that the bedding of the stock, whether straw or other matter, should pass into the gutters and be saturated before thrown out.

Another after-thought: it will be observed that in this communication, the practice of carting rain water into the field for manure receives little favor; though indispensable in agriculture, it is thought it may be had on the spot in sufficient quantities at less cost.

Yours truly,

NATHAN FOSTER.

GARDINER, Dec. 11, 1857.

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## REPORT ON GRAPES.

FREEPORT, Sept. 30, 1857.

MR. GOODALE—*Dear Sir*—I received a circular from you, in which I notice that I was appointed one of a Committee, by the Board of Agriculture, to report on the best varieties of hardy grapes for open culture, and such varieties only, as will, in their opinion, mature fully in this State.

It is well known that a number of varieties of grapes will fully mature in this State in favorable seasons, in sheltered positions, while in cold seasons, like the present, there is scarcely a variety which will fully ripen, unless in some city enclosure, where protection is afforded by brick walls, and therefore can hardly be called open culture, which leads to the inquiry—to what extent can grapes be cultivated with profit in this State? If, in good seasons the leading kinds of hardy grapes can be ripened only in favorable positions, while in other seasons they cannot be ripened at all, it would seem that they cannot be expected to be grown as a leading article, so far north and east as Maine. Still, when it is considered that almost every owner of buildings and land, has some *sunny side*

—some sheltered position by building, fence, ledge, or belt of trees, where the vine would grow well, and to calculate what an amount would be added to the products of the State, could each person having such a place be induced to plant a grape vine, it would seem that too much cannot be done to encourage their growth. When fully matured the fruit is really very delicious, and has the advantage of most small fruit, in being so easily kept for winter use; and when it fails to ripen, it will be found to be very valuable for many purposes—for preserving, jelly, &c. As regards different varieties, it is not necessary to say which is *the* best to cultivate. If only one variety is wanted, I should say select according to your place—if in a very warm exposure, either the Isabella, Concord, Hartford Prolific, Diana, Rebecca, Delaware, and some others, will be found worthy of cultivation—and after a few more years of trial, perhaps the question of “which is *the* best variety of hardy grape for open culture,” may be answered more satisfactorily than at present.

Yours Respectfully,

WILLIAM GORE.

Lacking communications from the other members of the committee, either upon the subject of grape culture in general, or with regard to any of the new varieties which have been but recently brought into notice, and sharing in the very general interest which has been awakened throughout the State upon this branch of horticulture, it may not be amiss to add a few observations regarding them. As Mr. Gore very properly remarks, it would be quite premature now to decide as to which one is *the best* for culture in Maine, yet we have abundant evidence that some of newer sorts possess decided advantages over those hitherto cultivated in Maine.

The Isabella is the grape best known and longest cultivated in the State; and while, in favorable seasons and locations, it approaches so near maturity as to be very desirable, and especially considering its great vigor and productiveness, it cannot be deemed reliable for a crop of *ripe* fruit.

Among those ripening earlier may be named the Northern Muscadine, brought to notice by the Shakers of New Lebanon, N. Y., which is as good as any of *its class*, being a native fox grape, and partaking strongly of the foxy flavor and odor peculiar to all of its class—the bunch small, the berries large, with a tough, sweet pulp,



and liable to drop from the vines as they ripen. To those who like the native flavor strongly developed, it is a desirable sort, and also for making jellies, &c.

The Diana, a seedling of the Catawba, which originated in Massachusetts, proves a week or ten days earlier than the Isabella, and a most delicious variety,—bunch and berry of medium size—is nearly or quite free from pulp, and possessed of a delicate aroma and rich flavor. It will not show all its good qualities without such careful and rich culture as all kinds need, but do not often receive with us.



*Diana.*

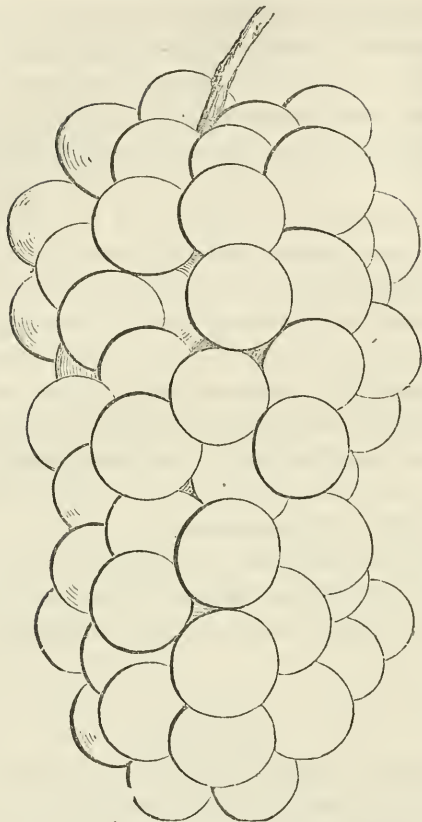
With regard to the Concord, which has attracted considerable attention, the experience of growers is not uniform—with some it ripens scarcely any earlier than the Isabella. Such has been my own experience, while with others it proves earlier, and is deemed a very desirable kind.

The Clinton is a small, early grape, of the easiest culture, harsh to the taste when first colored, but improves by hanging, and late in the season is by many preferred to the Isabella, for its high flavor.

The Hartford Prolific has ripened here for several years, and is a good second-rate sort as to quality—the vine vigorous and productive to a fault, requiring a good deal of thinning out of fruit to have it in perfection. Bunches large, flavor rich and vinous, rather than sweet, and with perceptible native aroma—is likely to prove a profitable variety to grow for market, and a favorite with all who bestow but ordinary treatment, i. e., neglect, as then it bears well, and is better than Isabella, from being surer to ripen.

Among those still newer, and less proved, having ripened fruit here for the first time the past season, and that on vines only two or three years planted, may be named the Delaware, a seedling from Ohio, which, judging from what it proves where better known, seems likely to take a higher rank than any above mentioned, not excepting the Diana. The vine a moderate grower at first, vigorous when established, hardy, productive and early. The fruit small, both in bunch and berry, but in quality equal to the grapes of Europe. The farther developments of experience with regard to it will be looked for with much interest.

The Rebecca is a seedling which originated in Hudson, N. Y., and is in quality equal to the Delaware, and with this, may not improbably inaugurate a new era in the culture of grapes in the open air in the United States. Hitherto we have had no out-door grapes which could compete in quality with foreign varieties, and these, as is well known, can nowhere here be grown to perfection, except under glass, on account of their liability to mildew in this climate. The bunch and berry of the Rebecca are of medium size—fruit nearly white, with an amber tint in the sun, free from pulp, flesh firm and sweet, and of rich and delicious flavor.



*Rebecca.*

When at Hudson some years since to examine the original vine of Rebecca while in fruit, another variety was spoken of as somewhat resembling the Isabella in quality, but several weeks earlier. Endeavoring to see this and test its quality, the fruit was found to be all ripe and gone—this was on the 12th of September—and when the Diana and Rebecca were in perfection, and the Isabella coloring, but not ripe. It has since been introduced to public notice as the “Early Hudson,” and with many others of reputed merit for quality and earliness, may ripen fruit here another season.

The Strawberry, Sage, Lowell Globe, Charter Oak, Fitchburg, Amber, Limington White, and some other native sorts, are considered proved sufficiently to warrant their being discarded entirely,

except for yielding a grateful shade when trained on arbors, or fruit for cooking purposes. The White Sweetwater, Black Chester, and some few other foreign varieties, although they are less subject to mildew in Maine than in most other States of the Union, and may be wintered with safety if well protected, are not deemed worthy of cultivation.

Besides the reasons given by Mr. Gore for the culture of the grape, may be named another, which will be felt to be of great force, after winters so disastrous in their effects upon fruit trees in general as the two last past, viz., the ease with which vines may be protected. To take down a vine from the wall, stake or trellis on which it is trained, and cover with evergreen boughs, is the work of a few minutes, and thus, at almost no cost, are insured from the effects of any severity, or of any changes. Even those deemed the hardiest, and which are never killed by the winters, will start stronger and ripen fruit earlier for a little protection.

The following communication, from another member of the committee, and a distinguished pomologist in the eastern part of the State, comes to hand while the above was in type, and is barely in season for insertion :

#### “GRAPES.

The cultivation of this most desirable fruit, has thus far been limited, in by far the greater portion of our State.

From present appearances, we are about entering on a new era in open air grape culture.

Pomologists have long been searching for new and hardy native varieties, which are sure to ripen in open culture in Maine, and also of first-rate flavor.

Success has at length apparently crowned these efforts, and varieties of native grapes have been found rivaling even some of the valuable foreign varieties which are cultivated only under glass, and some of which require artificial heat to ripen them.

The Isabella and Catawba have long been considered as standard varieties for open culture, more especially in the Southern, Middle, and some of the Western States; but these varieties are too late in ripening for Maine.

This, however, is now not considered so much of a misfortune as

it otherwise would be, had not *other* more valuable varieties been found to rival them in flavor, early ripening, and other valuable properties.

In Bangor, Augusta, Saco and Portland, and their immediate vicinities, success has attended the culture of the *Diana*, *Concord*, *Hartford Prolific* and *Northern Muscadine*, the last being a favorite variety of the Shakers. All these are eclipsed in flavor by the introduction of two new varieties, the *Delaware* and the *Rebecca*. These two already noted varieties give promise of carrying success wherever they are introduced into our State.

The Delaware is nearly or quite three weeks earlier in ripening than the Isabella, and about five weeks earlier than the Catawba. It is also very hardy, having stood unprotected when the cold was twenty-seven degrees below zero, uninjured, and where the Isabella and Catawba were killed to the ground, standing close to the Delaware. Nearly the same good qualities are also given to the Rebecca as to the Delaware. Should the two last named varieties prove as valuable in Maine as they give promise, they will be planted very extensively through the States of New England, and doubtless vineyards will be planted of them; and it would not be surprising if they become as popular in Maine as the Baldwin apple, and the Bartlett pear are in Massachusetts and New York. If suitable varieties be planted, it is probably a fact that no fruit is more reliable for a good crop than the grape, when the vines are well fed, pruned, and protected by a covering of boughs in the winter. In proof of this, several vines in Bangor and vicinity, and probably in other parts of Maine, annually pay, by actual sales of the fruit, from ten to fifteen dollars each vine; yet these vines were old varieties, the fruit of which does not bring the highest price. The grape vine, running on the building, the wall, fence or trellis, is highly ornamental, and the fruit desirable and the most wholesome in the catalogue of fruits."

HENRY LITTLE.

BANGOR, December, 1857.



REPORT ON CONCENTRATED AND SPECIFIC  
MANURES.

The committee to whom was referred the matter of "concentrated and specific manures," by the last Board of Agriculture, would beg leave to report, that they have attended to that duty, according to the best of their ability and the time and opportunity afforded them, and submit the following as the result of their investigations :

It is believed by the committee, that such manures have been used to but a very limited extent in this State. Guano, poudrette and superphosphate of lime are believed to be almost the only kinds of this class of manures that have been used by our farmers. Concerning these, there does not seem to have been any very carefully conducted experiments with reference to securing definite and specific information as to their economical value. With some men, all these fertilizers have produced satisfactory results, while with others they are reported to have proved a total failure. The causes of their diverse and contradictory results, are unknown to the committee; but they regard it as a matter worthy of the special consideration of the Board, and of sufficient importance to demand a special commissioner for its investigation, at the expense of the State, if the Secretary of the Board does not feel that his time and the claims of other duties will allow of his attending to that work in person. Why are results so contradictory obtained? is a question that ought to be speedily answered, if possible; for, as the matter now stand, no man can judge beforehand whether it is prudent for him to procure such fertilizers to supply the deficiency in his manures or not. We need to know whether the trouble is in the articles themselves, the condition of the soil, or the mode of application.

Beside, we need to have those who use these fertilizers and are satisfied that they attain good results, make experiments which will afford definite information as to the *produce* on the capital thus invested. We need to know whether the results attained show that a *profit* can be made on capital so invested. If it will not afford a fair profit, economy most assuredly dictates, that their use should at once be discontinued and some other modes of fertilization be sought out. We hope, therefore, that every man who may hereafter use these articles, will keep accurate accounts, so as to be able to

do more than make the general statement, that he has secured favorable results—tell the State what is the result in definite numbers, so that every body can see whether it is a safe and profitable operation or not.

The two following statements are all that has been received, throwing light on this subject. The first is from Calvin Chamberlain of Foxcroft, and as will be seen, is a mere general statement of results, and his judgment on the same :

“ For myself, I have this season used no manures except such as have been produced on my own premises. My new barn cellar, in which my hogs are kept, poultry house, &c., have all been drawn on, I trust to pretty good advantage.

For the three years before, I have bought and used considerable of Mapes' Imp. Superphosphate of Lime, and I think to greater advantage than I could have taken stable manure at this village, at the prices farmers were paying. But I have arrived at no conclusions that are admissible in a report, because not brought to a mathematical demonstration.

In the use of this phosphate, by the application of a hundred pounds to an acre of grass in April, I have raised the crop of hay from one to fully two tons. By applying it to a part of a field of potatoes, putting it in the hill at the rate of two hundred weight per acre, the potatoes were much benefited; and the succeeding crop of oats was doubled in straw and grain by the application.

My 'conclusion' is, that the concentrated fertilizer above named has 'efficacy,'—that it can be used even at this distance from navigation with 'utility,' and that no one thing in connection with my business is more fully proved to my mind and settled as a 'fact.' I have had no experience with the other fertilizers to be had in the market.”

Yours, truly,

CALVIN CHAMBERLAIN.

The writer of the following statement is one of two minor sons of the late William G. Clark, Esq., of Sangerville. Their statement coincides entirely with the experience of the writer of this report, and he can only regret that he has not more definite statements to make, on account of the loss of his memoranda of weights and measures, in his experiments. Mr. Clark was a very intelligent

and enterprising farmer, and we are glad to know that he has left sons behind him, who are worthy to be his representatives :

“We first made use of concentrated manure in 1855. At that time we procured three bags (480 pounds) of Mapes' Imp. Superphosphate of Lime. This amount we used in making various experiments, viz: First, we used enough to manure half an acre of corn in the hill, using about one gill per hill. Second, we sowed it on grass land. Third, sowed on summer rye. Also used some about our gardening. The land on which we planted the corn had no other dressing. We also took a crop of beans off of it the year before—no dressing then. The corn grew well, and we got a good crop. Under one row we put no phosphate, and from that we got scarcely any corn. On the grass land it did not have any marked effect. On the rye the effect was very visible. The rye on which we sowed phosphate was stouter, the heads much longer and better filled than rye beside it where no phosphate was used. In our garden it had a marked effect on every thing on which we used it.

Thus much for 1855.

For use in 1856, we procured half a ton of phosphate—five hundred pounds of the Nitrogenized, and five hundred pounds of the Imp. Super. We manured with three hundred pounds of each, two acres of corn—using no other dressing—an acre of each kind.

The corn grew as stout as where we spread on twenty loads per acre and then manured in the hill with horse manure well rotted and worked over by hogs. The yield of corn was also as large. The land, intervale pasture, “broken up” the fall before.

About two hundred pounds we sowed on an acre of wheat—it grew *immensely stout*, but the weevil got most of the grain, so we have no “bushels raised” to give. The remainder we used on our roots, (beets, carrots, turnips, &c.)

Our experiments thus far convinced us that we could use the manure to better advantage in raising corn than in any other crop.

In 1857 we planted four acres of corn, and manured in the hill with concentrated manure, as follows, viz: One acre with Poudrette, using four barrels; one acre with Nitrogenized Superphosphate; half acre with Imp. Superphosphate; and half acre with guano.

Where the Poudrette was used, we had corn last year—land well

manured; also, fifteen or twenty loads spread on this year. Corn stout and good.

Where Nitrogenized Phosphate was used, the land was in the same condition. Spread on same amount of manure this year as where Poudrette was used—used three hundred and twenty pounds of Phosphate for the hill. Scarcely any difference between this piece and where Poudrette was used—if any, in favor of Phosphate. The half acre on which we put the Imp. Phosphate was the stoutest piece we had. It was planted on sod turned over last fall—with a good coat of manure—used one hundred and sixty pounds of Phosphate for the hill.

Where we used guano, we got a fair crop, but the corn did not grow so stout as on the other pieces. We used on one and a half acre, three bags.

We think we can use the Phosphate *profitably* in raising corn.

Our land is all a light sandy soil. We harvest nearly, if not quite as many bushels of corn where we manure in hill with Phosphate as where we manure in hill with horse manure, worked over by the hogs."

In conclusion, your committee would recommend, that the Board, at their next session, take measures to secure the further investigation of this matter, and that the Legislature be petitioned to appoint a State Assayer to analyze such articles and substances as may be ordered by the Governor and Council, at the State's expense, for the purpose of exposing frauds in the sale of concentrated manures, or such as claim to be such.

In behalf of the committee.

DARIUS FORBES.

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## REPORT ON TREATMENT AND VALUE OF MUCK.

The Committee to whom was committed the subject of "the value of swamp or bog muck, and the best method of treating and composting the same," having attended to that duty, beg leave to make the following report:

That they have been unable to obtain any such definite information, as will enable them to show by figures, the specific or compar-

ative value of this substance. From their own experience and observation, they have learned enough to know, that there is a very great difference in the value of muck obtained from different localities, and sometimes in that from the same locality. We think we shall say only what will be found to be universally true, that muck formed from the accumulation of leaves and the small limbs from hard wood timber, is much more valuable than that formed from the lichens, mosses, and small shrubs, and the roots and stalks of swamp grasses and weeds. Such muck is usually much less perfectly decomposed, and abounds much more in deleterious acids, than the former. We have seen instances where muck composed of the roots and stalks of such grasses and weeds, mingled with the leaves of the resinous woods, such as the pine and hemlock, have been so surcharged with acids, that it was perfectly fatal to vegetable life. There is a deposit of muck in the town of West Bridgewater, Mass., that is so deadly that a shovel full of it thrown on grass land will kill every root of grass, and it takes from two to three years before the rains, frosts and snows, and atmospheric influences can dissipate the deadly salts, and restore the place to its previous fertility.

In all deposits of muck, that near the surface is less valuable than that below, but there is more difference between these parts, in that formed from weeds and grasses growing on the surface, and having a peaty character, than where it is composed mainly of the decaying deposits from a hard wood growth. Indeed, the surface of the first, as it comes from its bed, is entirely worthless as manure. It is only by heaping it up, and allowing it to decay, that it can be rendered of any manurial value.

The manurial value of muck can be determined with a tolerable degree of accuracy by the eye, in most cases. When it is of a very dark color, approaching a black, of a fine texture, and when partially dry of a pasty character, and when well dried, and cut with a sharp knife, a smooth, shining surface is formed, it may almost always be written down as of the very first quality. Indeed, it is always so unless as is sometimes the case, some destructive acid salts have been formed out of some of the materials of which it is composed, in the process of decomposition, or deposited there from the water that has overflowed it. But muck that is of a light brown color, and of coarse texture, is of little value as manure, if not



absolutely injurious, until it has been worked over and decomposed. The only sure way of determining the manurial value of muck, as it lays "in place," as the geologist would say, is to apply it to different crops fresh from its deposit, or to obtain an analysis of it, and thereby obtain a knowledge of its constituents. This last resort for information, it seems to us, is one that should always be had when practicable, as it will reveal more accurately how it may be most advantageously and effectually prepared for the most economical use, and to render it, at the least cost, the most effectual. Analysis will at once reveal what may require a long series of carefully conducted experiments to discover, if ever discovered at all, in this way.

But diverse as may be the specific, or the comparative values of different deposits of muck, all of them, we believe, may be made of economical value, as a source of fertilization for our farms. Every deposit has some value. All of it is formed from vegetable matters, in which there is usually mingled more or less animal matters. And when we say every thing of animal or vegetable origin is of value as a fertilizer, we simply utter a mere truism. All such matters are of organic origin, and all the remains of organisms that have fallen to decay, are materials from which other and fresh organisms are built up. In other words, they are food for living organisms, and can hardly be applied amiss. Throughout the vegetable world, death is the spring-tide of life and vigor—the source of reproduction and growth.

The value of decayed remains, however, no matter whether animal or vegetable, must depend in some measure on the treatment they receive. Some of these, as they are usually found, may be of little or no manurial value, while with suitable treatment, they may become of the very highest economical value. Indeed, it is probable there is no quality of such remains to be found which may not be greatly improved by proper treatment. This we deem emphatically true of the organic remains found in our swamps and bogs. And it is a very important, as well as interesting, inquiry, to ascertain the best method of preparing the contents of these places so as to secure the best results from their application to the soil.

It is a matter of regret to this committee, that they have not more specific data from which to make up a judgment as to the

comparative economical advantages, when all things are taken into the account, of the different methods of treating swamp and bog muck. In the absence of these, they can only state what are their impressions from their own experience and observation.

In the decomposition of all vegetable matters, acids are always generated in the mass, except when in the presence of alkaline substances. It is so with swamp and bog muck. More or less acids are always found in them which are detrimental to vegetation. The first thing to secure in the preparation of muck for manure is the removal of these acids. This can be done in two ways—by mixing an alkali with the mass, or by exposing it to the action of the sun, the rains and the frosts. The first is speedily accomplished; the other will require a comparatively long time—two or more years, according to its more or less perfect exposure to the action of these agencies, and the amount of acid to be neutralized. Both our experience and observation lead us to prefer the first, as the most effectual and economical, as well as expeditious method, though both may be combined with advantage, to a certain extent. In the use of an alkali, and especially lime and wood ashes, certain very valuable elements of fertility are added to the mass, as well as important chemical changes and combinations secured.

We are very decidedly of the opinion that the very best method of preparing muck for use is to mix lime slaked with salt water with the mass, in sufficient quantities not only to neutralize the acids, but to hasten the decomposition of any partially decomposed particles that may be mixed with it. This is especially important when the muck is of a peaty character, or abounds in the roots of grasses and weeds. We have never found anything so effectual in accomplishing these two purposes as this preparation, which is made by dissolving a bushel of salt in water sufficient to slake a cask of lime. After being mixed well together, the muck should be allowed to lie in a heap for three or four months or more, when it will be fit for use, in any way that may be desired.

We believe, however, that the best and highest results in the use of muck, can be obtained only by being composted with stable manure, after being prepared as above indicated. Its effect is not only to add certain very important elements to the stable manure, but if in a green or unfermented state, to absorb and retain the

gaseous formations evolved by the process of decomposition. In this way, the value of both is increased, so that the mass, bulk for bulk, is really worth more as manure, and will be more effectual in its operations, than the stable manure alone. This has been demonstrated by repeated experiments, so that it is now to be recorded among the most reliable facts of agriculture. This is most emphatically the case as an application to potatoes and Indian corn. Experience has shown that such a compost is immensely more effective on these crops, than any other preparation of stable manure alone that has ever been found. And when its composition is carefully considered, it is not difficult to see why it is so. Its very composition would lead any intelligent agriculturist to expect such a result.

When prepared as above indicated, muck may be spread over the barn-yard, thrown into the pig-sty and the privy, and under the sink-spout, with great advantage, to absorb and retain the volatile evolutions of these places. Indeed, it is better that these places should be supplied with muck without any preparation, than not to have anything. In an entirely raw state it will be of some service, though very far from the highest. In fact, we believe it is better that it should be applied to highlands, which are usually deficient in organic matter, raw from its bed, than to withhold it altogether. It will not produce much immediate effect, unless of a very superior quality, when thus applied, but ultimately it will produce very marked results, as we have seen for ourselves, especially on the grass crop. One member of this committee made an application of this sort to a piece of land to which no stable manure had ever been applied, some six years ago, and the effect is plainly visible to this time, though the amount applied would have been a very light dressing had it been the best quality of stable manure.

In the light of these facts, the committee think they are justified in saying that muck can hardly be applied to our soils amiss, and in urging farmers everywhere to put whatever deposits of muck they may have, under the highest contributions, to add to the manure heap, in particular. We deem that the farmer who has an ample deposit of muck, has a mine of wealth that will prove more productive under proper management, than any of the diggings of California or Australia.

DARIUS FORBES, *Chairman.*

STATISTICS.—As the law constituting the Board of Agriculture makes it a part of the duty of the Secretary to gather and incorporate into his report “such statistics as he may be able to collect,” and as, from the nature of the case, no one man, unaided, can possibly perform more than a small portion of the labor required to obtain accurate and reliable agricultural statistics, and as the Board, at its last session, unsuccessfully urged upon the Legislature the adoption of some system which might accomplish this purpose, a few remarks upon the general subject of statistics may not be out of place.

It is said, that as a people we are far behind the nations of Europe in appreciating the use and value of statistics. All readily admit, as an abstract truth, that we are dependent upon a knowledge of facts both for present instruction and for guidance in future action, but while professedly acknowledging the importance of inductive science we fail to carry out our professions into national practice. As individuals, in our private affairs we do better. No prudent man enters upon any undertaking of magnitude without first demanding a knowledge of all the facts which can be obtained having a bearing on the case, nor does he fail to keep himself thoroughly “posted up” regarding all which transpire during its prosecution. Few would not hesitate in extending a loan to a person of great reputed wealth, when upon inquiry it was found that he himself could only *guess* at the amount of his property, and where and how it was invested, or whether his investments were safe, productive and convertible. What possible evidence can be produced to show that enlightened legislation in behalf of a State is less dependent upon a full knowledge of facts as a satisfactory basis, than private action?

What has this to do with agriculture? Just what a supply of bread has to do with living. No question comes more closely home to the legislator or to the private citizen than that of subsistence. If, as Mr. Everett said in his late address before the New York State Agricultural Society, “our existence as individuals or communities must be kept up by a daily supply of food, directly or indirectly furnished by agriculture, and if this supply should wholly fail for ten days, all this multitudinous, striving, ambitious humanity, these nations and kindred, and tribes of men would perish from the face of the earth by the most ghastly form of dissolution,” then it follows that whatever affects the amount, yes, or the cost or

market price of agricultural produce is really a thing of no mean magnitude.

Agricultural statistics are but a computation of the bread and butter, meat, wool, &c., which our fields and animals yield—their cost, their price, demand, supply, and whatever else concerns them.

The merchant often takes an account of stock; the prudent house-holder, before setting of winter, examines his bins and barrels and woodpile; the farmer looks sharp to see if he can winter all his cattle well; the shipmaster, before weighing anchor on a year's voyage, scrutinizes closely the quantity and condition of his stores, and what other than such like would the State do in collecting agricultural statistics?

It may be said, and with truth, that it is no easy matter to obtain full and accurate statistics on any points, but if we may not obtain complete accuracy we may gradually improve, and approximations to truth are of great value compared with mere guess-work. It is also doubtless true that some minds associate the idea of taxation as closely or necessarily connected with such inquiries, and if they be first made by assessors, many might naturally fall into this error, and so be led to understate facts—to avoid which, might it not be begun at least by district school teachers, whose daily occupation it is to impart knowledge, and a few whose leisure winter evenings might thus serve to gather some for the benefit of a larger school. The full benefits to be obtained by means of statistics are developed very gradually. It is not by one, nor by a few, but by long continued periodical observations alone that data are to be had from which may be deduced all the conclusions which they are capable of yielding.

As a first step, we should endeavor to comprehend their value and use. If such be even yet the case, in some degree, abroad, much more is it needful here. A late English writer\* says: "To arrive at a correct appreciation of the subject, we must first be convinced of its importance and of its expediency, then distinctly apprehend what is required, and lastly by what means it may be attained. On

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\* L. Levi, in a paper read before the London Society of Arts, urging the necessity of obtaining full statistics at harvest time, and to be completed immediately, for present as well as future use.



the importance and expediency of collecting statistics of agricultural produce, it might seem hardly necessary to enlarge, but the claims of statistical science in this direction have not hitherto been universally recognized. It is a melancholy truth, that, as yet, few believe in statistics. The philosophy of inductive science is with large numbers a mysterious problem. Everybody admits that if in repeated instances over a long space of time, a certain event has happened at certain periods, there is good ground for believing that the same will continue to happen; but a preconceived skepticism in numbers prevents them applying common reason to great but every day occurrences. They have not the power of magnifying figures and of preserving the same faith in them. Besides, other considerations foreign to the purpose, as well as self-interest, political tendencies, or dread of revelations, enter the mind and are sufficient to make them decided enemies to statistical inquiries. The masses, therefore, must be taught the meaning of statistics, their object and province. Statistics is the science of observation. It takes actual facts and studies them in their nature and effects. It is founded rather on experience than on theory. A chemical discovery is made. It is applied to the cultivation of the soil. The statistics of produce of that soil before and after the application of such chemical discovery is the surest test of its worth. Within the domain of statistics is whatever is important to the interest of a State, whether it be institutions, physical forces, education, science, crime, or religion. Its province is to elaborate truths which lie remote from the surface of daily life, and to reduce into statistical analysis, the wants, the resources and the experiences of society at large."

And again: "The collection of agricultural statistics is an essential duty of nations and of individuals—a duty, the performance of which demanding an extensive and permanent machinery, it behooves government to undertake. The difficulties to its performance are more ephemeral than real, and the objections raised against it, are inconsistent with the true interests of the nation collectively and of the individuals composing it respectively. Such inquiry is demanded by the uncertainty to which the people is exposed as to the amount of food it possesses within a certain time, with its ever increasing wants—by the fluctuation which follows in the prices of produce, increasing or reducing its value largely—and by the

necessity of having a timely warning of future wants. Further, that it is a measure both expédient and necessary to the legislators to ascertain and study the wants, the resources and the productive forces of the State whose helm they bear—to the jurist and moralist to ponder over those moral phenomena so powerfully developed by abundance or indigence, by the prevalence or declension of agrarian crimes and offences against persons or property—to the merchant, to appreciate the extent of the field he is to operate, to be prompt, energetic and calculating in his speculation, or to be slow in giving credence to vague fears and apprehensions—and to the farmer himself, to regulate his dealing with his farm and in the market, to learn the productive capabilities of the soil, and to establish the true basis for the adaptation and connection of science with agriculture.”

It seems impossible to doubt that an examination into the character and results of statistical inquiries, will reveal a very great degree of importance as attaching to them, which has thus far been overlooked. Lacking the only reliable basis of action, how can individuals be sure that labor is applied in the best direction, or the State be sure of the most enlightened and correct legislation?

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SUGGESTIONS.—Before concluding this report, (perhaps already too extended,) the opportunity is embraced to offer a few suggestions which it is hoped may serve as a clue to means by which our existing agencies for the elevation and promotion of agriculture may be rendered more efficient; and first, with regard to *the style of offering premiums* by agricultural societies. These are sometimes offered for the largest crop—for the fattest animal, &c., and may consequently be awarded to the competitor presenting such, irrespective of the cost at which the result was obtained, and of any valuable result to the public. Might it not be more for the general good to give the premium to one who grows a fair crop at least expense; say to one who makes sixty bushels of corn, at sixty cents per bushel, rather than to another who makes seventy-five bushels, at eighty cents per bushel? This course has already been adopted by a number of our societies, and they offer at present more in the following manner:

“For the best conducted experiment in growing the largest crop at least cost,” which is a decided improvement; but might not this be improved still more by making it to read, simply, “for the best conducted experiment,” or, “for the most satisfactory experiment?” This would at once shut off premiums from all accidental crops, or other results, (accidental so far as regards any peculiar efforts of the competitor,) and which have been the effect of some cause, or of a combination of causes beyond the control of the competitor, and which he might not secure again by pursuing precisely the same course of operation. The design of the society should not be so much to reward him who has already got ample pay in his success, as to elicit and diffuse what may benefit others by aiding them to obtain like success. If the offer be simply for the best conducted experiment, the premium might be awarded in a case where pecuniary success did not follow the operation, but by means of which, a knowledge of facts was elicited, which may, if properly diffused, save a thousand others from repeating an unsuccessful process, and from the loss which would be incurred by so doing; and also guide to more successful treatment in future. Such a person is a public benefactor, at his own private cost too, and is deemed better worthy of receiving a premium, than one who has stumbled upon success, and makes up his statement, after the result is known, from memory merely, or by guessing at the details of labor, manure, &c., &c.

Another point touches the *objects for which premiums should be offered*. In case the returns from our societies are promptly made, and if time serve me, I hope to be able to present with this report, a tabular statement, which shall exhibit the various objects for which premiums have been awarded, and the amount of each during the present year, (and if not in season for this report, it may go into the “abstract of returns,” which will be published as soon as may be,) which may show considerable diversity in the objects to which premiums are awarded, and probably more in regard to the comparative amounts given to each. While it is true that the varied circumstances of different localities may render some diversity highly suitable and proper, it may be equally true that the comparative amounts offered to each may be amended by offering more in some directions and less in others, than at present; and by an examination of the operations of all, each may obtain suggestive hints. For

instance, more might be offered in some cases for general farm improvements, or for improvements in some special department, as for underdraining, reclaiming swamps, improving pastures, planting orchards, and the like. Such as these, it is true, would make no addition to the attractiveness of the annual exhibition, but the gain to the community might be not less real on this account. The State society has set a good example in this matter, by offering a liberal list of prospective premiums which are to be awarded after several years of efforts. It is gratifying to notice that some of the county societies are pursuing a similar course. One or more of these have during the present year, offered one hundred dollars for best farm improvements, the farms to be visited by the awarding committee several times before the decisions are made. This necessarily involves considerable time and labor on the part of the committee, but so far as may be judged by the working of it, as tried, the expenditure seems to have proved a profitable one, both to the visitors and the visited. Hints and suggestions may be given and received to the mutual profit of all. It is understood that, in some quarters, these offers have excited greater interest and emulation than any other move which has been made for many years. My impression is, that many of our societies at present make no offers of premiums whatever to stimulate such improvements; and much confidence is felt that they might be generally adopted with great promise of good. To be effectual, the amount should correspond, so far as means admit, to the magnitude of the undertaking; and one or two liberal premiums might accomplish more than a greater number of less amount. More applicants might fail to receive the premium, but none might fail to reap a rich reward for their unwonted industry and application.

Then, too, with regard to encouraging accurate and careful *trials and experiments* tending to solve doubts existing in connection with points of every day practice, as the preparation and application of manures, whether animal, vegetable, mineral, marine or mixed—how best to make composts—whether to turn in manure to greater or less depth or to leave it on the surface—the turning under of green crops—different modes of feeding cattle, the value of the usually cultivated roots compared with one another and with English hay, and many others which would readily suggest themselves to

any one when taking the subject into consideration. In all such, satisfactory evidence should be required, that the trial be faithfully and accurately made, and be accompanied with such a detailed statement of the process and results as may convey to others all the benefits to be derived from them. The bare suggestion of such experiments might excite mental activity and inquiry in some who are now content to travel their daily routine of labor in the tracks of their fathers with no idea that any improvement is advisable or practicable, and the attempt to put them into execution must involve such a dealing with weights and measures as we rarely see on farms at present, and prove an efficient aid to the adoption of habits of system and order which of themselves would be a valuable acquisition to any farmer. An experimental State farm has sometimes been suggested as an advisable means of securing progress. Might not a few hundreds of dollars expended in premiums for trials similar to what would be made at such an institution, accomplish more than as many thousands expended upon it, both of direct results and of incidental benefit to those making the trials?\*

Judging from the little experience we have in this matter, it might at first be safe to offer more than we had means to pay. Several years since, one of the county societies proposed to give a liberal premium for the most satisfactory experiment upon a stock of cattle, not less than four in number, in ascertaining the relative value of the different kinds of fodder commonly used, with a statement in detail of the quantity and value of the same, as compared with English hay, the experiment to be made in the three winter months, and the offer was repeated year after year, and never a single applicant appeared for it. Must there not be a sad degree of apathy and great need of some stimulus to exertion where this could occur? During the three winter months, the farmer enjoys more leisure than at any other season. The four head of cattle must needs be fed

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\* While the above is in type, a note is received from the Secretary of the West Oxford Society, in which he says: "Would it not be well for the agricultural societies to offer more premiums for experiments? How would it do for the Board to suggest a series of experiments or investigations, and assign to the different societies such as would be suited to their several localities?" and again: "I think it might be better, in many cases, not to pay out money for premiums, but to substitute agricultural books, implements, fruit trees, &c., &c."



somehow, and the premium offered was equivalent to more than a dollar a day for the extra time required to make a careful experiment by weight and measure, and to write out a detailed statement.

This suggests another point, in relation to which there is abundant room for improvement, viz.: the preparation of statements. The law granting the bounty of the State to agricultural societies very properly requires that applications for premiums be accompanied with suitable statements, and it forbids the payment of any premium where this requisition is not complied with. The object of the statement is twofold: first, to aid in guiding the awarding committee to a correct conclusion, and next, but by no means least, to convey such information as may be of service to the whole farming community, and enable any one, so far as instruction may do it, to obtain similar success. It has been well said, that if agricultural societies content themselves with offering prizes for the finest animals and the heaviest crops, without teaching the way to produce fine animals and heavy crops, they will be acting like a person who shows another a fine bunch of fruit on the top of a wall, without offering a ladder with which he may reach it. It could only be gazed at and wished for. Now, let every farmer, when called upon to make his statement in writing, instead of looking upon it as an arbitrary and vexatious requirement of law, and something to be shirked out of in the easiest way possible, remember that he is enjoying an opportunity to benefit others, and that his statement, if carefully and faithfully made, will constitute a round in this same much needed ladder. The State has also provided that all these be gathered together, and, with the reports of committees and other papers, be forwarded to the Secretary of the Board of Agriculture, by him examined, and an abstract prepared and published for circulation among the farmers. If it be demanded that there be something of value in the volume thus prepared by the Secretary, it must needs be first in the materials from which it is to be made. A full tale of brick cannot justly be exacted if the needful straw be withheld.

Reports of adjudging committees at our annual exhibitions also furnish a most admirable opportunity to impart information and instruction. As there is no occasion for a detailed statement of the process by which a pin-cushion, or other fancy article which may grace our tables on the day of exhibition, was manufactured, so

there is just as little need of writing an essay upon such topics. But with regard to many classes of articles exhibited,—to animals, dairy products, fruits, farm operations, like plowing and others,—which come before awarding committees, it is altogether probable that the members composing them are possessed of some facts which they have acquired by experience, observation or research, and which, if incorporated into their reports as prefatory or concluding remarks, would be the means of diffusing a great deal of valuable knowledge, and would render such documents vastly more useful than simple lists of awards which can have only a local and personal interest. Opportunities may not often occur to make such a statement regarding any individual animal, as would be of great interest to those who could not also examine the animal itself; but the committees, having both the animals and the various statements before them, may and should give the public in their reports all the facts and conclusions which may be derived from the examination and comparison. The simple award of a first premium to Mr. A.'s bull over Mr. B.'s, will enlighten the public very little upon their relative merits or faults, or give any clue to the reasons why or the way in which they may rear an animal like Mr. A.'s or avoid one like Mr. B.'s, nor will it give any information as to the peculiar fitness of one breed over another for the shambles, for labor, for the dairy, or for anything else.

It cannot be reasonably expected that a valuable report can be written in a half hour, filled with the bustle and noise of exhibition day; it must require time and quiet; but as committee men are aware of their appointment beforehand, they may, if they will, occupy some previous leisure in thought, research and examination of the subject, and in writing out general remarks connected with it, and finish up their work subsequently to the show, and such occupation would not only result in valuable contributions to our agricultural literature, but the labor would be abundantly repaid to themselves in a deeper interest and more enlightened and thorough understanding of a subject intimately connected with their profession.

The sessions of the Board of Agriculture are necessarily so short, and only one being provided for during the year, it seems desirable that means be taken, not only to secure the full occupation of the time spent together, in the most profitable manner, but, if possible,

to have something prepared for action, or actually accomplished, during the interim. At the last session, an attempt was made in this direction, and the reports in the preceding pages are the result; and this plan may very probably be continued. Might it not also be of service to invite the presentation of views or suggestions as topics for discussion when the Board meets, both from members, officers of county societies, and from other individuals, to be forwarded to the Secretary early enough prior to each session to enable him to lay the same before the members by means of a circular, a month or more before the session, that they may have the benefit of careful previous consideration of the same, and be prepared to submit matured opinions upon their merits, and to act with a better understanding of the subjects proposed.

Up to the present time, such an effort has been scarcely practicable, as the Secretary has had no means of knowing in advance who were to be members at the coming session; but when the Board next assembles, it will be in this, as well as in some other respects, under more favorable auspices than at any previous meeting. Hitherto the members have been elected every year, and in consequence of this, each year has brought together mostly new members, who have not had the benefit of previous acquaintance with, and consideration of, the plans proposed for the furtherance of the end which all desire to see accomplished, to wit: the promotion and elevation of practical agriculture throughout the State. At the last session of the Legislature, the recommendation of the Board on this point was favorably received and acted upon, and it is now provided that a third only of the members constituting the Board be newly elected each year, and a greater degree of efficiency is confidently anticipated from the change. The amount of benefit which shall result from their deliberations must of course depend on the character of the Board itself; and as its members are elected by the agricultural societies, the responsibility actually rests upon them, and too great care cannot be taken to secure the best talents at their command; and for this purpose, something more than a knowledge of practical, or even of scientific agriculture, is needful.

If the aim of the Board was to grow the best crops, or to feed and treat cattle judiciously, or to do any of the thousand and one other things required upon the farm, in the best possible manner, this

might serve; but its object is quite distinct, being to promote the interests of agriculture in the community; and when the inquiry is made, how this can best be done, at what points in the vast field before them, and by what agencies a given amount of expenditure and of effort will accomplish the greatest results, it is evident, that however valuable is an intimate acquaintance with the theory and practice of farming, it is not the only requisite.

To illustrate this, let us imagine what is similar to, or identical with, what may have occurred heretofore. The Board after assembling and organizing, begins to ask, what can we do? what shall we recommend? This seems at first a question very easy to answer, for a thousand things can be done, or recommended, and every one of them good, perhaps very good. The difficulty lies not in finding something, but in selecting the most feasible—that which shall accomplish the greatest practical results, and results best adapted to our present actual and most pressing needs; and here, minds differently constituted and with previous unlike training, have each their own views. And Mr. A. replies, let us adopt means to advance agricultural science, by employing some competent person to engage in *analytical investigations* and *original research*, and so increase the amount of actual knowledge which shall be at the command of the farmer. Certainly a most desirable object, as all will readily admit; but Mr. B. expresses the opinion that a more urgent and pressing need of our condition as a farming community, is, a thorough and complete diffusion of what knowledge is already attained, but not yet well understood and practiced by the masses; and this view commending itself as judicious and sensible, the next inquiry is, how shall this be attempted? Shall we endow an Agricultural College where some, and comparatively few, shall be thoroughly educated and made to reach the highest practicable attainments, and then go forth and be scattered abroad in the community, settling down to become so many teachers or centres of influence, from each of which, by both precept and example, knowledge shall be radiated to the many? or shall we begin our efforts at the common schools, and there attempt to elevate the many to a more moderate standard of attainment? or shall we have both and secure the benefits of each and of the connection between the two, (they being in some degree mutually dependent and parts of a system,) or is there danger of losing all by attempting too much at once.



It is apparent that here is a field for investigation, which to explore so thoroughly as to arrive at the most enlightened conclusions, will require more time than one short session can give, and qualifications other than familiarity with the art or science of agriculture.

Before this subject is satisfactorily disposed of, Mr. C., who is anxious for immediate practical results, and has bestowed some previous thought upon ways and means, proposes that the State establish an EXPERIMENTAL FARM, where conflicting theories and modes of practice shall be brought to the test of experience, and the truth regarding them made known to all, so that we may no longer grope in the dark or find our way into light only by means of protracted and laborious experiments, too costly for the unaided means of private individuals. To this, Mr. D. responds, by saying that this is, only in another form to be sure, just what they had already decided not to attempt at present, viz: an increase of knowledge, and he may further state, that experience has already shown that such an attempt must be made at a cost disproportionate to probable results, at least among us, for it could at best only settle doubtful points under certain conditions, of soil, climate, &c., &c., and that when the same trials are made under other conditions and upon other farms, that diverse results will follow, and so we might be as much in the dark as ever—at any rate the public would not be satisfied with its tardy and questionable fruits at the price which must be paid for them. Whereupon, Mr. E. introduces his plan, which is, that the State provide a MODEL FARM, where practice shall be daily exhibited which is fully up to the standard of present scientific attainments—where improvements shall be seen, rather than heard of, or read about,—where every farmer may go and learn, and let his boys go and take lessons of unmistakable value. A capital idea, and one which wins the favor of many, and seems likely to be adopted, when Mr. F. intimates that farmers are not much in the habit of going abroad to view improvements or to study, and to be of any practical utility, there should be at least one in each county, and then something worth the while might come of it, but as for having only one, 'twould be like having a college to educate farmers' sons—there would be a hundred who would'nt go, to every one who would—the only way in which one could serve would be to put it upon trucks and make it itinerate from county to county. Now,



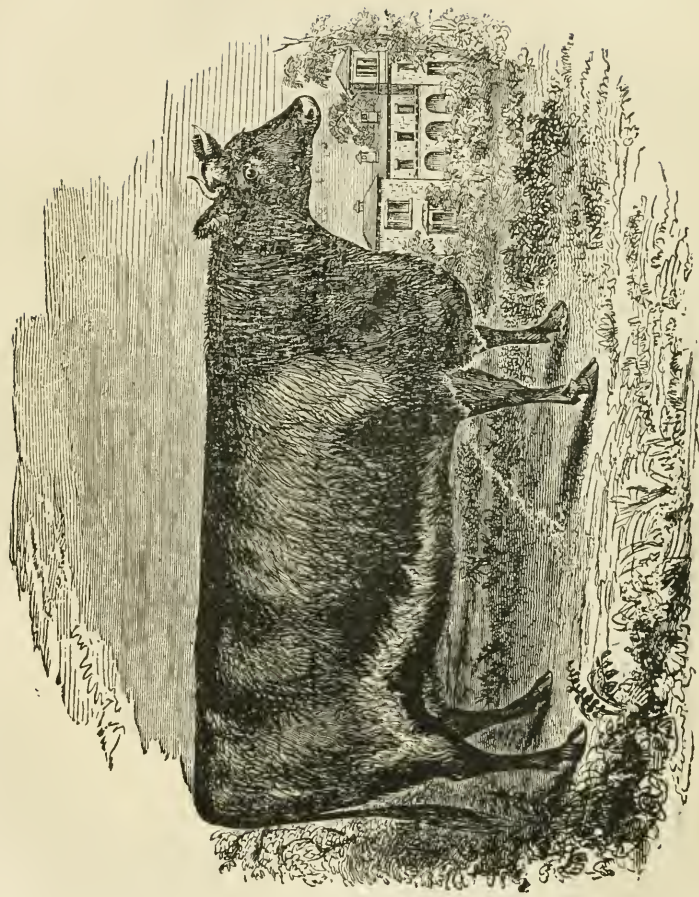
it being none too easy an undertaking to inaugurate one model farm—such as it should be—to get it into successful operation and to keep it so, the idea of a dozen or more operates much like a mill stone around its neck.

In this dilemma, Mr. G., who thinks he sees a way out of the woods, suggests that, inasmuch as various doubts attach to all untried plans, and we have now in successful operation certain agencies, which everybody admits have done and are doing much good, to wit: our agricultural societies, that we would do well to urge increased legislative assistance to these; enough, at least, to make the amount equal to what is granted similar societies in neighboring States, and the Provinces on either side of us.

But Mr. H., while he would by no means underrate the good which societies have effected, is clearly of opinion, that as they have been jogging along at about the same pace for 10, 20, 30 years, in precisely the same old ruts—have struck out no new paths, and might not with increased aid, and have abundant scope for improvement within their own proper province, and thinks we certainly should attempt an advance, would have it in some different direction; perhaps legislative grants could be more usefully employed in offering a few liberal premiums for careful trials, such as are proposed to be made on an experimental farm, or for the invention of labor-saving machinery, and improved implements of husbandry. This meets the views of Messrs. I., J., K. and L., who, however, each have some favorite object or plan; one would prefer to have it expended in the purchase of books for farmers' clubs; another would buy costly, thorough-bred animals for breeding, to be afterwards sold at auction, one, two, or half a dozen in each county, on condition of their being used in, and not sold out of the State or county, and so on.

The idea last thrown out meets a favorable response in the mind of some one who thinks the main chance may be best promoted by improving the breeds of domestic animals; but not deeming the above plan of accomplishing the object the best possible one, suggests an amendment, namely, that we recommend the establishment by the State of a STOCK FARM, where the very choicest specimens of the various breeds shall be bred and reared, and their comparative merits for various uses observed and proved, and at proper intervals





**SHORT HORN COW "JACINTHA."**

Imported in 1853, by L. G. Morris and N. J. Becar. For pedigree, see volume 10th, page 406, of the English Herd Book. She is now the property of S. P. Chapman, "Mount Pleasant Farm," Clockville, Madison Co., N. Y.

let the animals grown upon it be distributed, by lot or otherwise to the societies, or be sold at auction on suitable conditions, and he urges with much force, that although it might involve a larger outlay at first, that it would be more economical in the end, to say nothing of its being more uniform, beneficial and permanent in its results than could be any spasmodic or temporary efforts in the same direction.

The farm, too, might be, so far as circumstances would allow, a pattern farm and a field for experiments, or if not so at first, it might, if found successful as a stock farm, be expanded by gradual and healthy development, until the institution assume the form and style which future experience may dictate as best suited to our necessities, whether a stock farm alone, or a model farm in connection with it, or a farm school, or something else. What objections Messrs. O., P., Q., or their associates, might urge to this, I cannot say; for none of any magnitude occur to me at this moment, and it strikes me as combining more promise of successful issue with fewer disadvantages than any other, and I have never known the proposition brought up just in this form; but as a plan substantially similar in many of its features was recommended by the Board in 1853, and did not go into operation, it undoubtedly then got the cold shoulder somewhere, although taking into account the great increase of interest felt throughout the State in agricultural progress, it is very possible that some such plan might now receive more favorable consideration, and be carried into execution; for there seems to be no doubt that a wide spread and deeply seated conviction exists, that some decided move should be not only attempted, but something of importance accomplished. The progress made in years past is, in a good degree, traceable to judicious and liberal legislative action, and warrants the hope that the present increasing rapidity of advance may suffer no diminution for lack of its continuance.

Let me here repeat a suggestion made in the last report, regarding the importance and value of town and neighborhood associations of farmers for mutual improvement, by the discussion of matters pertaining to their common interests. Should one or more of these be formed in every town in the State, with a determination to hold weekly meetings during the winter, whether there be many or few at the start, they will be sure to grow in numbers and in interest;

topics for discussion will multiply beyond all previous anticipation, mental activity and emulation to advance in knowledge and practice will be excited and maintained, and progress, such as has never yet been witnessed in our state, will flow therefrom. We at least know of a certainty that such advance has resulted where these have been established, and there is no reason to anticipate that less success may attend future efforts. Legislative assistance has done much to aid the interests of agriculture among us, and it may do a great deal more; but nothing, which any Legislature can do, would equal what must result from a thorough appreciation by every farmer of the true position which he occupies as a member of the community, of the respect to which himself and his calling are entitled, of the progress in the art and science of farming which he needs to attain, with a resolute determination to do what he can to accomplish it.

S. L. GOODALE,

*Secretary of the Board of Agriculture.*

JANUARY 6th, 1858.

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ERRATUM.

Page 186, 2d line from top, for Black Chester read Black Cluster.



## APPENDIX.

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THIS being a first attempt to present in tabular form a statement of the financial condition and operations of the Agricultural Societies of Maine, it is very possible that it may prove inaccurate, as it is known to be, or incomplete, in some particulars. The several Secretaries are particularly requested to examine it carefully, and to inform me of all errors and omissions, *as early as possible*, that it may be corrected in season for insertion in the "Abstract of Returns," which is to go to press in February.

COMPILED FROM RETURNS OF AGRICULTURAL SOCIETIES, FOR THE YEAR ENDING FIRST WEDNESDAY IN  
DECEMBER, 1857.

FINANCES.

Societies.	Am't received from the State during the year.	Am't received from Members and Donations.	Am't received from all other sources.	Whole amount of receipts for the year.	Amount of premiums and gratuities offered.	Amount of premiums, &c., awarded.	Current expenses of the Society for the year.	Whole amt of disbursements for the year.	Value of Real Estate belonging to the Society.	Value of other property belonging to the Society.	Amount of the Liabilities of the Society.
Maine State Society,	1,000 00	526 00	6,912 10	8,439 10	5,225 00	2,755 25	5,283 26	9,836 76	-	1,000 00	300 00
Androseggin County,	300 00	175 00	1,145 80	1,620 80	637 50	455 50	496 00	1,575 92	8,200 00	-	6,500 00
Cumberland, . . .	120 17	140 00	297 81	557 98	393 50	301 75	431 33	733 08	-	1,019 70	-
East Somerset, . . .	150 00	-	153 64	303 64	161 71	174 14	127 23	301 37	-	-	-
Franklin County, . . .	200 00	112 00	76 01	388 01	340 00	-	132 00	-	-	-	-
Kennebec County, . . .	150 00	34 00	500 00	684 00	358 20	398 20	395 20	756 40	-	400 00	409 40
Lincoln County, . . .	300 00	204 00	197 00	701 00	401 25	386 27	272 93	659 20	-	150 00	-
North Aroostook, . . .	300 00	255 00	45 00	600 00	308 00	243 37	19 50	262 87	-	-	-
North Franklin, . . .	200 00	8 00	132 31	342 31	425 42	297 19	66 79	308 06	-	-	-
North Kennebec, . . .	150 00	256 00	331 90	737 90	454 75	270 00	175 00	-	2,500 00	100 00	1,600 00

North Penobscot, . . .	51 00	22 00	45 42	118 42	200 25	77 75	-	-	-	-	-	-
North Somerset, . . .	150 00	19 00	131 00	300 00	248 55	225 56	74 44	300 00	-	-	-	-
Oxford County, . . .	200 00	130 00	672 29	1,002 29	641 50	503 85	534 52	552 52	1,000 00	150 00	813 35	-
Penob. & Aroostook Union,	96 00	-	50 00	146 00	150 00	133 75	27 00	160 75	-	-	-	-
Piscataquis County, . .	300 00	-	110 74	410 74	294 02	134 36	99 74	-	-	-	-	-
Sagadahoc County, . . .	300 00	-	844 94	1,144 94	1,333 25	585 00	528 74	1,273 63	100 00	3,400 00	2,560 37	-
Somerset Central, . . .	-	1,122 00	204 00	1,326 00	811 92	388 25	1,320 00	1,708 00	1,200 00	50 00	650 00	-
South Kennebec, . . .	150 00	213 00	1,339 54	1,702 54	1,019 75	588 39	950 00	1,538 39	-	-	-	-
Waldo County, . . .	276 50	174 50	101 85	552 85	491 00	409 75	175 52	587 44	-	-	-	-
Washington County, . .	300 00	23 00	438 28	761 28	537 00	371 75	366 77	690 77	-	-	-	-
West Oxford, . . .	200 00	13 00	75 60	288 60	231 75	184 25	70 00	254 25	-	360 00	-	-
West Penobscot, . . .	150 00	12 00	175 00	337 00	320 00	221 69	19 04	240 72	-	-	-	-
West Somerset, . . .	150 00	13 00	105 88	268 88	171 00	158 40	76 03	246 84	-	-	168 40	-
York County, . . .	300 00	141 00	258 63	699 63	550 00	378 93	209 29	-	-	500 00	714 29	-
Totals, . . .	5,493 67	3,592 50	14344 74	23430 91	15705 32	9,943 34						

## ANALYSIS OF PREMIUMS AND GRATUITIES AWARDED.

For Farms, &amp;c.

Societies.	Am't awarded for management of farms.	For experiments in draining.	Experiments in subsoil plowing.	For plowing at the Exhibition.	For reclaiming meadow lands.	For manures, and experiments with them.	For orchards of all kinds.	For other farm improvements.	Total amount offered for farm improvements.	Total amount awarded for farm improvements.
Maine State Society,	.	.	.	95 00	.	.	.	.	930 00	.
Androscoggin County,	.	.	.	6 00	.	.	.	.	.	.
Cumberland County,	.	.	.	9 00	.	.	.	.	100 00	.
East Somerset,	.	.	.	.	.	.	.	.	.	.
Franklin County,	.	.	.	.	.	.	.	1 50	.	.
Kennebec County,	.	.	.	5 00	.	7 00	.	.	12 00	12 00
Lincoln County,	.	.	.	12 00	.	.	.	.	.	.
North Arcostook,	.	.	.	12 00	.	.	.	.	.	.
North Franklin,	.	.	.	.	.	.	.	.	10 75	5 25
North Kennebec,	.	.	.	12 00	.	3 00	.	.	.	.

North Penobscot, . . . . .	-	-	-	-	-	-	-	-	-	9 00	-
North Somerset, . . . . .	-	-	-	-	-	-	-	-	-	-	-
Oxford County, . . . . .	-	-	12 00	-	-	-	-	-	-	80 00	-
Penobscot and Aroostook Union, . . . . .	-	-	-	-	-	-	-	-	-	-	-
Piscataquis County, . . . . .	-	-	-	-	-	-	-	-	-	-	-
Sagadahoc County, . . . . .	-	8 00	15 00	-	5 00	-	-	-	-	155 00	28 00
Somerset Central, . . . . .	-	-	-	-	-	-	-	-	-	100 00	-
South Kennebec, . . . . .	-	-	12 00	-	-	-	-	-	-	-	-
Waldo County, . . . . .	24 00	-	-	-	-	-	-	-	-	36 00	24 00
Washington County, . . . . .	6 00	-	12 00	-	-	-	-	5 00	-	22 00	11 00
West Oxford, . . . . .	-	-	12 00	-	-	-	-	-	-	-	-
West Penobscot, . . . . .	-	-	-	-	-	-	-	-	-	-	-
West Somerset, . . . . .	-	-	-	-	-	-	-	-	-	-	-
York County, . . . . .	-	-	25 00	-	-	-	-	-	-	31 00	-
Totals, . . . . .	30 00	8 00	239 00	15 00	6 50	1,485 75	80 25				



## ANALYSIS OF PREMIUMS AND GRATUITIES AWARDED, (Continued.)

## FOR FARM STOCK.

Societies.	Amt awarded for Bulls.	Amt awarded for Working Oxen.	Amt awarded for Milch Cows.	Amt awarded for Heifers and Calves.	Amt awarded for Fat Cattle.	Amt awarded for Horses.	Amt awarded for Swine.	Amt awarded for Sheep.	Amt awarded for Poultry.	Amt awarded for all other Live Stock.	Total amount offered for Live Stock.	Total amount awarded for Live Stock.
Maine State Society,	89 00	16 00	238 00	93 00	18 00	1,117 00	29 00	40 00	15 00	74 00	2,032 00	1,729 00
Androscoggin County,	36 50	6 00	26 00	31 50	3 00	44 00	7 50	5 50	4 00	-	474 75	252 50
Cumberland County,	7 00	38 00	21 00	14 00	7 00	36 00	16 00	13 00	-	12 00	188 00	163 50
East Somerset,	8 50	13 50	5 50	20 75	-	26 75	3 25	4 50	-	4 00	90 00	86 75
Franklin County,	10 75	14 00	8 00	5 75	3 50	-	-	8 25	-	79 75	190 00	140 00
Kennebec County,	30 50	80 00	23 50	22 00	5 00	71 50	9 50	7 00	-	-	249 00	249 00
Lincoln County,	17 00	6 00	18 00	9 00	7 00	47 00	6 75	13 50	5 75	23 00	191 00	151 00
North Aroostook,	14 00	30 75	6 00	22 50	-	30 50	9 00	16 00	-	7 50	155 00	137 25
North Franklin,	7 35	9 00	3 75	3 85	-	19 75	3 50	23 00	2 00	75 15	180 00	148 25
North Kennebec,	8 00	38 50	23 00	10 00	4 50	95 00	9 50	11 00	3 00	13 00	344 00	215 50

North Penobscot, . . .	8 50	22 25	3 00	5 25	-	9 75	3 00	2 50	-	20 50	74 75	29 00
North Somerset, . . .	6 80	7 50	3 75	8 40	-	22 00	2 25	7 50	-	80 00	149 05	138 20
Oxford County, . . .	40 00	10 00	22 00	17 50	-	114 75	28 00	14 00	1 00	60 00	283 50	307 25
Penob. and Aroostook Union,	7 50	4 50	3 50	3 75	-	28 00	-	4 50	-	-	64 75	64 25
Piscataquis County, . . .	10 00	21 00	4 00	6 00	-	20 50	5 00	2 00	-	5 25	161 00	73 75
Sagadahoc County, . . .	23 00	38 00	53 00	43 00	12 00	44 00	22 00	14 50	15 50	28 75	650 50	293 75
Somerset Central, . . .	14 25	21 00	9 50	14 25	4 50	141 25	10 50	13 50	-	-	450 17	289 25
South Kennebec, . . .	22 00	46 00	36 00	10 00	15 00	108 00	26 00	19 00	-	40 00	654 50	322 00
Waldo County, . . .	-	63 00	18 00	18 50	5 00	44 00	7 00	9 00	2 50	20 50	197 50	187 50
Washington County, . . .	9 00	44 00	11 00	37 00	7 00	30 00	10 00	16 00	-	-	172 00	164 00
West Oxford, . . .	8 00	7 00	5 00	2 50	7 00	23 50	4 00	12 00	-	9 50	111 50	86 50
West Penobscot, . . .	8 00	23 50	3 75	12 25	-	42 25	2 00	1 00	-	22 00	172 50	114 75
West Somerset, . . .	9 00	6 00	6 00	9 00	-	18 50	5 25	18 50	-	85 00	157 25	144 00
York County, . . .	15 00	10 00	10 00	7 00	10 00	22 00	20 00	8 00	12 00	40 00	236 00	153 00
Totals, . . .	409 65	575 50	561 25	426 75	108 50	2,157 00	239 00	283 75	60 75	700 00	7,629 32	5,642 95

## ANALYSIS OF PREMIUMS AND GRATUITIES AWARDED, (Continued.)

## FOR FARM PRODUCTS.

Societies.	Amount awarded for Indian Corn.	Wheat.	Rye.	Barley.	Oats.	Any other Grain Crop.	Grass Crops.	Potatoes.	Carrots.	Beets.	Turnips.	Other Root Crops.	Total amt offered for Grain and Root Crops.	Total amt awarded for Grain and Root Crops.	Am't awarded for any other cultivated Crops.	Fruits and Flowers.	Am't awarded for Honey and Sugar.	Am't awarded for Butter and Cheese.
Maine State Society,	33 00	22 00	-	13 00	15 00	-	18 00	20 00	15 00	5 00	10 00	-	283 00	133 00	41 00	69 00	74 00	180 00
Androscoggin Co.,	7 00	6 00	-	-	2 50	-	5 00	6 00	3 50	2 00	3 00	4 00	78 00	38 00	3 75	8 50	3 00	16 50
Cumberland County,	8 00	-	-	-	-	-	-	-	6 00	-	2 00	5 00	66 00	21 00	-	10 75	5 00	12 00
East Somerset,	6 50	5 50	-	1 00	-	1 50	-	5 50	3 50	3 50	4 50	3 50	44 20	34 00	50	75	-	12 00
Franklin County,	-	-	2 00	3 00	-	-	-	-	-	-	-	-	39 75	5 00	8 00	1 50	1 50	11 50
Kennebec County,	5 00	4 75	-	3 75	3 00	-	-	3 75	3 00	-	3 00	1 50	27 75	27 75	-	7 00	-	18 00
Lincoln County,	16 00	6 00	-	-	5 50	3 50	-	9 00	3 00	1 00	5 00	-	60 00	48 00	8 75	25 25	-	28 00
North Aroostook,	-	9 00	-	-	-	8 25	-	3 00	-	-	5 00	1 50	73 50	31 00	4 00	-	1 00	25 75
North Franklin,	15 70	11 00	3 50	1 00	5 25	11 00	-	8 50	1 00	1 40	3 50	-	67 85	69 15	-	4 55	2 75	7 75
North Kennebec,	9 00	7 00	-	-	-	-	-	3 00	-	-	2 00	-	95 25	21 00	-	7 00	-	11 50
North Penobscot,	5 25	7 50	-	2 00	2 00	6 00	-	3 00	1 00	-	1 00	1 00	35 75	-	2 00	11 00	-	9 00



## MISCELLANEOUS.

Societies.	Amount awarded for Agricultural Implements.	Amount awarded for all other Agri- cultural objects.	Amount awarded for all objects other than Agricultural.
Maine State Society, . . . . .	21 00	2264 00	438 00
Androscoggin County, . . . . .	6 00	118 75	336 75
Cumberland County, . . . . .	8 00	-	53 25
East Somerset, . . . . .	75	-	30 30
Franklin County, . . . . .	-	-	66 57
Kennebec County, . . . . .	2 50	-	85 00
Lincoln County, . . . . .	5 00	25 00	75 00
North Aroostook, . . . . .	6 00	-	-
North Franklin, . . . . .	4 00	-	53 79
North Kennebec, . . . . .	12 00	-	68 50
North Penobscot, . . . . .	22 00	-	8 25
North Somerset, . . . . .	-	-	-
Oxford County, . . . . .	9 00	-	64 00
Penobscot and Aroostook Union, . . . . .	1 50	-	23 00
Piscataquis County, . . . . .	4 25	-	23 42
Sagadahoc County, . . . . .	1 00	441 50	142 50
Somerset Central, . . . . .	12 50	-	43 70
South Kennebec, . . . . .	-	-	131 64
Waldo County, . . . . .	5 00	-	-
Washington County, . . . . .	5 50	23 25	79 75
West Oxford, . . . . .	5 00	-	9 00
West Penobscot, . . . . .	6 50	1 75	37 98
West Somerset, . . . . .	-	-	7 80
York County, . . . . .	-	-	91 00
Totals, . . . . .			



## AGRICULTURAL EXHIBITIONS—1857.

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Maine State, at	Bangor, Sept. 29, 30, Oct. 1, 2.
Androscoggin, at	Lewiston, October 6, 7, 8.
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South Kennebec, at	Gardiner, September 23, 24, 25.
Waldo, at	Belfast, October 14 and 22.
Washington, at	Pembroke, September 22, 23.
West Oxford, at	Fryeburg, October 21, 22, 23.
West Penobscot, at	East Corinth, September 25.
West Somerset, at	Madison Bridge, October 7, 8.
York, at	Saco, October 13, 14, 15.

## Officers of Agricultural Societies—1857.

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### MAINE STATE.

<i>President,</i>	SAMUEL F. PERLEY,	Naples.
Presidents of the several County Agricultural Societies are Vice Presidents ex-officiis.		
<i>Secretary,</i>	EZEKIEL HOLMES,	Winthrop.
<i>Treasurer,</i>	WILLIAM CALDWELL,	Augusta.
<i>Trustees,</i>	{ THOMAS S. LANG, DANIEL LANCASTER, SETH SCAMMAN, FRANCIS T. PURINGTON,* JOB PRINCE,	North Vassalboro'. Farmingdale. Saco. Topsham. Turner.

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<i>Trustees,</i>	{ RUFUS PRINCE. SEWALL MOODY, AMOS NEVINS, H. C. BRIGGS, D. L. WEYMOUTH,	Turner. Webster. Lewiston. Auburn. Greene.

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<i>Treasurer,</i>	GEORGE WOODMAN,	Portland.
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<i>Treasurer,</i>	JAMES FULLER,	“
<i>Trustees,</i>	{ WILLIAM M. PALMER,	Palmyra.
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	{ JOHN ROWELL,	“
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<i>Trustees,</i>	{ S. N. WATSON,	Fayette.
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<i>Secretary,</i>	LUTHER ROGERS,	Patten.

## PISCATAQUIS.

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		CHARLES LORING,	Guilford.
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		BENJAMIN M. BROWN,	West Bath.
<i>Secretary,</i>	JOHN H. THOMPSON,	Topsham.	
<i>Treasurer,</i>	ELISHA CLARK,	Bath.	

\* Deceased.



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<i>President,</i>	ABNER COBURN,	Bloomfield.
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<i>Secretary,</i>	NORRIS MARSTON,	Bloomfield.
<i>Treasurer,</i>	JOHN F. POLLARD,	Skowhegan.

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## SOUTH KENNEBEC.

<i>President,</i>	DANIEL LANCASTER,	Farmingdale.
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<i>Trustees,</i>	{ DANIEL LANCASTER, JOHN A. PETTINGILL, J. D. WARREN,	Farmingdale. Augusta. Pittston.
<i>Secretary,</i>	JAMES M. CARPENTER,	"
<i>Treasurer,</i>	JOHN STONE,	Gardiner.

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<i>Vice President,</i>	HENRY CUMMING,	Belfast.
<i>Secretary,</i>	TIMOTHY THORNDIKE,	"

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## WASHINGTON.

<i>President,</i>	JONATHAN REYNOLDS, Jr.,	Pembroke
<i>Trustees,</i>	{ EDMUND LINCOLN, L. T. REYNOLDS, G. W. CHADBOURNE,	Dennysvillo Pembroke. Perry.
<i>Secretary,</i>	W. D. DANA,	"

## WEST OXFORD.

<i>President,</i>	F. L. RICE,	Denmark.	
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		OLIVER ALLEN,	Hiram.
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		WILLIAM WOODBURY,	Sweden.
		THOMAS FARRINGTON,	Stow.
		GEORGE B. BARROWS,	Fryeburg.
<i>Treasurer,</i>	JAMES WALKER,	"	

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<i>President,</i>	NATHANIEL BURRILL,	Newport.	
<i>Vice Presidents,</i>	{	HENRY K. DEXTER,	Corinth.
		FRANCIS W. HILL,	Exeter.
		V. S. PALMER,	Kenduskeag.
<i>Trustees,</i>	{	T. R. SHAW,	Exeter.
		JOHN THISSELL,	Corinth.
		JAMES O. TILTON,	Kenduskeag.
<i>Secretary,</i>	T. B. BATCHELDER,	"	
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<i>President,</i>	WILLIAM B. SNOW,	Madison.
<i>Secretary,</i>	CYRUS BRADBURY,	Anson.

## YORK.

<i>President,</i>	SETH SCAMMAN,	Saco.	
<i>Vice Presidents,</i>	{	THOMAS DYER, 3d,	Saco.
		ISAAC DEERING,	Waterborough.
		JOHN ELDEN,	Buxton.
		J. M. GOODWIN,	Dayton.
<i>Trustees,</i>	{	T. M. HAYES,	Saco.
		J. M. DEERING,	"
		B. E. CUTTER,	Biddeford.
		JOHN MILLIKIN,	Buxton.
		ELIJAH HAYES,	Berwick.
<i>Secretary,</i>	JOHN HANSCOM,	Saco.	
<i>Treasurer,</i>	WILLIAM NOYES,	"	



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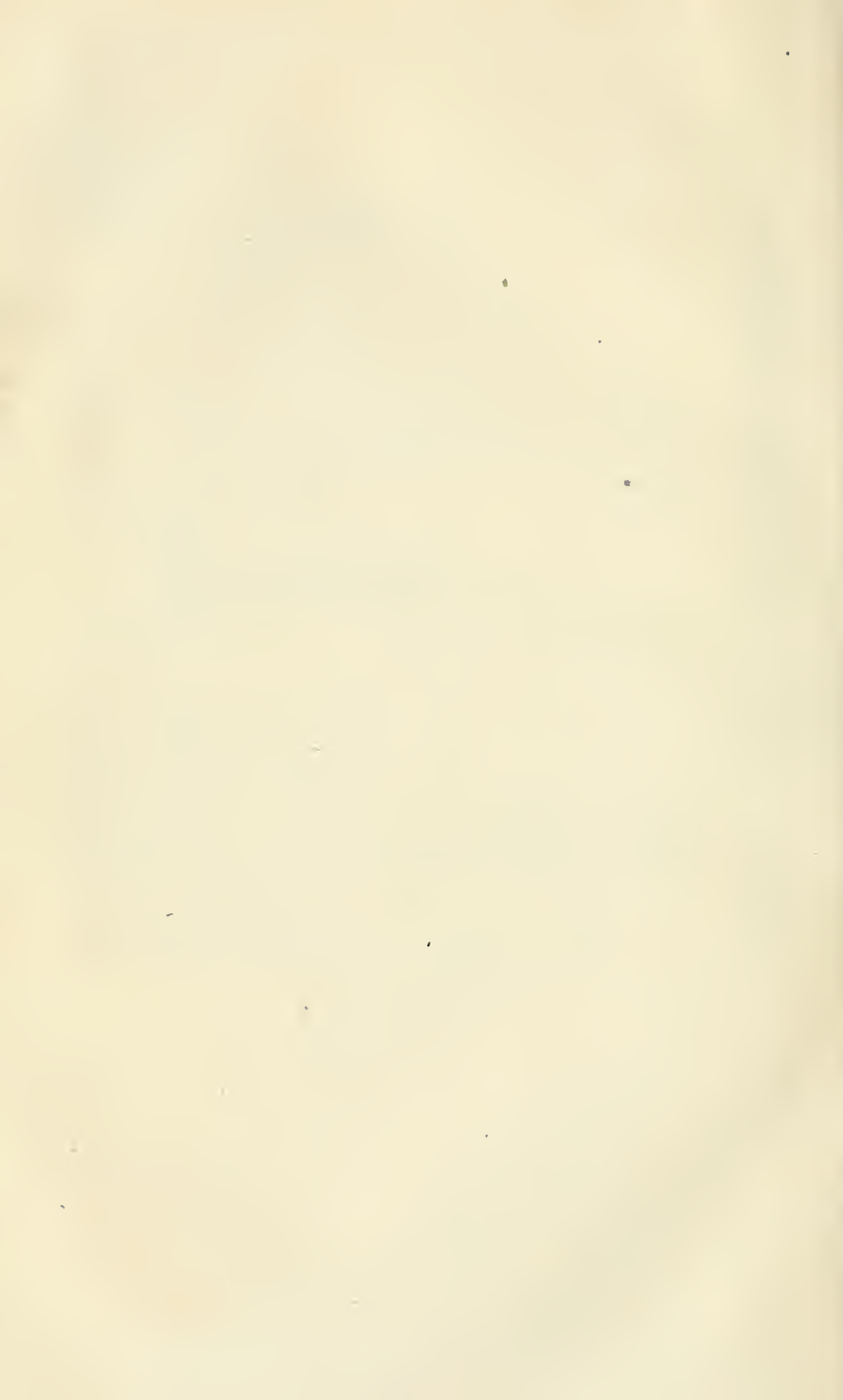
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West Penobscot, at	East Corinth, September 25.
West Somerset, at	Madison Bridge, October 7, 8.
York, at	Saco, October 13, 14, 15.



## MAINE STATE AGRICULTURAL SOCIETY.

---

The Secretary of this Society, Dr. E. Holmes, furnishes the following remarks relative to its operations for 1857:

The third annual exhibition of the Maine State Agricultural Society was held in Bangor, on Tuesday, Sept. 29th, and the three following days. As a whole, it was a very successful one, considering that the Society is still in its infancy, and that it has never before held an exhibition in that part of the State. One, who has visited the shows of this Society, which it has thus far held in different locations, cannot help observing how instrumental it is in demonstrating what particular branch of culture, or stock breeding, or industrial pursuits prevails in that locality. Thus, in Kennebec, neat stock, and especially fine oxen, take the lead in the field. In Penobscot, the leading interest of the show, in the field, consisted in fine and fast horses.

A greater number of horses were entered than ever before, but the neat stock department was not so well represented as usual. By this we do not mean to say that the cattle were not good. Very many fine animals were upon the ground, and the several classes were well represented, both in full bloods and grades. We especially noticed the fine display of Devon stock, from the Shaker village, at East Poland, exhibited by Isaiah Wentworth. He had about thirty head upon the ground, of all sizes, from the calf to the full grown sire. His stock was partly from the Hurlburt breed, in Connecticut, and attracted great attention. Several good Durhams were exhibited by I. W. Case, of Kenduskeag. J. D. Lang, of Vassalboro', showed some of his fine cows, both full blood Durhams and grades

which added much to the show of milking stock. He also had the only full blood Ayrshire on the ground, being a fine two years old bull, from a cow imported by President Wayland, of Providence, R. I.

The Herefords came from Waldo and Oxford. Darius Forbes brought upon the ground, several fine grades, among which were his two years old bull Hercules, and a fine yearling thorough-bred bull, just received from Sotham's herd, of Oswego, N. Y.

Those from Waldo were exhibited by Horace McKenny, of Monroe, who had some fine grade cows, heifers, and steers. We contributed what we could to the show of Jerseys, and a wag said he should know that they belonged to an Editor, as they were always *lean*, but give *good milk*.

In the class of natives Mr. Washington Robbins, of Rockland, exhibited a cow and calf which were thus designated. They were fine animals, far superior to what has usually been considered native stock. Yet, from Mr. Robbins' statement we do not know what else to call them. He states that they are lineal descendants of a bull introduced 60 or 70 years ago into that section of the State by Gen. Knox. From whom the General obtained it, is not known. They may have had, originally, Devon blood in their veins. They were of a light red color, were of good size and symmetry.

Mr. Sabine, of Bangor, had quite a herd of cattle upon the ground, among which were some good looking cows. Mr. S. is just commencing stock raising, and of course his stock are rather varied in their characteristics. He has the means, however, of doing a large business in this way, and as he avails himself of his advantages will introduce such improvements as will be dictated by prudence and profit. Since the establishment of the Society the Durham, Hereford, Devon, and Jersey classes, have increased in number.

The Ayrshires and Galloways are yet minus. There was but one thorough-bred Ayrshire, and no Galloways, exhibited this year.

The ox department was not well filled. There were good oxen and steers upon the ground, but no county teams, and but one town team came forward to claim the Society's premium; and that town was Ellsworth. What the farmers of Penobscot county, and of the towns in the vicinity of the Show were dreaming about, that they could not get out oxen enough to secure all the premiums offered for such teams, we cannot divine. We trust that should



another State Fair be held in that section, we shall see a turn out of teams that Penobscot, and the State, might well be proud of.

In the Sheep, Swine, and Poultry departments there was a falling off. E. F. Crane, of Kenduskeag, was the only man who brought out a flock of sheep. There were a few grade Leicesters and French Mérimos on the ground. H. G. Chapman, Esq., of Gilead, exhibited a pair of Cheviot sheep, originally from the farm of the late Daniel Webster. These were the first of the breed ever exhibited at any of our State Fairs, and are, we believe, the only ones in the State. Isaiah Wentworth exhibited some handsome grade South Down lambs.

The Hog tribe numbered still less than the sheep. Mr. Hoag, of Gardiner, exhibited a grade of the Suffolk and Chester. Messrs. Straw & Nourse, of Orrington, exhibited some of the Suffolks; and H. Percival of Waterville, brought upon the ground an excellent full blood Essex sow.

The exhibition of Poultry consisted of the Asiatic breeds, Bantams, Red-caps, and Bolton Greys; Bremen Geese, Hong-kongs and China; and the common Duck. Mr. Noyes, of Bangor, made a very pretty show of fancy pigeons.

To the usual accompaniments of trotting, plowing and hauling matches, was added that of a trial of Fire Engines by several Fire Companies from different sections of the State, in competition for two Silver Trumpets. This last came off on Wednesday, and drew together a large collection of people to witness the contest. The first prize was taken by a company in Bangor, who rejoice in the cognomen of "Tigers;" and the other was secured by a company from Waterville, who are called "Watervilles," and who sport a Button Tub.

The drawing match came off on Wednesday morning, and the plowing match on Thursday morning. Both were well contested. Among the variations in the drawing, was the competition of the boys for the manifestation of skill in training and driving steer calves. This was a new feature in the programme, and attracted much attention. The contestants were Master Elliot Wood, son of Lewis Wood, of Winthrop, and Master McKenney, son of Horace McKenney, of Monroe. They came upon the field with their calf teams, all harnessed with yoke and drag, and put them through all the evolutions, with as much skill, judgment and precision, as older

men and older oxen. This is a valuable trial. Train boys and oxen when they are young, say we.

At four o'clock on Thursday, an excellent address was delivered in the great tent on the field, by Rev. Mr. Leonard, of Waterville.

The in-door exhibition or "fair," was held in Norombega Hall, or more properly, perhaps, the halls of the Norombega, for this noble building contains three spacious halls, all of which were devoted to the exhibition, and in addition to this a large temporary building, 40 by 60, two stories high, was built upon the north end for the accommodation of machinery and heavy agricultural and other implements.

Those halls were all well filled with the articles to which they were specially devoted. Going into the first hall the eye was met with a rich profusion of articles of various manufacture, from the factory, from the household, and from the artizan. The display was rich and exceedingly interesting to those who had the leisure to give them a careful examination, giving a tangible demonstration of the skill and taste of those who had brought the products of their industry for the inspection of the public, and to speak for themselves. Such expositions give more satisfactory proof of the intelligence, skill and ingenuity of our people than a thousand volumes of written description. To those who have been in the habit of examining, from year to year, these exhibitions, abundant evidence of advancing improvement was manifest.

The number of entries in the Hall department were more numerous than at Portland, the year before, which indicates an increasing desire among the people to unite in aiding the Society in bringing forward specimens of the industrial skill of the country, and thereby promoting a wholesome and laudible emulation.

All the classes of premiums offered by the Society were eagerly competed for, except those in the class of "machine-made fabrics," and in the class of "clothing." In these there was less competition than last year.

Adjoining the main hall was an ante-room, set apart for the exhibition of dairy products, and kept cool by tubs of ice placed around it. The display of butter and cheese was superior to that of last year. Some excellent samples of both were brought forward for the inspection of the committee. This is encouraging, and evinces

an increasing desire, for improvement in this important part of farm industry. The second Hall was devoted to specimens of the Fine Arts. This was well filled, and the display was highly creditable, not only to the several artists who brought forward their productions, but also to the citizens of Bangor, and others in the vicinity, who responded to the invitation, and brought out choice specimens to add beauty and interest to the gallery. It was crowded with a throng of admiring visitors, who seemed highly gratified with the exhibition of such life-like portraits and beautiful pieces of natural scenery;—Daguerreotypes, Ambrotypes, and Photographs, were exhibited in numbers, presenting at a view not only the excellence to which this wonderful art has been brought, but also the recent improvements in Photography, which are really astonishing.

Passing to the upper Hall we come into the Horticultural and Pomological department. Fears had been entertained previous to the day of the show, that in consequence of the cold and backward season there would be a failure here. But every one was, in this, happily disappointed. The show of apples was equal to any previous year. Indeed, it was in some respects superior; that of plums and pears was rather minus. Nor were there so many grapes of out-door culture presented as usual, but the display of grapes from the grape houses in the city, was very much superior to anything before exhibited. The Bangoreans have more graperies than can be found in any other city or town in Maine, and they manage them with decided skill and profit. A few of them are prepared to use heat, but the most are cold graperies. Although rather late in the season, the flower department was extensively filled with rich and strong specimens of floriculture.

The vegetable department was in rich abundance, as the stores of squashes, pumpkins, beets, cabbages, cauliflowers, tomatoes, and other productions of the garden, spread out on either hand, amply testified. The specimens of corn, wheat, and other grains, were of excellent quality. This part of the show, though not so gay in appearance, attracted the attention of the more considerate and thoughtful, who examined the specimens with an eye to substantial and practical results. They reveal the power of our soil to produce a supply for the great demands of life, bread and meat for man.

Passing through and down from this Hall, we descend into the

outer porch at the north, and find ourselves at once in a machine shop with a steam engine turning its powerful shafts, to which were attached a number of machines, sawing and planing, and rattling away each at its own peculiar business. All around were implements of agriculture. Ploughs of all kinds and dimensions, harrows and seed sowers, and reapers and mowers, hay presses and hay cutters, stump pullers and horse rakes, corn shellers and wash tubs. The display of agricultural implements was not so good in point of numbers and variety as last year, but the specimens exhibited were of thorough workmanship.

Two articles in this room were examined with no little interest. These were the slates from Brownville, and the pig iron from the Katahden Iron works. Both are the product of material found in the upper part of Piscataquis county, in quality superior to that from any part of the known world. Nothing but the distance and expense of a long and tedious land carriage prevents an almost unlimited supply being afforded from these two localities of these indispensable articles of necessity and use.

It is pleasant to know that we have an inexhaustible supply of such things in our borders, even if the facilities of communication between them and a market are not at present of such a character as is needed.

The weather for the first three days was fine, and the concourse of people very great. The last day was rainy, which *dampened* the ardor of every one somewhat. Nothing will *wilt* a cattle show like a drenching rain. The deportment of the immense crowd whether in rain or shine was, however, of the first order, and gave a show of self-respect and high moral training that was most satisfactory to the philanthropist. All moved along harmoniously and peacefully, no tumult, no accidents, no jars or collisions or "rowdying" was seen, but every one seemed to be good natured and happy.

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## ANNUAL REPORT OF TRUSTEES.

In accepting the situation of Trustees, to which we were chosen by your confidence, we were animated by the belief that the experience of the past year, and the successful result of the Show and Fair



holden in Portland, would make the task of managing your affairs a comparatively easy one for the ensuing year.

We were aware that many changes were necessary in the general management of the Society, which the experience of the past year most clearly pointed out. Many of these have been effected, but the Board still feel that much time must elapse before the Society can perfect its rules and plan of operations so as to be most useful in encouraging agriculture and the mechanic arts.

We have found that holding the Show and Fair in different places has rendered the management somewhat more difficult; and although careful notice and advertisement of rules and plan of action were distributed throughout the State, yet, the mass of the public in the vicinity where the Show is held, are hardly prepared to fall in with and accept arrangements until they have had at least one year's experience.

At a meeting of the Trustees, holden at Augusta during the last session of the Legislature, several committees from different cities waited upon us with invitations to the Society to hold the next Show and Fair within their limits. These invitations were also accompanied by offers of material comfort and assistance.

After considering the several propositions, we thought best, from geographical reasons, added to the offers of the citizens of Bangor, to hold the next Show and Fair in that city, which was accordingly done.

Thus, the Middle, Western, and Eastern portions of the State have enjoyed the advantage of having the Show and Fair holden in their midst. We believe that satisfactory results will follow the efforts of the Society this year.

While a much larger and more varied Show might have been made in the more densely populated portion of the State, and the results to the Society, financially speaking, more satisfactory, yet, the legitimate object of the labors of the Society is better answered, and, we believe, appreciated, by our Eastern farmers and mechanics.

The weather the week of the Show and Fair, until Friday, was favorable, and the city of Bangor was literally overrun with strangers. The hospitalities of the citizens were freely offered to hundreds who found it impossible to obtain lodgings at the hotels.

The Show commenced on Tuesday, the 29th of Sept., and up to

Thursday night the receipts were such that we felt no doubt that the entire receipts of the Fair must exceed largely that holden in Portland last year. Friday morning commenced with a violent rain, effectually suspending the exhibition upon the grounds. And while it prevented thousands from starting from their homes to attend during this most exciting day of the exhibition, it induced those who had been in attendance, to seek their homes at once.

On Saturday, the exhibition upon the grounds was again resumed, but in presence of a comparatively small number of spectators. The rain the preceding day was so severe and cold that we thought best to dismiss the neat stock, nearly all of which was driven away.

The Show of neat stock was not large, but many fine animals and herds of full blood and grades upon the grounds evidenced that the farmers of Maine are alive to the improvement of native, and introduction of blood stock.

The show of Horses was excellent, there being many more on exhibition than at any previous Show. Great care has been taken in the improvement of the breed of horses in this State; and the animals brought together at this Fair conclusively proved the superiority of Maine horses.

The Trustees regret to say that the show of Sheep was very meagre. That the interest in this important branch of husbandry is much lessened within a few years, there can be no doubt. This is the effect, undoubtedly, of the extreme fluctuation in the prices of wool. But at even a low price of wool, we believe that a hardy, vigorous flock of sheep should be kept by almost every farmer in Maine.

The exhibition at the Halls was of the first order, and contributed largely to the success of the whole.

A new feature was added this year, in supplying motive power—a steam engine of thirty horse power, being in operation during the Fair, running such other machinery as required moving power to show its efficiency. Had it not been for the peculiar pressure of the times, rendering it onerous for the mechanic to incur the expense of displaying his work, this department of the exhibition would have been extremely interesting and useful. The display of labor saving machinery is generally small at our Fairs. But supply steam power, or otherwise prepare to move machinery, and every new and



useful invention, applicable to our industry, will seek this channel to introduce themselves to the public, and be a source of gratification and usefulness, also.

An unusually beautiful array of Fruit was made this year, the Bangor Horticultural Society generously uniting to assist in making up the show. The many varieties of apples, pears, plums, and grapes, exceeded our most sanguine expectations.

We believe that a general effort should be made in this State towards planting new orchards, and improving those previously planted. The knowledge that Maine apples are universally preferred for shipping, as well as home consumption, on account of their excellent keeping qualities, must induce the Maine farmer and horticulturist to make a strong move towards supplying the ever increasing demand for this excellent fruit.

The thanks of the Society are due to the gentlemen composing the several committees, most of whom promptly responded to our call for their services.

The executive government of the several railroad and steamboat routes leading towards Bangor are deserving your special thanks for a reduction in fare, and such accommodation as the public desired.

The Trustees take pleasure in communicating to the Society the kindness with which we were received as your representatives by the citizens of Bangor. The generous and unwearied co-operation of several gentlemen of that city in carrying out our plans is deserving your warmest thanks.

The financial results of the Show and Fair are as follows :

Expense of Show and Fair, including Premium List	
awarded and paid, about	\$8,000 00
Receipts of same,	7,408 10

The usual annuity of \$1000 was received from the State Treasurer and applied according to the provisions under which it was granted.

About three thousand of the eight thousand dollars above mentioned was paid in premiums and gratuities.

The Trustees instructed the Treasurer to invest one thousand dollars of the funds in his hands in State Stock, which was accord-

ingly done. For a more detailed statement of financial matters, we would respectfully refer you to the Treasurer's Report.

In submitting the foregoing report, we are aware that some may be disappointed who based their expectations of financial success upon last year's operations. But the Trustees have been united in the desire to act with as much economy and prudence as is consonant with honorable transactions.

The Trustees have felt desirous that the premium list might be considerably increased, especially upon farm stock. But while so large a part of the receipts are necessarily used in preparing new grounds each year, and the necessary cattle sheds, hall fixtures, &c., we have been at loss to see how to bring about this desirable result.

For the Committee.

T. S. LANG, *Chairman.*

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### TREASURER'S REPORT.

The financial transactions of the Maine State Agricultural Society for the past year, are contained in the following statements:

Cash in the Treasury, January 1, 1857,	\$2,923 27
Amount of receipts from Jan. 1, to Dec. 31, 1857,	8,444 10
	<hr/>
Total,	\$11,367 37
Disbursement from Jan. 1, to Dec. 31, 1857,	\$9,873 76
Leaving a balance in the Treasury, Jan. 1, 1858, of	1,493 61
	<hr/>
Total,	\$11,367,37

There was received at the late Fair and Show at Bangor, the sum of \$7,408 10, and the expenses attending the same were \$8,000 00. The sum of \$2,898 25 was awarded for premiums and gratuities—also one hundred and twenty diplomas and about sixty dollars worth of books.

Of the premiums awarded in 1856, \$145 75 has not been called for, and under the regulations of the Society, all premiums not called for within one year revert to the Society.

The bounty of \$1,000 granted by the State, for 1857, has been

received, and expended for the encouragement of the various departments of agriculture, &c.

By order of the Trustees, I invested one thousand dollars of the funds in the treasury in State of Maine six per cent. stock, which falls due March 1, 1858, and I would recommend that when due, it be reinvested in State or Bank stock.

The outstanding demands against the Society are estimated at about \$300, and the premiums uncalled for, \$642.

I herewith present my account of receipts and expenditures, with the vouchers.

WM. CALDWELL, *Treasurer.*

AUGUSTA, Jan. 1, 1858.

## ADDRESS

Delivered before the Maine State Agricultural Society, at Bangor, October 1st, 1857,

by Rev. H. C. LEONARD.

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GENTLEMEN:—I have been called to this platform to speak to some of the farmers of Maine. I confess to you that I come before you cheerfully, and with a profound love for your vocation, and an earnest desire to say a word of encouragement to those of you who aim for improvement in the several pursuits of agriculture, and thus to augment the wealth, and elevate the moral power of our noble State. I feel no repugnance towards what the situation, or the labor, or the life of the farmer ought to be. If I envy any man's worldly condition, it is that of the farmer who owns a reasonable number of acres within the boundaries of Maine, is satisfied with the capabilities of his realm, believes in the purity of our northern skies, and our northern atmosphere, and works, year after year, with a patriotic and enthusiastic spirit; a loving, happy, courageous heart; a comprehensive and cheerful faith; a growing and glowing hope. The older I grow, the more clearly do I see the grandeur and beauty of our vast territory; the more warmly does my affection turn towards our mountains, hills and valleys; our lakes, and rivers, and brooks; and the more deeply am I moved and led by the wish to have a home of my own, somewhere in the midst of these familiar scenes where I may say, This is my kingdom; these buildings are mine; that hill in the background is mine; that wood-lot on the slope, is mine; those fields in the foreground, are mine; those pastures, extending from the fields to the lake, are mine. And here my ownership and my authority are acknowledged. I meet the look of love, the smile of welcome in other men's possessions. I, in one sense, hold as my property, what thousands of other men have titles for, in the eye of the law; hold them as mine to survey, mine to admire, mine to bless and praise, without robbing them of a foot of ground, or of a feature, or a shade of the landscape. But here, in

this realm, whose metes and bounds are recorded in my name, in the book of the Registry of Deeds, my legal rights and rule as well as my higher proprietorship, seem to be acknowledged; so that, if I toil, the smoking furrows whisper to me the gratitude of the field; if I ramble, the rustling corn of the cultivated grounds, and the swaying tops of the elms in the pastures, greet me with music; if I recline for repose upon the green-sward, in the shadow of my vine, or maple, or pine, the earth beneath me heaves like the breast of a mother when she is holding her child, and imparts to me in fragrant breath, the spirit of rest, contentment, joy and peace; if I look forth upon my domain, I behold a scene of rural beauty, truly charming and grateful to the eye; the broad patches of corn, rye, and wheat; of barley, oats and potatoes; the more extensive areas of waving grass; here, the orchard, thrifty and fruitful; there, the pastures, broken into hills and knolls, or rolling like the undulating sea, and grazed by groups of cattle, horses and sheep, some in the shade of trees, some in the sunshine of the open grounds, fitting occupants for those green and diversified enclosures; and farther away, the pure expanse of the lake, glistening like a silver shield; and, if I gaze upward into the sky, I see how the benedictions of the sun and the clouds fall upon my possessions, and all the world around, as the impartial glory and blessings of Him who made the round world, who heaped the mountains and scooped out the valleys, and who "stretcheth out the heavens as a curtain, and spreadeth them out as a tent to dwell in."

"O, yes, what you say sounds very well in speech," exclaims some one who assures me that he knows something of the stern and rugged life of the farm, "but if you will just consider what the farmer's labor is, what his hardships, cares and perplexities are; or if you could but try my lot, or that of any one of my companions, you would not be so poetical or fanciful in your discourse." Don't be so skeptical, my dear sir, as to my conception of your calling, or your condition; don't be so sarcastic nor so confident in your dissent. Let me have a few words with you and your class.

In the first place, I beg leave to remind you, that the interests of agriculture, are the greatest and most important of those which comprise the wealth of our country. Ten years ago, Mr. Burke, in his office as Commissioner of Patents, reported *one thousand five*



*hundred millions of dollars*, as the value of the products of the soil, alone, for a single year; and this as nearly double the amount realized by all the interests together of *manufactures, of trade and commerce, of the fisheries and of the banks, money institutions, rents, and professions*. At the present time, the disparity between the one interest of agriculture, and the others mentioned, is not less; the proportion of wealth produced from the soil, over that produced in all the other realms of industry together, is, without doubt, much greater. Downing remarks, with reference to these facts which I have cited, that "there are few, among the great traders and 'merchant princes,' who do not sufficiently estimate the dignity or importance of any class but their own. To them we commend a study of Mr. Burke's statistical tables." He also remarks, that "there are some few farmers who think their occupation one of narrow compass and resources; and we beg them to look over the aggregate annual products of their country and take shame to themselves." I can stand in the light of this excellent authority, and reiterate what he has said. With him, I can claim the first place, among the industrial interests of the country, for agriculture, with its adjuncts, horticulture, stock-raising, &c., &c. And, furthermore, I can add to what has been shown of the wealth and the preeminence of the interest of agriculture, my exhibition of its attractions, enjoyments, and pleasures, and thus complete the view of agricultural life.

I do not deny that there are hardships, cares and perplexities, in this kind of life. In my best dream of the farmer's lot, I do not see him as exempt from these burdens and annoyances. But I do see that his condition is not singular in this regard. If I notice a distinction between him and those of other occupations, I discover that his chances for freedom from these crosses and troubles, are the best. While he ought not to wish to be free from labor and care, and ought to learn that the noblest characteristics of the mind, are brought out and perfected in the days of toil and trial, he may be the most independent, and the happiest man in the world. How uncertain are the speculations of the man of adventure, the operations of the merchant, the banker, the manufacturer, the fisherman. How often there is a crash of great financial concerns. How often a merchant loses a ship, a banker his stock, a manufacturer his capital, a

fisherman, a whole season's time, and all his little fortune. All those who are exposed, in their business relations, to the fluctuations, and the reverses of the world of commerce and speculation, or whose fortunes whatever they may be, are at the mercy of the winds and the waves, or liable to be burned to ashes in a village or city conflagration, can never be free from the sense of insecurity. But for the farmer, there is comparative security or peace. His buildings may burn, and his money may be in some way taken from him, but his acres will remain to him, and support him. If he have health, and the disposition to till his farm, these will be the foundation for a new superstructure of wealth, comfort and independence. And then as to the dignity, the joys, the serenity and the repose of his life, why, you cannot find their counterparts, as general things, in any other kind of secular, or business life. The dignity of the farmer, contains the elements of intelligence, of self-respect, of love for his occupation, of reverence for labor, and of a hearty and admiring appreciation of all the objects, events and attractions of his situation. His enjoyments are occasioned by the beneficent and radiant spirit which comes to his heart, which penetrates and pervades his soul, as an inflowing life, from all the surroundings of nature, from the hills, and valleys, and trees, and plants, and flowers of the earth, and from the sun and moon, and the countless stars of the over-arching sky. He can be a being of light and joy, if he have an eye to take in the glory which the Creator reveals in his handiworks, in the manifold effects and movements of the outward universe within his vision, and an ear to catch and hold the rich harmonies which come to him perpetually from flowing waters, and circulating winds, and fluttering leaves, and stirring grain, and chanting birds, and piping insects.

I cannot imagine why a farmer ought not to be one of the most intelligent of men, or why he ought not to make himself the possessor of all those qualities which form the noblest character, or why his eye should be dim, or his ear deaf, to what, in numberless forms, or in the sublimest and most enchanting modes, are brought to him and drawn about him every day. I know that you may find many farmers who have not tried to grow in wisdom and knowledge, who have sneered at the lessons of science, which are so important and useful in their applications to agriculture, who have no taste for that

healthy, vigorous, ever fresh, ever charming literature, which in papers and books, teaches them how to honor their calling, how, in fealty to it, to attain the grandest and the most beautiful results, and to consecrate and adorn their whole sphere, so as to make it gloriously attractive to the world at large, but especially so to those who are nearest and dearest to their hearts, their wives, who share with them in toil and care, and their sons and daughters who look to them for instruction and guidance, for the best views and the best counsel, as to the sphere they should occupy, or the pursuit they should follow. The children of these men early learn to think unfavorably of their homes, when these homes rise up before their minds, in contrast with the cottages and mansions in the village, or the blocks of costly and magnificent palaces in the city; and to draw the conclusion, when they consider the aspect of things around them, as compared with the grand exhibitions of commerce, manufactures, and other great interests on the tide waters, and in the populous inland towns, that farming is a mean occupation, and that whoever devotes his faculties, his time, and his toil, to this pursuit, must always be but a drudge, but a menial, rude, uncouth, envious, thankless, and joyless.

The farmer's home should be a home of convenience, comfort and beauty. It is, in many instances, otherwise, unnecessarily. You will see a house large enough, and costly enough, and, as to its exterior, handsome enough. But it is not a pleasant abode. The blinds of the great front rooms are all closed. The spiders weave their webs in the parlor and in the hall, and the floors, perhaps, are carpeted with corn and dried apples. No stately elms stand in the yard, to cast their shadows, now over the road, and now over the roof. No roses, nor pinks, nor forget-me-nots, bloom in the garden. The grass is rank and tall in the path leading to the door, and the hinges and the latch of the gate are yellow with rust. In a single room, in the rear of the dwelling, the domestic cares are attended to, and all the usual in-door operations, toils, and communions, take place. Here, cooking, and eating, and conversation, are all blended and confined together; and there is not much else to be done here; the father, or one of the boys, may whittle a goad-stick, or finish a yoke; the mother and girls, may attend to the dairy;—nothing besides, is done worthy to be mentioned. There is no living room,

or parlor, to retire to, in the hours of leisure, for reading, or thoughtful, cheerful communion, or singing, or closing the day with devout and fervent expressions of thankfulness to God for his countless mercies and benedictions. There are no arrangements under this roof, but such as imply, that the life of the house must be merely drudgery and physical existence, and that none of the attainments, or accomplishments, or refinements of education, would be appropriate here. And so the consequence is, that the boys and girls, when they get a peep at the world abroad, leave their home, and seek to better their condition among strangers, or in new spheres of life and toil. This is the result with too many who begin this existence amid the scenes and the influences of the country. Some of them, it is true, are successful in their new employments; they become wealthy in trade, or attain to posts of trust and independence in the factory, or in the counting-room, or climb to power and affluence in statesmanship, or to a commanding position in science and learning, or to a point of eminence and usefulness, in the school, or the college, or the church. But others fail. Many fail. Whatever the callings they choose, the temptations of the world are too powerful for them, or they lack wisdom, and cannot determine for what tasks they are fitted, or are blind and cannot see the perils lying in their way, and they reach an evil end.

Now, this dark side of the picture which I have so hastily drawn, suggests a need of reform in many of our rural homes. We are cautioned by it, not to make, by narrow, rude and mean modes of life, by a disregard of good taste, comfort, convenience and beauty, by ignoring all those things which help to form a noble, a pleasant, or a genial condition in domestic and social being, the removal of our young people from the farms, a necessity. Let those, who, because of their turn of thought, or taste, or natural, or acquired fitness, choose to fill a place in other departments of life, leave their country homes; for they will leave them honorably, and they will carry agreeable recollections of them, within their minds, wherever they go, and they will often return to them, to spend a few days in repose and joy with loving and happy parents, and to catch new vigor from the eternal freshness of the well-known and affectionately remembered hills, and woods, and fields; and when the evening of life shall come, they will come back, perhaps, "for good,"—"for



good," indeed,—to pass this period in peace; to enjoy in it the smiles of the verdant earth, and the benignant sky, the love and honor of those of kindred blood, and according minds; and in the mellow hour of the setting sun, to be "gathered to their fathers." But let none be driven from these homes by the force of such circumstances, or the power of such influences, as I have referred to. There ought to be no occasion for an exodus of this character. Though you live in a house built of logs, you have the means, and you ought to have the disposition, to make it an attractive home. There may be room, a place for every thing, and every thing in its place, neatness and beauty, the indications of intelligence and refinement, within; there may be trees, and vines, and flowers, and a charming arrangement of barns, and sheds, and lands, without; and both within and without, the things of utility and beauty will be wisely blended; and seasons set apart for toil and pleasure, or for manual labor and mental improvement, and enjoyment will come with proper and agreeable alternation. I have known young men and young women, in such a home, who would grace any sphere in life. They were wise enough to comprehend and to appreciate the advantages and attractions of their situation. I have known others, in apparently better circumstances, who, because the show of every thing around them was perpetually stern, hard and repulsive, and the sound of every voice they heard was metallic and discouraging, were never animated by noble thoughts, or hopeful with great ideas, or cheerful in the work of the field, or happy in the converse and the repose of the table, or the fire-side. I remember a young man, the son of a farmer, who, on account of what he deemed the slavery and unprofitableness of tilling the soil, and the disagreeableness of being confined to the habits, the dullness, and the meniality of agricultural life, when he attained his twenty-first year, left his home, and, after a fortnight's vain endeavor, returned in great sorrow, because no one had hired him to scour the country around with a horse and cart, as a tin-pedlar. He but got relief from his disappointment, at length, by learning to peg the soles to the upper-leather of coarse brogans, and occupying a back, unfinished room, in his father's house, in this vocation. I refer to this case, because it is a striking one, and because similar ones are not uncommon, and because the needlessness and the folly of the example, you will readily

acknowledge; not because I see no respectability in the calling of the tin-peddler, or in that of the cord-wainer. I see, as you do, that these employments are as respectable as other modes of labor. What to me is reprehensible in a case like the one before us, is, that a noble, a grand occupation, is forsaken—one that may be deemed of great compass, and of pre-eminent advantages, and as calling into exercise the highest and purest faculties of the mind, as well as the energies of the body—for another occupation of less scope and utility, and not more conducive to the higher ends of life.

The work of the farm should be engaged in with alacrity and cheerfulness; and the boys and girls should be so instructed and trained in it, that it will be their pleasure and delight. In order to keep them at home, and to make their home, and their toil, and their life, in all ways agreeable to them, there should be not only care taken with reference to the architecture, and the disposition, and the decorations of the house, and the other buildings, but there should be, also, a persistent endeavor to dignify, ennoble and sweeten the labor of the farm; there should be not only the effort to establish the life of intelligence, freedom, usefulness, refinement, love, affection, peace, and joy, within the house, but, also, the exertion to find and bring to view the greatness, profit and honor, of the roughest and hardest employment out of doors. Thus may the rising generation be prevented from seeking new spheres of labor,—from going to other avocations, or from emigrating to the distant West.

Alas! what harm comes to your sons and daughters, what harm to yourselves, what harm to our great commonwealth, from the idea, so widely prevalent, that the life of your farms in Maine, is too hard, too laborious, and that wealth and happiness can be more quickly and easily attained in new vocations, or on the fertile lands of the Western States. I know how strong the tide is I am attempting to stem in this direction, but I must beat up against it. I must argue that the labor you are called to perform on your farms, is what you owe to them, for what they yield to you; that this labor is promotive of your health and strength, and of your moral well-being; and that nothing of good is gained, beyond what might be acquired in the East, by those who have broken away, in a *stampede*, from their native homes, and have become scattered and lost to us, upon the prairies of the West.



How ungrateful is the man who is not willing to pay back to his farm in labor, in wise and skillful culture, the value of what he draws from it, or a part of the value of what he draws from it, it, for the subsistence of himself and family, and for what he sees around him every day in manifold forms of grandeur and beauty, ministering to his laudable pride, and to his enjoyment and delight. How destitute of patriotism, or of filial feelings towards the place of their birth, is he, who, after attaining his manhood and his education upon it, leaves it worn out and bare, and goes abroad to gain a livelihood without toil, or, if not to "reap where he has not sown," to reap where he has not been required to enrich the soil. Besides, what a poor legacy will he leave to his children, even though his lands may not be impoverished in his own day, even though he may place in their hands thousands and thousands of dollars;—it will be an inheritance of indolence, of false ideas, of ignorance and shameful prodigality. This may not be or will not be in all cases, but this is the danger; for thus it has been in many an instance hitherto. And I may say, too, that this man ought not to think that the new lands upon which he pitches his tent, will be forever fruitful, without the application of nourishing and invigorating elements from the labor and science of man. "There are, doubtless, many superficial thinkers," Downing affirms, "who consider the western soils *exhaustless*—prairies where crop after crop can be taken by generation after generation. There was never a greater fallacy. There are acres and acres of land in the counties bordering the Hudson—such counties as Dutchess and Albany—from which the early settlers reaped their thirty to forty bushels of wheat to the acre, as easily as their great-grand children do now in the fertile fields of the valley of the Mississippi. Yet these very acres now yield only twelve or fourteen bushels each, and the average yield of the county of Dutchess—one of the most fertile and best managed on the Hudson, is at the present moment only six bushels of wheat to the acre! One of our cleverest agricultural writers has made the estimate that of the twelve millions of acres of cultivated land in the State of New York, eight millions are in the hands of 'skimmers,' who take away everything from the soil, and put nothing back; three millions in the hands of farmers who manage them so as to make the lands barely hold their own, while

one million of acres are well farmed, so as to maintain a high and productive state of fertility. And as New York is confessedly one of the most substantial of all the older States in point of agriculture, this estimate is too flattering to be applied to the older States. Even Ohio, newly settled as she is, begins to fall off per acre in her annual wheat crop, and before fifty years, will, if the present system of farming continue, be considered a worn out soil."

In the face of these facts, let the farmers of Maine be admonished; and if they wish to leave a noble inheritance to their children and their children's children,—if they would know, when they retire from this stage of life, that the fertility and loveliness of those hills and valleys will forever be increased, and that their posterity will follow them perpetually in the lofty forms of wisdom, and love, and joy, let them lay their *consecrating* hands upon the grounds, let them pour upon them from their palms and their hearts an eternal blessing, and let each one say of his own locality, as sang the minstrels of a pastoral people of their own city, or the capital of their country: "If I forget thee, O, Jerusalem, let my right hand forget her cunning. If I do not remember thee, let my tongue cleave to the roof of my mouth; if I do not prefer Jerusalem above my chief joy."

What a broad and magnificent heritage this is, which we call our own. There is no better nor brighter land. Just think of the variety of the scenery from the St. Croix to the Saco, or from the Aroostook or the northern lakes, to the sea. How this great domain glows before the vision of our minds; how its numberless hills and valleys gleam, its countless lakes and streams sparkle in the light of the sun; how all the stars of heaven smile on it and bless it. What proofs of the wealth of this land for agricultural purposes have already been brought to light among the hills of Oxford, in the regions overlooked by Mount Blue, Abraham and Moxy, and in the valleys of the Androscoggin, the Kennebec, and the Penobscot. And what resources are yet hidden in every part of this extensive and splendid territory, more than sufficient to repay those who will search for them and make them available for the noblest ends. It is in just such a country as this, and not in one of a less diversified surface, that one may repeat appreciatingly and fittingly these words of the Hebrew Monarch, in one of his hymns to the Almighty: "Thou visitest the earth and waterest it; thou

greatly enrichest it with the river of God, which is full of water; thou preparest them corn when thou hast so provided for it. Thou waterest the ridges thereof abundantly; thou settlest the furrows thereof; thou makest it soft with showers; thou blessest the springs thereof. Thou crownest the year with thy goodness; and thy paths drop fatness. They drop upon the pastures of the wilderness; and the little hills rejoice on every side. The pastures are clothed with flocks; the valleys also, are covered over with corn; they shout for joy, they also sing."

In this realm of exhaustless wealth, of remarkable natural advantages, of unexcelled topographical features, of marvellous and charming characteristics, presented in the boundless interchange of hill and valley, and in the various windings of innumerable streams, in this realm so wide, and so full of yet undeveloped wealth, and yet unappropriated attractions, it is for you to set an example in agricultural science, in practical agricultural science, so wise and beneficent, for those who are growing up under your care and instruction, that they will abide with you, and help you to realize in it the noblest ideas, and the fondest anticipations—to make it a land of thrift and productiveness, of populous towns, of countless rural homes, surrounded with all the signs of intelligence and moral culture, and occupied by families living in the exalted enjoyment of the wisest and healthiest thought, the noblest toil, the finest accomplishments, and the most rational amusements.

With this purpose, you will manifest, in good works, your interest and pleasure in every department of agricultural life,—in agriculture proper, in horticulture, in stock-raising, in every science, or employment, or art, by which the home of the farmer may be improved, or adorned, or made an abode of plenty, truth, faith, love, hope, joy and thankfulness.

Nothing in your sphere is so important as an intelligent, diligent and generous husbandry of your fields. In this day, you are instructed with respect to the differences in soil, and what is needed here or there as a recuperative or fertilizing element. And for every necessary outlay, you are sure of a satisfactory reward. So the inducement for a course of method and wise expenditure in tilling your acres, is sufficient. It is more than sufficient, for you always get more than you give; for what you produce is not only a

result of your outlay of means and labor—but added to all this, great as it may be, is the substance gathered from the atmosphere. Providence does not breath life and vigor into the feeble crops growing upon a neglected, worn out field; but Providence *does* aid the growth of harvests springing from the soil that has been enriched and tended with pains and watchfulness. Besides, by a little knowledge you are enabled to obtain from Providence other help than that which comes from the invisible, yet powerful properties of the air. What wonderful and pleasing changes are wrought by the simple and unexpensive process of plowing in a dressing of clay on sandy soil, or a dressing of sand on clayey soil, or of hauling the dark sediment of the lowlands to the uplands, or of spreading the decomposing, decaying matter of the swamps and bogs upon the cultivated fields, or by ditching and draining the lands that are wet and cold.

It is by an intelligent, diligent and generous husbandry that the grandest success is attained. This kind of toil is profitable even in those countries where the farmers are subject to the heaviest expenses. Of course, then, it is here, where the expenses are not so great. I have an acquaintance, who, but a few weeks since was traveling in England. Recently a letter was received from him, in which he states, that he visited a small farmer one day, whose hired domain consisted of 27 1-2 acres, for which he had to pay £5 rent for each acre; that, besides the expense of cultivating this farm, of the poor rate he had to pay £15; of the highway rate, £3 14s 5d; and for his dog, £2 8s; and that notwithstanding all this burden of rent and taxes, this man was clear from debt, and that there were very many men in England who had no such a “fine opportunity to get a livelihood,” who “would leap for joy to exchange situations with him.” What may not be done, then, by an intelligent, industrious, frugal and enterprising farmer here in Maine? His hardships and drawbacks are few compared with his advantages and helps. I rejoice that there are so many farmers in the State, who look on the bright side of their affairs, and annually prove that an enterprising and courageous application of means and skill to their cultivated grounds, nets them a noble and handsome compensation.

The department of horticulture, on the farm, is a profitable and attractive sphere of labor. A garden of fruit trees, and vines, and flowers, is an Eden, in whose winding walks all the members of the



farmer's family may pass from object to object, following one of the most agreeable of human pursuits. Nothing more adorns a place, than a well-kept garden, comprising an orchard, with the best varieties of apples, pears and plums, and another division containing the common and the rarer varieties of the floral kingdom. There should be one connected with every farmer's home, for, not to speak of the income from it, in dollars and cents, it wins the eye of the traveler, and hints to him of wealth and beauty, screened by umbrageous trees, or climbing vines, or shrubs and stalks covered with flowers of every hue, which gold and silver cannot buy. The watching, the pruning, and the experiments of grafting and budding, all the services required of those who have the care of a garden, take the mind up to a lofty plane of thought and enjoyment; to a condition of love, purity and peace. You need not hesitate, if invited, to enter the abode near which you discover a fruitful and beautiful garden. Go in. You will certainly find pleasant faces; you will hear the words of courtesy and politeness, and you will be entertained with some eloquent discourse on the highest topics, perhaps on the revelations of God's wisdom and goodness in nature, rather than with the common talk, which is of no account, unless to break the silence.

There is nothing in either the soil or the climate of Maine, to discourage the efforts of the horticulturist. He can accomplish a great deal with some well known varieties of fruits and flowers. One of the best of the plums in our gardens was first produced in Bangor; one of the best of the apples in our orchards was first produced in South Paris; the Black Oxford; another not equalled for beauty or flavor, anywhere, first grew in the vicinity of Montreal. This apple, of course, would be hardy enough for Maine, and should find a place in all our orchards and gardens. As to the flowers,—why, all the foreigners among them, seem to be the children of our own soil, they are so much at home with us and they thrive so well; and then as to those that are natives here, they grow profusely in our woods and by our streams, and many of them have been cultivated with remarkable success. What can be more lovely in the beds of our gardens, than our own modest violets, the blue, the yellow and the white; the snowy blossom of the blood-root; the smiling wake-rob-in, the anemone or wind flower, the adder's tongue, the bell-wort, and hosts of others which I need not name? What can be more



beautiful than the pink or the yellow lady's slipper? What more splendid than the speckled red and golden lilies of the field, or the scarlet plume of the cardinal flower? Why may not all these flowers be domesticated in all our gardens?

One of the noblest occupations of the farmer in this commonwealth, is stock-raising. Indeed, it should be the great business within our limits. Lumbering retires from the field as the best materials for manufacturing purposes become more scarce and more costly; and we are fast coming to the conclusion, that it cannot retire as an exclusive, controlling interest, too soon. It seems necessary now, in order that the great resources of the State may be developed, and that the benefits of wealth may be enjoyed by the people generally, to call our young men into the service of agriculture, and to induce them to encamp in hosts all over this broad area, to hold possession of it for the ends of husbandry and all other beneficent, reciprocal and harmonious interests, forever. It is painful to see our grand old forests vanishing, like the grass of a prairie, before an advancing fire, and no adequate recompense for the loss. It is shameful that a sturdy population, so indebted to this region, to its topographical forms, its climate, its intellectual and moral influences, for health, and strength, and nobleness of mind, and goodness of heart, should neglect such ample and beautiful possessions, and let them go to waste. But there is a choice as to what branch of husbandry should be chiefly followed; and as this is made with reference to soil, latitude, and certain facilities, the main interest of the farmer in Maine should be in flocks and herds. Generally, here, the wheat crop is not certain. The potato crop is still extensively lessened by the rot. The crops of rye and barley are but respectable. But our most successful crops are those of hay, oats and Indian corn. There are no bounds nor influences to limit us in the cultivation of these articles. Besides, our pastures are superior in all important particulars,—for uneven surfaces, for slopes and plains, for sunshine and shade, and for brooks and springs. The invaluable nature of these characteristics is seen at once. What, for example, could be mentioned for worth among the essentials of grazing lands, to be compared with the pure water with which our farms abound. Our State is glowing and sparkling in every part with clear lakes. All our townships are threaded with glistening brooks.

and rivulets, and so our aim should be to fill the offices of herdsmen and shepherds.

I long for the day when vast herds of cattle shall graze on these hills; when all these lands shall be alive with horses and sheep. This picture before me, of pastoral beauty, of spring-time verdure, or summer luxuriance, or autumn ripeness, interblended and dotted with the busy life of men and the increasing groups of the noble and beautiful beasts given into the power and management of men, is to me like a vision of prophecy; and while I contemplate it, I confidently hope for and call my fellow countrymen forward to its realization.

You think, perhaps, of the obstacles of winter. But take a second thought. Are there really any serious obstacles in the way of stock-raising, here, in this season? Rather than to complain of the cold and the snow, and of the trouble of gathering our crops into barns, and of housing and feeding our stock, ought we not to consider that the rigor of winter partly occasions our physical firmness and strength, and that we acquire more than enough of profit to ourselves and our property to compensate us for our toil and care? The blessings of good shelter, of comfort and neatness, are enjoyed, where the buildings for man and beast and the garnering of crops, are the necessities of the climate. The best disposition we can make of our principal crops, is to devote and deal them out to the wants of our several kinds of stock. In this process, we do not in the beginning of our operations so quickly turn our produce into money, but we neither impoverish our farms; we do not send off from our farms a great part of the food and nourishment which they require and which is their due; and in the long run we become the gainers in wealth and power. In this method of life, our own condition, our families' condition, the condition of our property, is immeasurably better than if we lived on the banks of the Mississippi, making no use of barns, leaving the cattle exposed to the freezing winds and the blinding storms of the prairies, and losing our own sense of nobleness, comfort and refinement in indolence, carelessness, slovenliness and scorn of economy.

A side-department in farming is that of the dairy. Though but a side-department, it is neither an unessential nor an insignificant one. It is an adjunct of stock-raising, and its usefulness is appre-

ciated in all our homes. So long as milk, butter and cheese remain among the indispensable luxuries of our tables, so long will the art and skill of the dairy be counted as among the noblest accomplishments of our house-keepers, our mothers, and sisters, and daughters, and so long will the dairy be a source of profit to the owners of the soil. I am not sure that the dairy, on some of our farms, is not one of the primary and most profitable fountains of support and income.

Another side-department in farming, is that of the fowls. Eggs and poultry are the results of gathering up the fragments, that nothing be lost, about the barns and in the fields. Turkeys and hens are gleaners on the farmer's domain, and save to him innumerable scattered grains and random morsels, turning them to a good account. I have no definite report at hand by which to make a statement of the amount of money received annually in this State from this department in husbandry, but I remember that it is astonishingly large. I think I have seen it estimated that it is more than sufficient to pay for all the flour brought to us from the West.

Still another side-department in farming may soon be introduced in Maine. I mean that of stocking our lakes and streams with fish. It has been proved by experiments that this work may be done on any of our farms bordering lakes and ponds, or on any watered by cool and unfailing streams or brooks. Certainly, the advantages for this employment in Maine, are very great. And what can be more interesting to the farmer than the developments he may induce, the forms of wealth and beauty he may set in motion, in the clear depths of the pond, or the brook, which is every day under his eye? If he can by an easy art, fill his pond or brook with trout, and thus supply but his own family with one of the most excellent of the articles of diet, he ought to try it. Every farmer having the favorable chances for engaging in it, may often catch the hours, from those which come for repose or amusement, in which to both please and improve himself in this work. In this way, he may add a new feature to the other charming ones of agricultural or pastoral life, and thus make it still more agreeable to the minds of both the old and the young. An effort in this direction would be much better than to ignore all forms of pleasure, or to frown upon the boys because they prefer fishing to shelling corn on rainy days.

There is another thing worthy of the farmer's thought, though it may

not lead him a single day or a hour from his common employments. I allude to the usefulness of the birds, which take up their abode or build their nests in his trees, in his garden, orchard, wood and thicket, every spring, and help him with their work and beauty, and music, till the return of winter. He should welcome these tiny hunters of the atmosphere, and these minstrels of the grove, these fly-catchers, and worm-diggers, these sweet warblers of the morning, the noon day and evening, to his domain, and afford them the protection, and appreciative regard to which they are entitled. Whatever they may take of grain, or fruit, in their excursions about the fields, or from tree to tree, or from shrub to vine, in the garden, they render more than ample remuneration for. It is believed by our wisest orchardists and gardeners, that the ravages of the curculio, and other destructive insects, did not cover a great extent of country till the birds began to vanish before the blasting ban and fire of selfish, short-sighted men, and heedless, wanton boys. So, don't kill the birds. Let old and young on every farm, allow them every privilege they need. I cannot think that a farmer loses any thing of his dignity, or that he wastes his time, when he observes, and leads his children to observe, the forms of the little birds around his home, their plumage, their habits and skill, or when he hears and calls his family to listen to the enchanting melody which they pour from their trembling throats. I am drawn to him as to a man of elevated thought, and benevolent heart, if I learn that he watches fondly for the return of the robin and the swallow; that he knows where the oriole has hung his nest, or that the blue bird has come again to his retreat in the apple-tree's trunk; that he turns aside so not to scare the redstart from the alders by the stream, or the goldfinch from the lilac near his mansion's gate; or that he turns his ear with delight to the voice of the starling in the sun-light of the meadow, or to the notes of the wood-thrush in the shades of the forest.

There may be some men among us, who would not miss the birds, if a pestilence should destroy them all. If so, they are not to be envied for their mental condition or their taste. Insignificant as these little inhabitants and voyagers of the air may be in contrast with the larger and more powerful creatures, the ox and the horse, which we press into our service, not one of them falls to the ground without the notice of God's eye: they teach us as well as prophets,



and apostles, of God's impartial and unchanging providence. And how many would be sad, and feel that the joy of the fields and the woods had departed, that some dark-winged fiend had touched with his wand, all the haunts of the orchards and the gardens, if the sparrows should never sing again near their homes, if the bobolinks should never again sprinkle the air with their merry notes, if forever, henceforth, all the harmony of the ten thousand feathered songsters, should be absent from their homes. There never was a paradise without the birds.

The center of the farm, with reference to which all other parts ought to be disposed, cultivated and adorned, and out from which all good influences ought to flow to consecrate and hallow the other parts, is the house. It may be a cottage, or a mansion; it may be expensive or an unexpensive abode, according to the circumstances of the occupants. As I have already said: it should be a pleasant home, pleasant for situation, pleasant for accommodations and conveniences, pleasant for all its interior arrangements, and pleasant for all its surroundings, and for its decorations, without. But the great thing to be desired, is, that the power presiding in this dwelling, be wise, and noble, and benignant. This is the place where the wife, the mother, is enthroned; where she gives form, and complexion to the moral life of the farm, and by her influence determines whether her family shall live in gloom and discontent, or in sunshine and enjoyment.\* How needful it is, that she should be endowed here, with the highest and finest qualities, that her views of life should be comprehensive and cheerful, and that she should use her influence to effect the best and happiest results. Let her prove to the world, that the farm-house, is not, of necessity, the least furnished of all the abodes of the world, with those particulars of comfort, wisdom and beauty which make a home admirable. Let her present the evidence, in the consequences of her own forethought, endeavor and perseverance, that the farmer's home is the model home, and the best nursery of the State or the Nation.

It is not, or need not be, the doom of those who are brought up under the influence of the farm-house, to be cut off from those privileges and pleasures which make other homes attractive and agreeable. While they perform those several tasks which devolve upon them in their sphere, they may also engage in those useful studies,



and pursuits and amusements, which are apposite and entertaining anywhere and everywhere else. The noblest accomplishments and the most charming graces, are appropriate in all homes. In the farmer's home, they are like jewels in the best and most beautiful setting. They are in harmony with all the grand and lovely surroundings of nature. One likes to be favored with the presence of the prophets and the apostles, when encompassed by the hills and mountains, and the solemn woods; to look into Shakspeare's imaginary worlds, while gazing upon the lakes and streams; to hear old Milton's organ notes, while contemplating the features of a modern Eden; to be moved and lifted, as by a mighty wind of pentecost, by Beethoven's grand, pathetic, unequalled chords, while listening to the harmony of flowing water, waving grain, rustling leaves, and the choirs innumerable of singing birds.

I once saw in Faneuil Hall the great painting, now occupying an honored place in the Capitol at Washington, called THE EMBARKATION OF THE PILGRIMS. What, in the artist's conception, impressed me, most profoundly, was the truly womanly character of the women standing in prayer upon the deck of the little vessel. As I looked at the forms and the faces on the canvass before me, at the light of blended strength and sweetness on those fair countenances, I said, within myself, these were, indeed, more and greater than ladies and queens, and were, indeed, chosen by Providence to be the mothers of a great people.

Whom now should we see in our rural homes, but worthy daughters of those noble women?—noble, because devoted to the best and highest interests, and ever faithful to the principles of truth, virtue and freedom. If we discover in these abodes, women of this noble mould, and of such devotion and faithfulness to the loftiest and most sacred things, we may still hope that our country homes will not lose their chief excellence and their highest charms; and that they will not be forsaken; that forever they will be bright and warm with the beam of womanly dignity, and the radiance of womanly grace, and musical throughout with the voice of love, affection, contentment and happiness.

In conclusion, let me ask you, if you are not sure that your rural homes are in the best locality for attaining good under the nobler and finer influences of nature and Providence? And when you con-

sider that they are governed by matronly wisdom, and that they are adorned by sisterly virtue, do you not see that you can look the world in the face, and answer the question—What constitutes a state? or what is hallowed ground? And when you think of your own land, are you not inspired to sing with the poet Whittier this hymn of love and loyalty?—

“ Land of the forest and the rock—  
Of dark-blue lake and mighty river—  
Of mountains rear'd aloft to mock  
The storm's career, the lightning's shock—  
My own green land forever!

Land of the beautiful and brave—  
The freeman's home—the martyr's grave,  
The nursery of giant men,  
Whose deeds have linked with every glen,  
And every hill, and every stream,  
The romance of some warrior-dream!  
O! never may a son of thine,  
Where'er his wandering steps incline,  
Forget the sky which bent above  
His childhood like a dream of love,—  
The stream beneath the green hill flowing,  
The broad-armed trees above it growing,  
The clear breeze through the foliage blowing.

\* \* \* \* \* If my name,  
Now humble and unwed to fame,  
Hereafter burn upon the lip,  
Like one of those that may not die,  
Link'd in eternal fellowship  
With beings pure, and strong, and high,—  
If the wild dreams that quicken now  
The throbbing pulse of heart and brow,  
Hereafter take a real form,  
Like specters changed to beings warm,  
And over temples wan and gray,  
The star-like crown of glory shine—  
Thine be the bard's undying lay,—  
The murmur of his praise be thine!”

## VIEW AND PLAN OF BUILDINGS FOR A MAINE FARMER.

[For View, see Frontispiece.]

BY MRS. ISAAC W. CASE, KENDUSKEAG.

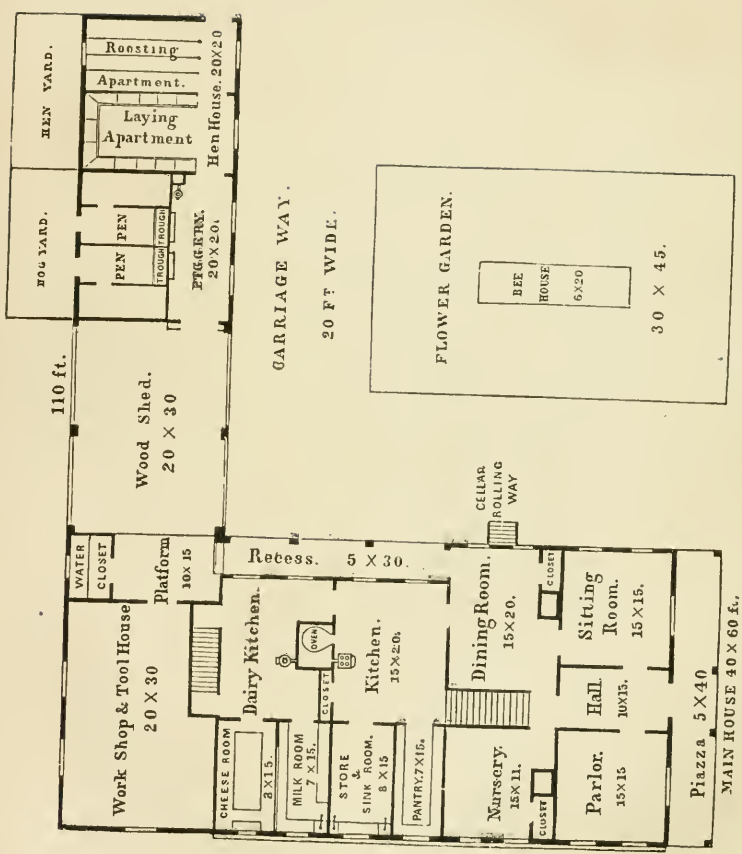
This plan is designed to meet the wants of farmers in Maine, who have moderate sized farms devoted to the usual "mixed husbandry."

The exterior of the buildings is in a plain Gothic style, as seen in the front elevation; the situation is fronting the west, thus giving a sunny side to the greatest number of apartments. The frame *may* be of light timber, covered with jointed boards and battening strips, planed or unplanned, or finished in the usual manner, with clapboards, with trimmings of a plain kind; the roofs are projecting, with a pitch of a little more than forty-five degrees; the chimneys and supporting columns of the piazza and wood-shed, are slender, corresponding with the style.

The interior is arranged for the comfort and convenience of the farmer's family, where the house and dairy work is usually done by the wife and daughters. The well, cistern, wood-house, ice room and cellar, or any out building, may be reached with the fewest steps and least possible exposure.

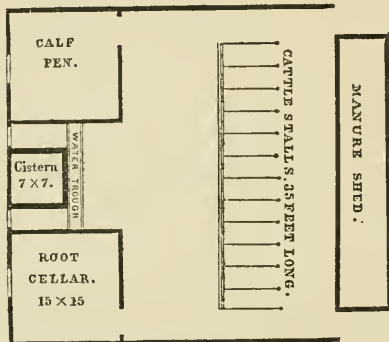
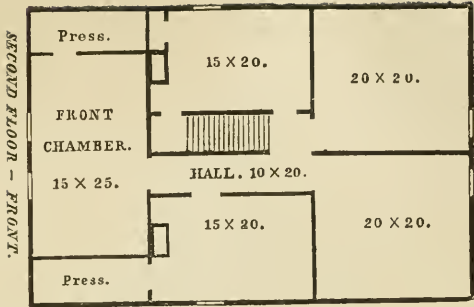
The main house is in cottage form, a story and a half high, with piazzas, one in front and another at the side; the roof has side gables, which light the chambers and give a finish to its appearance. The ground plan needs but little description; it has all the needed rooms, with closets, passages, &c., as may be seen. A few words about the kitchen and dairy rooms may be well, as they are generally considered the most important part of the farm house. The first opens from the rear of the dining-room; it is lighted by two windows on the south side. The chimney is between this room and the dairy in the rear, giving place for a large brick oven and a stove or range; a large store room, with sink and pumps of hard and soft water, and a pantry, each lighted by a large window, open



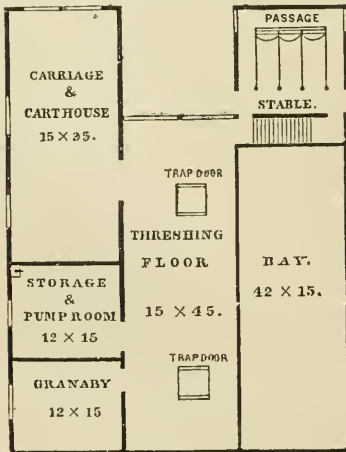


**Plan of Model Farm Buildings for a Maine Farmer.**  
 [For description see page 36.]





UNDERGROUND PLAN OF BARN 45 X 45.



MAIN FLOOR OF BARN 45 X 60

Plan of Model Farm Buildings for a Maine Farmer.

[For description see page 36.]



from this room. The dairy kitchen is of the same size as the main kitchen; it has conveniencies for a boiler or two, and is lighted from the south side. A flight of stairs leads from this room to the ice-cellar beneath, and another over them to the shed chamber; and a door opens upon the piazza or recess near the wood-shed, (this recess in front of these kitchens will be found by the farmer's wife a convenient place for drying dairy utensils, &c.) Connected with this room are a cheese room and a milk room, with windows to the north, the sash of which should be hung so as to swing either out or in, and its place in warm weather to be supplied with a wire gauze; and the doors also should have shutters of the same material, to exclude insects, and at the same time admit the air freely. In the milk room are shelves on each side, and a pump and sink near the window. In the cheese room, the rows of shelves for curing cheese are in the centre of the room, with a passage between and around them, and near the window a table upon which to turn and dress it.

The chamber floor contains five large chambers, with commodious clothes presses; the two middle rooms are lighted by the gable windows.

The large well lighted work-shop, with sliding doors, wood-shed, piggery and henery are contained in a long building, extending across the rear of the house to the northeast corner of the barn. The piggery has convenient pens, and with yards in the rear; the feeding room has a boiler for cooking food, boiling water, &c., and is to be ventilated by the windows on each side. Next comes the laying apartment of the henery, which is furnished with tiers of nesting boxes on each side; a door from this leads into the living and roosting room; the south end of which should either be wholly of glass, or contain two large windows, to attract the warmth of the winter sun.

The barn is high, with underground stalls and a stone basement; the doors are large and move on rollers—a large window over each, for ventilation. In the rear, on each side of the large doors, is a leanto 15 by 15; the south one, as a small stable; the other as an entrance to the carriage house. The threshing floor is in the centre, in which are trap doors for the purpose of letting hay to the stalls underneath. On the right is the bay; on the left is a granary, storage room, in which is a pump, and a large carriage house.

In the underground plan are a number of stalls for cattle, a root-cellar, calf-pen, and cistern and watering-trough, to be supplied with rain water from the eaves of the barn, and lighted by windows in the wall. The space in front of the stalls may serve as a sheltering place for sheep. The space in front of the shed and between the barn and house, may be devoted to a flower or kitchen garden, and a bee-house, with a carriage way between it and the buildings.

P. A. CASE.

OCTOBER, 1857.

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NOTE BY EDITOR.—Mrs. Case has called my attention to two errors in the plans as engraved. 1st, there should be a window in place of the door between the dining room and recess; and 2d, there should be a door leading from the dairy kitchen to the recess.

## ESSAY

On the Intellectual Wants of Farmers, and the best means of supplying them.

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BY MRS. GEO. W. INGERSOLL, BANGOR.

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If we consider the occupation of the farmer, in itself, we shall find nothing in it at war, but every thing favorable, to moral, spiritual and intellectual culture. The works and methods of Nature, ever before him, invite to thought, and favor contemplation. Separated from the crowd of men, his vocation daily leads him out beneath the open sky, and he pursues his tasks under influences which should tend to make him more than other men, refined, thoughtful, and wise. The first man, pure and unfallen, from the hands of the Creator, was appointed to "till the garden," and to draw fresh from the bosom of Nature, a reward which gave dignity to his work. In that most ancient and honorable occupation, he stood, proudly, the "Lord of Creation"—undoubted member of the truest aristocracy, and first order of nobility! But the world has changed since then; and at the present day, the farmer falls below, rather than towers above, the average of men, in other vocations, in mental culture; and this Maine Agricultural Society desires essays upon the best means of supplying his intellectual wants. Some thoughts therefore upon this topic, we propose to offer, for the consideration of the society.

When we would effectually remedy an evil, we must discern its cause. Now, if we look for the cause of the non-intellectual culture of farmers, we shall find it, we believe, all in one word, and that word is *overwork*; and the desirable thing is, to find a way to make a good living by farming without excessive labor; labor which wearies the body too much to make intellectual effort welcome, or which leaves no leisure for its exercise. To get a good living by farming, without working too hard for it, is the very problem which this society in all its departments is endeavoring to solve. For this



end, behold all the improvements in machinery, designed to take the place of human muscles and sinews; and all the results of wisdom and experience collected by its fairs, in order to enlighten the farmer as to the best means of getting the greatest reward for the smallest amount of labor. When machinery and skill shall so far relieve toil, that the body need not be overtaken by farming, and leisure, and wealth, shall flow from the occupation, then there will be little need of specially supplying the "intellectual wants of farmers." The Press is already a giant in the production of intellectual food, and reaches every one who has even but a little leisure and a little money; but, where that little is wanting, as the last too often is with farmers, we do not believe that any system of "farm schools," or "societies for the diffusion of useful knowledge," will effect much in the way of supplying those wants. But while this society in its whole aim designs to supply them, let us consider a part of its work, which it has comparatively overlooked, and which we hope to show, is so important, that until remedied, no intellectual class, as a class, will resort to the cultivation of the soil for a subsistence. We mean the domestic, in-door work of the farmer's house—the *woman's part in the farmer's life*. We trust this society will turn its attention to this portion of its work, which now lags far behind, and like a dropped stitch in a stocking, needs to be taken up and made even with the rest of the fabric. This dropped stitch, of the house and kitchen, is our theme, and we propose to describe the evil, in part, with some of its results, and then to suggest a remedy.

The hard work of the house and kitchen, seems to many an evil of that giant and pervading nature, that complaint appears hopeless, and where no remedy is attainable, to endure in silence, seems the wisest course. But this is an age of progress, and the better way is, to believe no evil of necessity perpetual, but rather to be proclaimed and removed. Particularly, let not the Maine Agricultural Society seek to elevate the farmer and forget the farmer's wife, for the two cannot be separated in culture; for if farmers, as a class, could be cultivated, and farmer's wives remain coarse and ignorant, it could be so only for one generation; and the sons of such mothers would need the work of refining repeated again for them. All efforts, therefore, for the elevation of the farmer, must take in the

whole of his family, in order to have the work either effectually done or promotive of his happiness.

It is a singular fact, that the more enterprising and successful the farmer himself is—the more broad acres he tills—the greater capital he expends upon, and receives from them, the more his wife is usually overworked and overburdened in consequence. The money he is making may relieve his own hands—may purchase the patent mowers and reapers, and hire the extra help when needed, but for his wife's assistance, money will not obtain "help"; and the patent cooks, washers, ironers and menders, are not yet invented, that can be bought. The wife of the poor farmer, who keeps but two cows, and hires no "hands," is a lady of leisure, compared to her who has the responsibility and care, and sometimes all the work to do, of a large farming establishment. Hired help in the house, that will take the care and charge of butter and cheese making, washing, ironing, mending, yeast and bread making, coffee roasting, meat and vegetable cooking, bed making, sweeping, dusting, et cetera, et cetera, ad infinitum, is simply a thing not to be obtained for love or for money. The most that the farmer's wife can do, is to get some uncertain, accidental person, who has not yet found out her way to the factory or the shop, or who perhaps needs to earn a few dollars in somebody's kitchen, before she can obtain a suitable outfit, for situations to which all American girls gravitate, as naturally as office seekers towards a President! Nor is this a fact to be wondered at or regretted; and if we do wonder, regret or complain, it is very certain that we cannot change the matter, at least till we change our kitchens, and make them more agreeable places of resort; for with our present system of domestic labor, our kitchens are simply detestable, and no intelligent girl is to blame for preferring the shop and the factory to them. It would argue little for their enterprise and good sense, if they did not. As it is a well understood fact that foreign service does not leave the cities and the Catholic church, it follows that the farmer's wife has no class from which to draw her help, except a very small and very inefficient one. That it is small, and growing less and less, speaks well for our country, while its ignorance, and general good-for-nothingness, renders it a question with many housekeepers, whether it is best to try to do with, or without it. Energetic and capable women often resolve to do with-

out that help to the body which is apt to prove a sore vexation to the spirit, and keep their resolution till the overtasked frame refuses to answer the demands upon it, and sickness absolutely compels a resort to the alternative—and then, “hunting for a girl,” becomes the hardest task which the farmer finds to do from January to December.

Some wisecracks have said, and will still say, that if hired girls were treated with more social consideration, and as “one of the family,” good service in the kitchen could easily be obtained. But how short-sighted is this reasoning. Would a woman whose cares and labors are sinking her to the earth, depriving her of all leisure for reading, all pleasant recreation, and what is far nearer and dearer to her, the society and tender care of her young children, whom she feels are neglected for the want of a mother’s time—would a woman in such a position, refuse the aid of a faithful girl, because of a point of etiquette? Never, we know, and believe. One instance came to our own knowledge, of a young mother, in the country, whose infant babe required so much attention, that a girl to cook for the “men folks” became imperatively necessary, and was obtained. When the family meal was ready, some one had to stay away and tend baby. This the mother always did; and after the girl had dined, her turn came. Nor was this strange. The girl was not obliged to work out in a kitchen, and the mother knew that her obligation to the girl for coming to help her, was far greater than the girl’s was to her for the wages paid. Why then, should not she take the place of subordinate? Such she was in fact; nor thought of complaining or rebelling; and yet in spite of numerous similar proofs of a subordinate position, on the part of the housekeeper, who *needs* to hire domestic help, we are told by some that the only difficulty in getting good service is, in mistresses (Heaven save the mark!) not knowing how to well treat their hired girls! Knowing how? They have *good reason to try and learn that art*, for to them, no factory or shop opens a refuge, when weary of kitchen toil—no “notice to quit,” when “not suited to their place,” answers for them. Death alone, “settles up their accounts, and the “wages” are not paid this side of the grave!

There is another class of people, who have one stereotyped answer to all petitions for improvement and relief to woman’s labor, and

that is, what "my mother used to do." "She not only did all the cooking and washing, ironing and mending, and dairy work, but spun and wove the clothes we wore, into the bargain." Stop my dear sir, and reflect. Did your mother do all this herself? A generation ago, good, efficient and reliable American girls worked in kitchens, at four shillings per week, the year round. Perhaps your mother had "help" like that; perhaps, too, the habits of living were every way simpler; the house and furniture, smaller and plainer, requiring far less care than now; perhaps a healthier race of men, with more active habits, and less dyspeptic stomachs, than the present, demanded less devotion to the niceties of cooking; and perhaps fashion and custom, with their thousand demands, never proved a *burden to them*. Or perhaps your mother, and all our mothers, did perform Herculean labors, and perhaps the present generation is feeble and weak from that very reason; at any rate, one thing we do know, women now, who are wives and mothers, especially in the country, do often work beyond their strength, and when the cares of maternity are many, and unrelieved, they do go into their graves in consequence. If, worse than this, crimes, which we cannot name, are committed in consequence, by the already overburdened mother, in her despair at the prospect of additional cares, while we can offer no apology for the sin, we can perceive the extenuating circumstances which she offers to her God and her conscience, for her guilt.

Take the "well to do" farmer's wife, in midsummer, when all the hopes of the year may be disappointed, if the kitchen fails of its part in the performance, and let her be, as we know she is at any moment liable to be, left without help; let breakfast, dinner and supper, kitchen and bed chamber, washing, ironing and mending, butter and cheese, all depend upon her single hands, and then add, as sometimes it is added, a sick child, or a crying baby, and own if one *could* be more sorely pressed, than his wife and mother is, through her ambition for her husband's prosperity, and her own sacred maternal instincts?

One evil consequence of this toil on the part of the farmer's wife, operates directly to cut off a great source of intellectual improvement to him, by limiting his hospitality. The exercise of few virtues carry with them more direct profit and pleasure, than that of hospitality. The good old-fashioned open house, and open doors, a gen-



eration ago, could be kept without the sacrifice of life and health, which they at present entail. Now, doors are shut by hearts that would fain keep them open, and it is said that ministers' wives who cannot shut theirs, are being rapidly carried to the grave in consequence. Farmers' wives may shut their doors, and still have enough to do to kill them. Their dearest friend could scarcely be welcomed in haying time, and if one should ever visit them without ascertaining by the latest mail that some kind of a girl was in the kitchen, they would be doing at the best, a cruel favor. Nor is this limitation of hospitality confined to the country and to farmers' wives. The domestic life of the city suffers much inconvenience and loss from the same cause, and pleads along with the country for reform.

We go on now, to what we consider the strongest plea for reform in the work of the farmer's wife, and the one which most affects the whole community and the subject of this essay. It lies in the fact, that this *unrelievable toil on the part of the wife, shuts out the cultivated class of men from resorting to the soil for subsistence.* Said a young and talented lawyer, "I would go on to a farm, in these hard times, and should enjoy it above all things, if I were not afraid that my wife with her young child, would sink under the toil and care that she could not escape as a farmer's wife." Said another gentleman, the other day, "I sold my farm last fall; I farmed it till my wife killed herself with hard work, and then I had to do something else for a living; and yet, I always got the best help for her that I could get." Young men resort to the trades and professions, in choosing their vocations, for they know that intelligent girls who have their eyes open, are more likely to accept their hands in marriage, thus, than if living by the soil. Mothers (themselves overworked) will foster the ambition in their daughters, for a showy, superficial education, that they may marry in a sphere which does not entail the hard work they have themselves endured. Said one, "I would rather follow my daughter to the grave, than see her marry and have the hardships to undergo that I have had." This mother had reared eight children, whose ages were within two years of each other, and her husband's limited means had made the burden of toil so severe, that almost the strongest desire of her heart was to save her daughters from a similar fate, by marrying them to rich men.



If the neglect of the soil, so much regretted by all well wishers to national prosperity, is attributable to the hard work of the farmer's in-door life, then let reform in that direction be attempted. Had man himself been the immediate sufferer from the present awkward system, or rather no system, of domestic labor, the reform would have been attempted and achieved long ago;—but woman, if not by constitutional habit, inclined to endure evils patiently, rather than struggle bravely for their removal, is trained to do so, by all the books she reads, and all the sermons she hears preached. Peculiarly susceptible as woman is, to religious influence, she has seemed to receive from Christianity hitherto, only its lessons of submission to evil, while man has not hesitated to receive the equally important truth that resistance overcomes and conquers it. To man then, we must look, for the chief work in the removal of an evil, which has now become so great, that he must perceive that he too, as well as woman, suffers from it. Woman too, could not, even if desirous, relieve herself, for her faculties have never been trained to invention, nor has she command of capital to make experiments, or even of her own time, if she had the skill to do so. Her own sewing machine even, might have waited till doomsday but for man's invention. Had man stood in woman's place, the reform as I said had long ago been achieved. Before attempting to bridge the Atlantic with lightning, he would have found an easy way to get at his dinner; nor would he have crossed continents with steam, till he had got over the clear starching of his shirt! He would have transmitted his messages by mail, till he had found a wire that would control his baking; and endured the old-fashioned stage coach, till he had ridden his washing day on a rail!

Man applies the system of exchange in, and division of, labor to his work, and when the same is done for woman's, the household will no longer be an especial burden. A great obstacle in applying this, is found in that absurd want of respect for labor in women, which both sexes carry so far, but which woman herself, by precept and example, should endeavor to remove. While women *will* do (with their husband's consent also) ten hours hard work in their own houses, rather than one hour's light labor for a neighbor, and receive money for it, it is difficult to devise a system of exchange of labor, for money is the only convenient representative of it. Still

there are trades which might be established to divide labor, and take from the kitchen its drudgery, so that the overtasked wife and mother could obtain the assistance of an equal and friend in that department, as easily as she now can, in the parlor, at the piano-forte. Other nations have already taken some steps towards this end. In Paris, (France,) no family finds it profitable to have their washing done at home. In Rio de Janeiro, they know how to distribute excellent bread daily, so cheaply, that the poorest families had better buy bread than flour. In Germany, ready cooked dinners are carried around to private dwellings. And we read that in some parts of Europe a joint stock dairy is a successful experiment. Surely, if Frenchmen, Brazilians and Germans, have taken partial steps towards this division of household labor, Yankee energy and skill, with its labor-saving machines, might be expected to go much farther in the same department, when once it attempts it.

Our Creator has so made human beings, that some shall enjoy one kind of work, and some another; but no advantage is taken of this natural difference in the work of the married woman of our land. If she works at all, she must work at a little of every thing, and if not skillful in all the various accomplishments which are required in housekeeping, she must suffer shame and mortification. There are both men and women whom Nature designed for cooks. They possess the accurate eye and hand, to detect color, size and weight; a quick judgment to combine proportions, and a nice alimentary taste to discover a shade of imperfection in the various dishes which the civilized palate demands. Such enjoy cooking, for it is easy for them to cook well; and there are women who have not these qualities in themselves, nor can they develop them in such of their unlucky "help" as have them in a perfectly dormant state, if at all. To such women the cooking of the household is as distasteful as it was to Charlotte Brontë, who with all her talent, and patient, self-denying virtues, declared that she would *not cook* for a living, to whatever straits she might be reduced. Sweeping, dusting, scrubbing and cleaning, as housemaid, the author of *Jane Eyre* could accept, but to cook, she would not! Stern custom says, to the women of New England at least, "cook or die"; and Horace Mann adds, "cook, women, or be guilty of a moral delinquency." As well tell every man to make his own flour, or go without bread.

Since the world has moved on for some time under these rigid rules without any great improvement, we trust that another method may be tried, and that the time will come when instead of each housekeeper's being obliged to attend to a little here, and a little there, from Monday morning till Saturday night, almost dividing her brains into small pieces, along with her work that is "never done," she will find the toil and drudgery so taken out of her house, that her time can (a portion of it, at least) be given to some productive work for which Nature has peculiarly fitted *her*, and which the community willingly accepts, in exchange for that which she dislikes, and cannot perform with success. Why should she feel social mortification at making such an exchange, any more than the doctors who make pills, and the lawyers who make writs, feel it, in exchanging their work? Every one knows that some women are skillful with the needle, and others with the wash-tub; some find bread and coffee-making easy, others can better starch and iron; some enjoy putting rooms, closets, windows, mirrors, stoves, &c., in perfect and brilliant array, while others like better to show their skill in providing for a luxurious table. Some snatch every moment to adorn the person of themselves or family, with a tasteful and well arranged toilet, others are refractory to *all rules*, and *will* read books, good or bad. Since all these things have a place in our civilization, and no preaching will put them down, let us find a method that will take a portion of this toil out of the overburdened housekeeper's hands, and give it to separate trades. Of the many things now done in the house, which might be taken out, and pursued as trades, we will mention a few. First, the washing, ironing, starching, and ordinary mending of clothes. We do not propose here, to go into the details of a systematic laundry, which it is said the Chinese have carried to great perfection; but only to assert, that the waste of time, fuel, human strength, starch, soap and water, now incurred by washing once a week in every family, should, under the advantages which a trade might obtain, with labor-saving machines, ready access to water, room for drying, and so on, enable us all to have our clothes taken from the house when soiled, and returned ready to wear, much cheaper than they are now done at home, and still amply reward the trade. Coffee roasting and grinding should be done by machinery, and in quantities, and we hope a way may be discovered

to give it to us without adulteration. Since honesty is the best policy with milk dealers, it may yet be with many other traders in articles *liable* to be adulterated. Bread making is a chemical process, requiring much skill and time, and yet while we have a trade for making it, we still have to bake our bread in separate panfulls, if we would have it, either cheap or good. It is to be hoped that Burdan's patent oven, which manufactures eight barrels of flour as cheaply as one is done in the ordinary way, will enable us at least to equal the Brazilians in this line. All kinds of pies and cakes ought to be made cheaper and better in large establishments than in our own houses. Nor when we consider the ingenuity which contrived the refrigerator to banish all the discomfort of heat from our summer fare, do we despair of yet seeing some patent boiler that shall traverse the streets, and wash dishes for the year, by contract! A patent sweeper and duster to make its periodical visits to our houses, may yet be forthcoming from the Yankee brain! The enormous difference between the economy of a good American housekeeper; and the ordinary servant obtainable, makes it a matter of individual and national interest to devise a system which shall bring the waste and expense *within* the complete *control* of the owner of the house and table. Now, this is quite impossible where a servant is kept; and gentlemen of moderate families, and means, often say that they think their bills are double with a hired girl from the amount which they reach under their wife's management. *All* will say that the wages of a girl are less than her waste, when the kitchen is left to her; and thus another nation might be fed by ours, if our system of housekeeping could avoid this.

Many improvements which might be devised, must be commenced in the city, and gradually work their way into villages and farming towns; but it is in the latter, that the experiment of the Joint Stock Dairy must commence. A well considered place for collecting the milk from different farms; making it into butter, cheese and pork, and then dividing the proceeds, according to the milk contributed, might prove worthy of the best premium which the Maine Agricultural Society will give next year.

The tendency of the times is towards association and division of labor. The loom and spinning wheel have left the household, and mammoth factories clothe us cheaper and better than the old way

possibly could. Every year brings us improvements in fabrics suited to clothing the human body; but facilities in the art of feeding it are little better now than they were a hundred years ago. Capitalists, and brain-workers, find themselves well paid for their labors in the former line—compassion for woman claims their efforts in the latter. If immigration should happen to cease, the condition of *all* American women would soon be one of “waiting upon themselves,” most literally. And since husband and children will probably *always* need considerable additional service, improvements in the art of serving cannot commence, for the benefit of all classes, too soon.

And in conclusion, we will state, that the design of this essay has been to prove that the best means of supplying the intellectual wants of farmers, will be found in removing those objections to the farmer's life, which now shut out the cultivated classes from his vocation.



## ESSAY

On the Intellectual Wants of Farmers.

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BY EPHRAIM MAXHAM, WATERTVILLE.

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In every pursuit, improvement is the great source of happiness. The man who has accumulated wealth till desire ceases to stimulate exertion, either turns his ambition to another channel, or finds his enjoyment of life daily diminishing. The farmer who has nourished his fields and decorated his buildings till every plan seems complete, if not ready to sit down in the weariness of age under his own vine and fig-tree, at once seizes the idea of selling and buying again, to enter the march of progress on a broader field. No sphere is so humble, no position so high, that its occupant is secure from the alternative of fixing his eye steadily upon the motto, "Onward and upward," or losing it to an indefiniteness that throws it at last darkly to the earth. Money acquired may not, indeed, be lost, and plans executed may not go backward; but both are comparatively worthless when they fall upon the sense and cease to bring happiness. Man's destiny is progress—earthward or heavenward—and it is only in progressive improvement that he can look for happiness.

Here, then, is suggested the necessity of enlisting mind and effort in improvements that embrace the broadest idea of usefulness and permanency; such as shall longest continue to give joy to the heart and quiet and peace to the mind.

These suggestions point us to "the intellectual wants of farmers." Education—self-culture—mental improvement—here is a field more extensive than his broadest acres, and more neglected than his most barren plains; a field that borders nearer his homestead, and promises a richer harvest, than any to which the plow or the sickle have ever been applied. No man cultivates this field under more advantageous circumstances than the farmer. No man gathers a nobler crop in proportion to time and labor expended, or turns it, when

once secured, for a better price. And yet we may look in vain for another class of men who so strangely or so culpably neglect it, or who so emphatically pine in leanness for want of its nourishing fruits. Bringing to his aid the energy and vigor secured by his daily avocation, and looking for guidance, as he constantly must, "through nature up to nature's God," his obvious and blameworthy neglect of this sphere of duty—his want of thrift in this birthright field—is no less injurious to himself, than astonishing to everybody else.

Is it replied that the mind must needs suffer because the farm demands attention? Does the farmer ever argue that the compost heap must be neglected, that time may be gained to attend to the harvest?—or that there is no time to feed the horse or ox, because a hard day's work is before him? It is the farm that suffers because the mind is untilled. Why are our village girls—and in modern times our farmer's girls, too—put to the study of chemistry, philosophy and botany, while the farmers' sons, like the mechanics' apprentices of old, are confined to "reading, writing, and cyphering as far as the Rule of Three?" Is it more important that roses should be trained to grow in pots, than that corn and potatoes should be brought to vigorous growth in the field? What farmer would teach his son to reckon the value of a hog at so much the pound, before that son had learned whether hogs were best fattened on Indian meal or birch bark? Has a knowledge of botany, chemistry, and vegetable physiology a closer relation to working muslin or training children, than to working the soil and training the plants and fruits of the earth?

Who, so much as the farmer, requires a knowledge of these branches of science in his daily business? Would he trust the feeding of his oxen to one who is ignorant, whether their natural food is gravel or hay? or of his horse to the sailor, who ordered him fed with a couple of oats, without knowing whether he could more properly order a dozen or a bushel? The vegetable as well as the animal kingdom is sustained and nourished by appropriate food; and if the farmer would not offer the same kind of food to his hog and to his horse, why should he presume that all the various kinds of vegetables that demand his care require the same nutriment? He only, then, can be the complete farmer, whose acquaint-

ance with these sciences enables him to offer to the plants he would nourish, the kinds of food adapted to their growth.

But education demands the time and attention of the farmer for other reasons. Why does he complain that his interests do not receive their share of legislative attention and protection?—that mechanical and manufacturing interests are protected by tariffs, while those of agriculture are left to sustain themselves?—that the farmer does not fill his proportion of the honorable and lucrative stations created by government?—and that in the social circle the mechanic, or the merchant, or the professional man, or, indeed, all these together, are found standing before him? Does he conceive that social polish, (which is only an inferior part of education,) is preferred to common sense?—or dress and equipage to moral worth? Does he think that a life of idleness and ease is honored over one of industry and toil; or the labors of the head esteemed over those of the hands? He *may* come blindly to these conclusions. He *may* decide that society is thus deeply and fundamentally wrong, and that his chance for ultimate restoration to his just and proper position among his fellow men, is consequently remote in proportion to the magnitude of these errors. It is not that education is more or less respected. It is not that toil and industry are more or less honorable. What is education? It has been defined—and the definition is in one sense most strikingly correct—as the advantage of which man manages, in his course through the world, to gain possession! Advantage over whom or what? Over whom, it may well be asked, but his fellow man! Who, then, but the educated man, should occupy the high places in the earth, and the front rank in society?—or who naturally would secure these places, taking the world as it is?

The farmer says his interests are neglected in legislation. No doubt it is, to some extent, true,—otherwise, why have we ten or twenty medical, theological and legal schools and colleges, to one agricultural? Why should not the farmer expect this neglect? No farmer watches his neighbor's cattle with the same attention he gives his own; and why should the lawyer study to legislate for corn and cattle, when he has more than he can do to hedge and ditch about his own calling, by securing a competent mystification of "heretofore, whereas, and aforesaid," upon the statute book? Why should the

merchant labor to impose duties upon foreign grains, so long as that statute book is not yet half full of acts in addition to acts against hawkers and peddlers? Even the doctor can hardly find time and strength to put down the dreadful quackery that threatens his craft, so that simple minded people may put down the more of his valuable remedies; and the reverend clergy, whom an exacting public has somehow or other always constrained to be pretty well represented in legislative bodies, have always more than they can do to select a candidate to preach the next election sermon, from our denomination! The craft that "feeds all" has no place there; or if, to use its own phrase, it shows a "small patch," the season of "short feed" is sure to find the "bars down," and when the *yeas and nays* are called, upon questions that bear upon the farmer's interests, where do these interests go to? Where the anti-slavery petitions used to go—under the table. Lawyers, doctors, clergymen, merchants, mechanics, all could not save them. Did they try?—would they naturally try? Just as the constable tries to catch the man who is found running away from the poor-house.

But how naturally the question suggests itself,—Why is not the farmer there to attend to his own interests? What has become, in this most democratic age, when nothing is lacking but lungs to make all men democrats—what has become of the favorite motto of all men and all parties, "The greatest good of the greatest numbers." Can this give no protection to the farmer? It gives the humblest Irishman, if he be a voter, "two dollars a day and roast beef."—Can't it save the sturdy farmer from the calamity of "sheep's head and pluck." Are three quarters of the "bone and muscle of community" unable to protect themselves against the other quarter? Are these three quarters asking protection, and complaining to each other, and to the other quarter, that they can't get it? Who does not impulsively exclaim, Farmers, protect yourselves!

But we must press this question—as the good surgeon presses the probe,—Why does not the farmer, in this land of freedom and equal rights, legislate for himself? Does he lack any of the natural faculties necessary to make a legislator? Has he less common sense—that most necessary constituent of the man—than the professional man or the mechanic? We tell you he has more! The

farmer would not claim this, and we would not like to have him claim it—but yet it is true. For with more constitutional vigor and better bodily health, his natural faculties—among which the most natural is common sense—have a better growth and greater strength. Ask your learned physicians if it is not so. But what is common sense, do you ask? What is education? Is common sense education; or is education common sense? Neither of these—and yet how beautifully do they harmonize in rendering man the noblest sample of the work of God! What are the trunk and branches of the tree, without the leaves and blossoms? Just what common sense is without education. What are the leaves and blossoms without the trunk and branches? Just what education is without common sense. The trunk and branches are indeed a tree, but destitute of beauty, or the power of growth; while the leaves and blossoms are devoid of power either to sustain themselves or produce their natural fruit. Common sense is to education what the stream is to the machinery; the latter may be complete in itself, but its power for usefulness is wanting.

But there seems to be little need of argument or illustration upon this point. Who can doubt that we may much more safely leave the farmer to his own conclusions? He cannot fail to see, that in order to legislate for himself he must needs be qualified for legislation. And to apply legislation to the advancement or protection of his own peculiar interests, he must be educated in the nature of these interests. Does the clergyman legislate effectually for the protection of the Sabbath, without first learning that the Sabbath was made for man, and not man for the Sabbath? Or does the physician legislate for the security of his profession, without ascertaining in the commencement whether quackery operates to his benefit or his detriment?—or whether he desires to provide by statute that men should swallow more or less medicine? Certainly not. And how can he know the wants of his profession in this respect, if he is ignorant of the profession itself? The more thoroughly he is educated in all its principles and characteristics, the less occasion he will see for asking any other protection. Just as we believe that the great and honorable and natural profession of agriculture, when



pursued in the true light of science, as God opened the way for its pursuit, will stand in need of no protection but that Divine protection promised from the beginning of the world.

We would be understood, then, to assert that the farmers, more than any other class of men, stand in need of education. Not that they need a particle more of it than other men, or classes of men; but that having now less of it, in proportion to their natural wants, they have greater need that the school-master should go among them.

Here, we have occasion to inquire what is the education to which we refer? Shall the farmer be put to the study of the dead languages? Shall he be set to read Horace, and Virgil, and Cicero, and a multitude of classic authors he never heard of, in Greek, and Latin, and Hebrew? Just as soon would we advise him to feed his milch cows on rye-straw; which, though it might be better than to let them stand shivering in idleness on the north side of the barn, would be a bad arrangement for the milk-pail, or the fatting calf. If the farmer could study nothing else, we would set him to searching out the mysteries of heathen mythology through the musty channel of Greek and Latin; at least sooner than to see him driven to the too common resort of "whistling as he goes for want of thought." Just so we would set the idle boy to hunting for white mice, sooner than see the devil employ him about something worse. The farmer is emphatically a utilitarian; and we would lead him in this his natural channel to his heart's content. We would educate him in nothing that does not directly touch his purse-strings or his heart-strings. He should by no means become a scholar, in the popular meaning of the term; but an educated farmer—educated expressly for the farm, and in the science and mystery of farming. And while we should thus make him an educated farmer, we should find we had also made him an educated man—educated not precisely like all other men, but to mingle with and act his part among all other classes of men. We would educate him in chemistry, not to enable him to detect the presence of prussic acid in the human stomach; or to separate iron from blood, or sugar from paper-rags. All these things might indeed result, but they would not be the object aimed at. He should study it in its relation to the analysis of soils, and to everything else in any way associated with the nourishment of

animal or vegetable life. He should study animal and vegetable physiology, as the mechanic studies the character of steam or the laws of gravitation—not that he may promulgate new and learned theories, but that he may construct his machine to take advantage of these powers. He should measure up the results in bags, or weigh them out in pounds to the butcher.

He should study astronomy so far as necessary to his calling or the natural relations of life, and leave the rest to the hunters of new stars at Cambridge. He should study political economy enough to satisfy him whether “ad-valorem duties” were more important than the great duties of Christianity, or would operate upon his own interests favorably or unfavorably;—and politics, to be able to tell—what many learned men seem not to know—whether corn and potatoes flourish as well under a democratic as a whig administration. Beyond this, on this last point, he might as well remain in all the ignorance that characterizes many noisy politicians, as to take the highest degrees in the modern political schools.

We are aware that this plan of educating the farmer, merely as a farmer, may hardly give him confidence to regard himself as standing among educated men. But we ask him, is the physician educated in theology?—or the lawyer in medicine?—or the clergyman in civil law? And yet we have our learned ministers, and lawyers and doctors. Can Henry Ward Beecher solve the deeper questions of mathematics?—or George Evans rehearse the Westminster catechism?—or the learned Dr. Malcom tell you how many grains of mercury it takes to make a dose of blue pills?—or, indeed, can all these learned men together inform the young farmer how many bushels of oats he should sow to the acre? Still we do not doubt that they are learned men. Each is learned—educated—in his own particular calling, but not necessarily in any other.

Is it not as much a part of education to be able to tell how much gypsum may be judiciously applied to a particular soil, or what kind of manure is best adapted to nourish particular crops, as to know how many grains of opium will put a man asleep, or how many drops of prussic acid will kill a dog? Is it not as much a part of education to understand the constitutions and diseases of animals as of men? True, one concerns only dollars and cents, while the other involves human life; but otherwise, science is on

the side of the veterinarian, who has to learn by study and observation many things that the regular physician can ascertain by simple question and answer.

Similar comparisons might be made with all the so called learned professions, and with every branch of science. It is the utility of these studies that should give them dignity and render them honorable among men. Quackery in the physician ranks with quackery in the pulpit, only as the loss of life compares with the loss of the soul. Quackery in law, quackery in the arts of life, and quackery in agriculture, are alike the same thing—quackery. The physician who has but a single remedy for all human disease, is no more a quack than the farmer who fancies all the diseases of his domestic animals located in the end of the tail. So the milliner or the tailor, who aims to improve the human form divine by converting grace into deformity or proportion into disproportion, stands side by side with the farmer who cruelly aims to improve nature by shearing his horse, or teaching his tail to point upward instead of downward. True, genuine science, whether in the study, in the shop, or on the farm, alone is honorable. And who, we ask, can make those branches of science that adapt themselves to agriculture more serviceable to mankind than the farmer?

“The advancement made in other sciences,” says a late writer, “while agriculture has been comparatively stationary, are so many evidences that it, too, must have its turn—and these very improvements in other sciences are but preliminary and contributory to it. Of geology, mineralogy, chemistry, botany, vegetable physiology, entomology and natural philosophy, the ancients were comparatively ignorant. The great attainments which have recently been made in these sciences are all so many powerful and natural auxiliaries, soon to be collected and combined in aid of the progress of agriculture. The great laws of nature are still and ever the same. It is man’s knowledge or understanding of them alone that changes. Life and death, growth and decay, formation and decomposition, are still and ever going on; and nothing changes but man’s apprehension of their processes, and his power to apply them to useful and profitable results. The means open to our use are contained in the whole laboratory of nature, and the power to use them is measured only by our acquaintance with her laws.”

No pursuit demands more scientific learning, or affords wider scope for all the powers of discriminating minds, than that of the husbandman; and it is a great and poisonous error to class his calling among those which need but little education on mental acumen. Chemistry would teach him to analyze the soil he tills and the crop it produces; telling him how to supply what is deficient or reduce what is redundant. Zoology and entomology would give him the mastery over the countless tribes of insects that annually prey not only upon the vegetable but upon the animal kingdom; revealing their nature and habits, and suggesting antidotes for their ravages. Animal anatomy and physiology would aid him in providing for the comfort and nourishment of the animals he keeps, and in guarding them against the diseases and injuries to which they are so constantly exposed. These branches of science, to which many others might be added, emphatically belong to the farmer. They were given him in Eden by the Being who assigned him his pursuit, and he will be held accountable for the improvement made of them.

The last half century has been more prolific than any other age of the world, in plans for the advancement of agriculture. Its steady and healthy progress during this period, and the numerous valuable inventions and discoveries secured, emphatically mark this as the Golden Age of agriculture. Its impulses are all "onward and upward;" and in proportion to its progress, is its advancement in the esteem and honor of the world. The great motive power to this result is education. The philanthropist urges it upon all; the statesman advocates it as the corner stone of political safety; and the merchant marks it as the basis of all financial prosperity. But not till the farmers appreciate its importance to their own interests will they become an educated class. This they will do only when the kind of education proposed is adapted to their pursuits and interests. Then study will daily be enlivened by proofs and illustrations, and courage will be drawn from increased crops and happier homes. A nation is not born in a day, nor will this great object be accomplished in a year. Its progress will continue to be slow, but sure. The means of education are at every door and around every fire-side. Only a desire for it is wanting, and this must come through the channel of interest. In this direction it comes to all other classes, and why not to the farmer? Let him find education profit-

able, and he will resort to it as readily as to a patent plow or an improved breed of cattle. To this point, then, let his eyes be opened; not necessarily by any new and definite plan, but by the thousand culminating processes already operating to convince him that education, and that only, can restore him to the position originally designed for him—the first and most honorable, the happiest and most desirable, known among men.



## FARM ACCOUNTS. ESSAY AND PLAN.

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BY F. W. PITCHEER, BANGOR.

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In a system of accounts for any pursuit, the object sought is the simplest method or arrangement by which the condition of the different branches of that business may be shown in detail at a glance.

The farmer needs this and more. He is daily applying and testing the principles of a science, and wishing to pay the debt which every man owes to his profession, he will require that every day's experience be carefully noted with practical observations on the same; for to be of any authority, he well knows that his tests must carry with them the time, the manner and the result. He will also require a detailed account of his farm expenses and his farm income, whether it be from his stock or from his grain or other crops.

To facilitate the noting of such experience, together with a statement of daily business transactions, I would recommend the following form, (a specimen of which is annexed.) Upon the left hand side of the page I would line off a margin for weather indications, as by thermometer or otherwise. To the right of this line I would have the journal or diary, and I would have it zealously filled with the working of different theories in regard to my pursuit—with the management of stock, of orchards, of manures, &c., together with all business transactions. All contracts for labor or otherwise I would have written here with an acknowledgment of the same by the contractor's signature. Moneys paid I would also have the receipt of, acknowledged here if possible with the signature of the person to whom paid. This diary to its right would have its column for dollars and cents—(Thus far differing not at all from the form of the simplest journals now in common use.) To the right of this column for dollars and cents I would have a space for references to ledger page; and beyond this space another column for dollars and cents. This last column being for the cash account kept in this manner, at the

head of the page in this column I would place the amount of cash on hand (brought from the foot of the page preceding,) and such items of cash stated in the journal as being paid out I would deduct in this column (off against the journal entry,) from the amount of cash on hand, while such amounts as are received should be added to the amount, thus showing in this column at all times the amount of cash on hand.

As to ledger accounts, besides personal accounts, I would have an account with the farm—an account with stock—an account of the amount of the yearly crops—an account with the orchard—an account of family expenses, and an account of notes due to and from me.

The farm account should contain all expenses of the farm excepting such as really belong to stock or the orchard account; also all receipts excepting also receipts for stock or from the orchard.

The stock and orchard accounts should contain their own expenses and receipts. The account of yearly crops should be simply a statement of the amount of crops harvested, while the family expense account and the notes account should be as their names import.

(1)

## FRANKLIN FARM, September 1st, 185-.

(125 acres)

FRANKLIN FARM contains about one hundred and twenty-five acres of land, forty acres of which are tillage; nearly sixty acres pasturage, and the balance is an old growth of hard-wood. Besides this, there are connected with the farm two meadows, one of ten, the other of fifteen acres.

The buildings are a dwelling-house with an L and wood-shed—a carriage-house—a cider-mill (connected with which is a hog-pen and a henery,) and two barns, one of which (that built in 185-) has a good cellar for vegetables and manure. All the buildings are in good condition.

The farm fences are, for the most part, nearly new. The old are in good repair. The greater portion of both old and new, is of cedar-rails with yoked stakes or posts.

The original cost of the farm to me was eleven hundred dollars, (see deed of purchase on file or recorded in Penobscot Registry, vol. 89, p. 71,) but for my farm account I shall charge the present assessed value. A statement of which, together with a statement of implements, of stock, of crops gathered, as also for an account of debts or liabilities and of such amounts as are due to me, see below.

That I may, after any lapse of time, (more or less,) be able to show the location of any piece of land referred to in this journal, I have marked off my farm into divisions, (five in number.) The first division commences at the road in front of the house (the southern end of the farm) and extends back on the line twenty rods. The second follows also extending twenty rods, as does the third, the fourth, and the fifth—beyond which is the wood-lot. Each division occupies the entire width of the farm and has corner marks on the farm line.

Cash.

( 2 )

FRANKLIN FARM, September 1st 185-, (Continued.)

Valuation of Farm, Farming Imple- ments, &c.			
Franklin Farm, including buildings, meadows, &c., . . . . .	\$1,500 00	} Farm, page 1.	
Farming implements, carts, wagons, plows, &c., . . . . .	300 00		
<i>Stock.</i>			
Two horses, . . . . . \$150	300 00		
Two yokes of oxen, . . . . . 150	300 00		
One yoke of steers, bought of Perley,	137 50		
Two pure blood Durham cows, 100	200 00		
Six heifers, . . . . . 25	150 00		
Six calves, (1 year old,) . . . . . 12	72 00		
Forty sheep, . . . . . 2½	100 00		
Two colts, (2 years old, ea.,) . . . . . 75	150 00		
	\$1,409 50	Stock, page 2.	\$117 60
Cash on hand this day, \$117 60			
Account of notes in hand this day, viz. Wm. P. Jones, dated June 6, 3 months, to my order, . . . . .	129 00	Notes due to me, page 6.	
“ Ellis Webb, dated June 19, 6 months, to my order, . . . . .	86 73	“ 6.	
“ F. J. Cobb, dated Aug. 17, 4 mos., to my order, . . . . .	79 10	“ 6.	
“ Abel Foss, dated Aug. 13, 1 mo., to my order, . . . . .	41 10	“ 6.	
Amount due from me, viz:			
To John Adams, for labor to this date, from 21st July, 1 mo., 10 ds., (eh. same am't to farm ac.,)	29 50 29 50	John Adams, page 8. Farm, p. 1.	
Account of notes due from me, viz:			
Order of William Ellis, dated July 8, 2 months, . . . . .	78 00	Notes from me, page 7.	
“ John Harris, dated August 1, on demand, . . . . .	17 00	“ 7.	
“ F. Scott, dated August 10, 7 months, . . . . .	69 50	“ 7.	
“ Benj. Goss, dated Aug. 10, 1 month, . . . . .	47 21	“ 7.	
Amount of hay in the barns, all of this year's crop, 70 tons, . . . . .		Crops, p. 3.	

## FRANKLIN FARM, September 1st, 185-, (Continued.)

WEATHER.	Cash on hand, forward,			\$117 60
Quite mild.	Commenced plowing the easterly hf. of div. 3. The soil is a russet mould. I am generally in favor of deep plowing excepting where the upper and lower soil appears to be the same, when I think it hardly worth while to exchange the soil which has been enriched for centuries back, for that which is less rich.			
Still Pleasant.	<i>Thursday, Sept. 2d, 185-.</i> Engaged William Philips, of this town, to labor on the farm two months, commencing to-day — wages twenty dollars per month. <i>Wm. Philips.</i> Sold for cash the Perley steers,	150 00	Wm. Philips, page 8. Stock, page 2.	150 00 267 60
Cloudy, threatening a storm.	<i>Friday, Sept. 3d, 185-.</i> Sold in Bangor this day, 40 bushels white beans, \$1.75  Bought for family use, 10 yds cassimere, \$1.25, 12 50 do. do. 20 yds. sheeting, 9c. 1 80	70 00  14 30	Farm, page 1.  Family, page 5.	70 00 337 60 14 30 323 30
Rainy.	<i>Saturday, Sept. 4th, 185-.</i> Paid John Adams on account of labor, ten dollars, Received above amount, <i>John Adams.</i> The plowing on div. 3, still continues.  <i>Monday, Sept. 6th, 185-.</i> The weather yesterday was damp and cloudy—to-day it has not much improved. John Cabott has this day agreed to ditch the small meadow, as follows, viz.: Commencing at the brook, dig four ditches parallel and easterly to four stakes which are driven into the margin of the meadow. Said ditches to be two and one-half feet deep; four feet wide at the top and one foot wide at the bottom, and to be asunder five rods. The said ditches will measure 56 rods, which is the sum of their lengths; for the digging of which I promise to pay him, the said John Cabott, upon the completion of said ditches, at the rate of (60 cents) sixty cents per rod. The ditches are to be finished by the 10th day of October next. <i>John Cabott.</i>	10 00	John Adams, page 8.  John Cabott, page 8.	10 00 313 30



( 4 )

FRANKLIN FARM, Tuesday, Sept. 7th, 185-.

WEATHER.	Cash on hand, forward,			\$313 30
Fair.	Bought from a drove, 10 calves, price \$7. All about four months of age and of native breed, but of good size,	70 00	Stock, page 2.	70 00
				243 30
Very pleasant.	Wednesday, Sept. 8th, 185-. Threshing of grains commenced to-day. The red winter wheat from the southwesterly quarter of sec. 2, does not yield as I have expected. I shall hereafter be more particular in the preparation of the soil for the seed, and the seed itself. During the coming winter I hope to be able to examine into and compare the experience of others in raising the different kinds of wheat.			
Mild, with clear sky.	Thursday, Sept. 9th, 185-. Sold three fattened heifers to William Jacobs, \$30 each, Received his note for the same, 3 mos. from this day, and interest, Received of Wm. P. Jones the amount of his note, due this day,	90 00 91 39 129 00	Stock, p. 2. Notes, p. 6.	129 00
	The threshing still continues. A small field ( $\frac{1}{2}$ acre) of wheat in the northeasterly corner of div. 1, gave a good yield, which I attribute mainly to a plentiful supply of lime. To-day finished plowing the field in div. 3, which was commenced the first day of this month.			372 30
Chilly, with wind W. S. W.	Friday, Sept. 10th, 185-. Paid John Adams twenty-four dollars, being am't to bal. labor to this date, Received as above, John Adams. John Adams, Cr. for labor from Sept. 1st, not before credited, Ch. Farm same am't, Paid my note given in favor of Wm. Ellis July 8th, 2 mos., (cash,)	24 00 4 50 4 50 78 00	John Adams, page 8. John Adams, page 8. Farm, p. 1. Notes, p. 7.	24 00 348 30 78 00
				270 30
Cloudy, with some rain.	Saturday, Sept. 11th, 185-. Sold in Bangor, to Shaw, Tyler & Co., 60 bu. oats, 50c, (cash), Paid cash for shoeing horse, 75c. " " straw cutter, \$5.00	30 00 5 75	Farm, p. 1. Farm, p. 1.	30 00 5 75
				294 55

(5)

FRANKLIN FARM, Saturday, Sept. 11th, 185-, (Continued.)

WEATHER.	Cash on hand, forward,			\$294 55
	Had the pleasure of receiving from J. Richardson, Jr., of Mass., a specimen of Green Gage plums, with an account of growing, &c. Paid Benjamin Goss the am't due him Aug. 10, 1 month,	47 21	Notes, p. 7.	47 21
Fine.	<i>Monday, Sept. 13th, 185-</i> . The weather yesterday was uncommonly fine. The muck which was first thrown out of the ditches, being now somewhat dry, I shall commence to-day to haul to the barnyard for the compost heap.			247 34
Warm and pleasant.	<i>Tuesday, Sept. 14th, 185-</i> . Paid cash for 2 M. bricks, \$5, 10 00 " for 2 casks lime, 90c., 1 80	11 80	Farm, p. 1.	11 80
	being to enlarge the room in the barn cellar for the reception of such roots as are intended for the stock during the winter.			235 54
Still pleasant.	<i>Wednesday, Sept. 15th, 185-</i> . Finished threshing yesterday, and the result is as follows, viz : Malaga wheat, 3 acres, 2½ bu. sowing, (SW qr. div. 2,) 53 bu. Scotch rye, 1 ac. 1½ bu. sowing, (NE part div. 1,) 17½ " White oats, 4 acres, 16 bu sowing, (westerly half div. 3,) 147 " Next season I hope to be able to refer from the entry of the result of threshing, back to the time and manner of preparation of soil and seed.  Paid John Harris my note, Aug. 1, on demand, and interest,	17 12	Notes, p. 7.	17 12
	<i>Thursday, Sept. 16th, 185-</i> . Sold for cash, 20 bushels cooking apples, 40c, 9 00 do. do. 10 bushels Baldwin do., (nice,) \$1.00, 10 00	18 00	Orchard, 4.	18 00
	I am fully convinced that the orchard should received its proportion of manures. Rotting leaves, the scrapings of the hen-house, &c., is better than stronger manures. Received of Abel Foss, the am't of his note due this day,	41 10	Notes, p. 6.	41 10
				277 52

( 6 )

FRANKLIN FARM, August 18th, 1854.

Cash on hand, forward,

Have sowed under furrow (leaving surface rough) one acre of Pertfordshire red wheat ( $2\frac{1}{2}$  bu. to the acre) on clay soil. The first plowing and sowing being done on the same day. The seed was carefully washed and soaked in lye twelve hours before sowing.

Cost of plowing, sowing, &c., \$3 00  
 " seed,  $2\frac{1}{2}$  bushels, 5 00

\* \* \* \* \*

September 3d, 1855.

The Pertfordshire red wheat which was sown on the 18th of August, one year ago, (for preparation of soil, seed, &c., see entry under that date,) was threshed to-day, and the yield from  $2\frac{1}{2}$  tons (of straw) harvested, is 21 bushels.

21 bushels.

## (LEDGER.)

(1)

## FRANKLIN FARM.

185-.			185-.				
Sep. 1,	To Farm and farming implements,	2	1,800 00	Sep. 3,	By 40 bu. white beans sold,	3	70 00
" 1,	" John Adams, labor,	2	29 50	" 11,	" 60 bu. oats sold,	4	30 00
" 11,	" " "	4	4 50				
" 14,	" shoeing horse,	4	5 75				
" 14,	" exp. barn cellar,	4	11 80				





( 3 )

## YEARLY CROPS.

			185-		
			Sep. 1,	By Hay, 70 tons,	2
			" 15,	" Malaga wheat, 53 bushels,	5
			" "	" Rye, 17½ bushels,	5
			" "	" Oats, 147 "	5

( 4 )

ORCHARD.

			185- Sep. 16,	By sold 30 bushels,	5	18 00
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*FAMILY EXPENSE ACCOUNT.*

185- Sep. 3,	To Cloths,	3	14 30				
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(6)

NOTES DUE TO ME.

185-				185-			
Sept. 5,	Wm. P. Jones, June 6,	2	129 00	Sept. 9,	By Cash,	4	129 00
	3 months,						
	Ellis Webb, June 19,	2	86 73				
	6 months,						
	F. J. Cobb, Aug. 17,	2	79 10				
	4 months,						
	Abel Foss, August 13,	2	41 10	Sept. 16,	By Cash,	5	41 10
	1 month,						
Sept. 9,	Wm. Jacobs, Sept. 9,	4	91 39				
	3 months,						

(7)

## NOTES DUE FROM ME.

185-	Notes paid.			185-	Notes given.		
Sep. 11,	To cash p'd Wm. Ellis,	4	78 00	Sept. 1,	Wm. Ellis, July 8, 2 m.	2	78 00
" 15,	" " John Har-			" 1,	John Harris, Aug. 1,		
	ris, with interest,	5	17 12		on demand,	2	17 00
Sep. 11,	To cash paid B. Goss,	4	47 21	" 1,	F. Scott, Aug. 10, 7 m.	2	69 50
				" 1,	Benj. Goss, " 1 m.	2	47 21



( 8 )

JOHN ADAMS.

185- Sep. 3,	To Cash,	3	10 00	185- Sep. 1,	By labor to date,	2	29 50
" 10,	"	4	24 00	" 10,	" "	4	4 50

WM. PHILIPS.

185- Sep. 2,	Agreement to labor,	3					
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JOHN CABOTT.

185- Sep. 6,	Agreement to ditch meadow,	3					
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## ESSAY ON FARM ACCOUNTS.

BY J. M. CARPENTER.

The most correct mode of keeping accounts is by double entry, especially if more than one kind of business is followed by the same person or firm. If a farmer connects with his farm another, or various kinds of business, as is frequently the case, such for instance as shipbuilding, manufacturing, lumbering, brickmaking, &c., this method should be adopted.

As many persons who are engaged in business do not understand this system, and if they did, would not devote the time necessary to carry it out fully, and as it is very important that some more simple and expeditious method should be adopted generally, especially by farmers, the undersigned takes this opportunity to recommend a very simple mode, which he will endeavor to describe.

Take an inventory of all your estate, both real and personal. If you have more than one farm, or separate piece of real estate, with which you wish to keep an account, place them separately in the inventory, and designate each by some name or number. The "live stock," "farming tools," "carriages and harnesses," "household furniture," and "produce and provisions" on hand, should also be placed in the inventory separately.

Make a list of the amount that may be due you, either by note or account, and also of your debts, if you have any.

Open an account with each inventory or separate piece of real estate, also with live stock, household furniture, carriages and harnesses, farming tools, cash, and "general expenses." To this latter account, charge the amount of produce and provisions on hand. If you wish to keep an account with any experiment, such as draining, or clearing land, cultivating any particular crop, rearing different breeds of cattle, or with any one field, person, &c., a separate account should be opened, and all the items of cost and expense charged

to the account. Credit the various accounts with the income, crop produced, or improvement, as the case may be, and the difference will be the profit or loss.

Enter in the day-book every transaction. If you purchase any thing, set it down in this book against the proper date, and if you sell, do the same, mentioning the article sold or bought, and the amount paid or received. If you receive or give a note or any thing but cash in payment, mention that fact. This book should be made a kind of journal as well as account book, furnishing you with the data by which an accurate account current *could* be made, even if the various accounts were not posted in the ledger, but by carrying the several items to the ledger that have been entered during the year, and balancing the books, the amount of profit or loss can be correctly ascertained on each separate account, or on the whole, collectively.

The following entries will perhaps explain this mode of keeping farm accounts, better than the above description.

PITTSSTON, September, 1857.

(DAY BOOK.)

1857.		PITTSBURY,		
Jan. 1.		Having commenced farming, and being anxious to know whether I lose or gain in the business, I have determined to keep an account of the same, and the following is an inventory of my property this day, viz:		
		<i>Real Estate.</i>		
1.		125 acres of land and buildings thereon,		\$2,500 00
		<i>Personal Estate.</i>		
		1 mare,	\$100 00	
		1 1 year old colt,	50 00	
		1 yoke oxen,	150 00	
		1 " 3 year old steers,	90 00	
2.		1 " 1 " " "	40 00	
		4 cows,	150 00	
		4 heifers,	75 00	
		12 sheep and 2 hogs,	50 00	
		Poultry,	10 00	
				715 00
3.		Farming tools, &c.,	200 00	
4.		Carriages and harnesses,	300 00	
5.		Household furniture,	400 00	
6.		Hay and other produce to sell, not needed to winter stock, now on hand,	150 00	
				1,050 00
6.		Provisions on hand for family uses,	200 00	
7.		Cash,	150 00	
8.		Notes payable,	300 00	
9.		Notes receivable,	200 00	
7&9.	Feb. 2,	Rec'd on note,	150 00	
7&6.	9,	Sold 10 bush. potatoes, 50c.,	5 00	
7&6.	16,	" 30 " oats, 45c.,	13 50	
7&6.	17,	Bo't sugar, coffee and tea,	5 50	
7&6.	24,	Paid for Maine Farmer,	1 75	
7&6.		" labor cutting wood,	3 50	
	Mar. 4.	Rec'd balance note,	50 00	
7&9.		" interest on same,	1 25	
7&8.	18.	Paid note,	300 00	
6.		" interest on same.	3 90	

## (LEDGER.)

(1)

DR.

## REAL ESTATE.

1857. Jan. 1.	To 125 acres of land and buildings thereon,	\$2,500 00
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(2)

DR.

## LIVE STOCK.

1857. Jan. 1.	To amount inventory this day,	\$715 00
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(3)

DR.

## FARMING TOOLS.

1857. Jan. 1.	To amount inventory this day,	\$200 00
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( 1 )

CONTRA.

CR.

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( 2 )

CONTRA.

CR.

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( 3 )

CONTRA.

CR.

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(4)

Dr.

*CARRIAGES AND HARNESSSES.*

1857. Jan. 1.	To amount inventory this day,	\$400 00
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(5)

Dr.

*HOUSEHOLD FURNITURE.*

1857. Jan. 1.	To amount inventory this day,	\$400 00
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(6)

Dr.

*GENERAL EXPENSES.*

1857. Jan. 1.	To hay and other produce,	\$150 00
	“ provisions,	200 00
Feb. 17.	“ paid for sundries,	5 50
24.	“ “ do.,	5 25
March 18.	“ “ interest,	3 90

(4)

CONTRA.

Cr.

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(5)

CONTRA.

Cr.

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(6)

CONTRA.

Cr.

1857.		
Feb. 9.	By 10 bush. potatoes, sold 50c.,	\$5 00
16.	“ 30 “ oats, 45c.,	13 50
March 18.	“ rec'd int.,	1 25

(7)

Dr.

CASH.

1857.		
Jan. 1.	To amount on hand this day,	\$150 00
Feb. 2.	“ rec'd on note,	150 00
9.	“ “ for potatoes,	5 00
16.	“ “ for oats,	13 50
March 4.	“ “ on note,	50 00
	“ “ int.,	1 25

(8)

Dr.

NOTES PAYABLE.

1857.		
March 18.	To paid note,	\$300 00

(9)

Dr.

NOTES RECEIVABLE.

1857.		
Jan. 1.	To amount due this day,	\$200 00

(7)

CONTRA.

Cr.

1857.		
Feb. 17.	By paid for sundries,	\$5 50
24.	" " do.	5 25
March 18.	" " note,	300 00
	" " int.,	3 90

(8)

CONTRA.

Cr.

1857.		
Jan. 1.	By amount due this day,	\$300 00

(9)

CONTRA.

Cr.

1857.		
Feb. 2.	By amount paid this day,	\$150 00
March 4.	" " do. "	50 00

## ESSAY

On the improvement of rough hill pastures not easily cultivated.

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BY G. C. WATERMAN.

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The principal obstructions to the cultivation of hilly pastures are too steep elevation of hills, rocks and ledges; obstructions which cannot be easily removed. It is the true policy of every good farmer to render his pasture lands as profitable as possible. These rough hills may often be made the most profitable grazing lands on the farm, affording the earliest and most nutritious feed. It is then a "consummation most devoutly to be wished," that these waste lands be reclaimed and rendered useful. If such lands are over grown with bushes and weeds they should be carefully cut in the month of August or before the seeds come to maturity, and after drying a few days should be raked together into small piles, and burned in a pleasant and not very windy day. Stumps, logs and other combustibles, should then be piled and burned, the brands re-piled and burned, till all are consumed, as early in the season as possible. The places where the piles have been burned should be well raked with a stout iron toothed rake, and a liberal supply of herd's grass, red top and clover seed sowed and well raked in. If there should be any bare knolls they should be raked and then manured with old manure and ashes, which should be well mixed with the soil and seeded as directed above. If the cattle should be kept from these lands during the remainder of the season it would be highly advantageous.

As soon as the snow is off in the spring, three hundred pounds of super phosphate of lime to the acre should be sown on a damp but not very wet day; which will give the grass an early and vigorous start. The cattle should be kept from the pasture till the ground is settled and dry. Should weeds or bushes make their appearance they should be cut and when dry, raked on to some place



where there is little grass and burned, and the ground`seeded as before directed.

If the ground is infested with thistles, they should be mowed when in bloom. If mowed just before a rain their destruction is more certain. If faithfully performed, one or two mowings will be sufficient.

Brakes and fern are more difficult to eradicate, but frequent mowings and burnings through the season, and a liberal supply of grass seed, will usually destroy them.

These rough lands may often be rendered valuable, by planting with fruit trees after the rubbish has been removed.

If the sides of the hills are wet and springy, they should be drained so that no water shall accumulate in the hollows.

The foregoing is the result of many years experience and observation, and if faithfully followed, will improve many pastures now nearly worthless.

Litchfield Corner, Sept. 20, 1857.

## ESSAY ON MAKING BUTTER.

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Dedicated to our farmers' wives and daughters. By Mrs. H. WINCHESTER.

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I have been practically acquainted with butter making for more than twenty years, and hope I shall be able to give some plain directions for making good butter, which will be valuable to young housewives; whilst those who know more about it than I do will be induced, by my example, to communicate their knowledge to the public for the benefit of others. I believe it is as easy to make good butter as that of an inferior quality. In the first place to make good butter we must have good milk. More depends on the quality of the milk than many suppose. Some cows give richer milk than others. The cows which give poor milk should be sold to the butcher and their places supplied by good ones. They should have pure water and good rich grasses or fodder in abundance, because the milk is flavored by the food. Turnips or garlies, for example, impart their peculiar taste to the milk, and so do all kinds of food on which the cow feeds, though some taint it more than others. In winter if cows are fed on poor hay, their milk will be poor, the butter white and of an inferior quality. The excellence of June butter is owing to the rich young grasses which are so abundant at that time. The farmer should see that his cows are supplied with the best of food if he would have good butter. Corn-fodder, pumpkins, carrots, beets and Indian meal or shorts are good for fall and winter feeding.

It is not necessary to say that the milk room and dishes should be clean, for all admit it. But every one does not know how important it is to have pure air in the dairy room; to see that it is as far removed as possible from all impure odors or anything that will taint the atmosphere and thus injure the butter. The milk room should be clean, cool, dry, airy and well ventilated. Flies may be excluded by a wire gauze screen in the windows. The temperature should

range from 35° to 65°, as cream separates best in a cool place. I find that milk which is set to rise in a hot room will very soon become sour, will not yield so much cream, and will make soft oily butter, which will soon become rancid. The dairy should front the north and be shaded by trees, so as to admit the light and air, but exclude the sunshine and heat. I am now using "Davis' patent world's fair churn." I like it because it churns easily and separates the butter from the milk quicker and better than any other churn I know of. The churn should not be soaked over night. Put in a quart of boiling water, churn it one minute, then draw it off and pour in a pailful of cold water to remain in the churn five minutes and your churn is ready to use. As soon as you have done with it, wash it well, dry it and put it in a dry place. Churning should be done early in the morning whilst it is cool. Rapid churning is not the best, but if the cream is acid and of right temperature it will require less than half an hour. The temperature of cream to churn best should be 62°. Cream must be slightly acid before it will make butter, and in cool weather it must be put in a warm place for that purpose. I never scald my milk or cream, because it gives the butter a flavor which I do not like, and it is useless labor. I use tin pans to set my milk in, because they are light to handle and are easily kept sweet and clean. Milk should be skimmed before it becomes acid in the least degree. The first cream that rises is the best in flavor and color. The milk should not set more than twenty-four hours and better if skimmed in twelve hours. What little might be lost in quantity would be gained in quality. Recently I measured out sixteen gallons of milk; set it twenty-four hours, skimmed nine quarts of cream from it and churned nine pounds of butter, thus obtaining nine ounces of butter from a gallon of milk. The cream should be kept in stone or glass jars or well glazed or enameled ware, as the acid corrodes common coarse glazing and it imparts poison to the cream. Too much care cannot be taken to have our food pure from mineral poisons. I wish our housewives understood this matter better than they do. The cream should not be covered except by a gauze which will not exclude the air. I put an ounce of fine salt into a three gallon jar when I begin to fill it with cream and stir the cream well morning and evening. It should not be kept more than a week. Soon as the butter has come hard, I draw off the

buttermilk and remove the butter into a long wooden tray. Then I press out the buttermilk with hard wood-clappers, and mix in by weight one and one-eighth ounces of fine salt to the pound. Placing the butter in one end of the tray, which is slightly raised so as to drain it, I leave it for the salt to combine with it until next morning. Then I work it over thoroughly, (but not long enough to heat it or make it like salve,) and mix in two ounces of white sugar to ten pounds of butter. If it is for present use, I make it into balls and stamp it. But if intended to be kept for winter, I put it down solid in stone jars, sprinkling a very little fine salt on the surface and covering it with a thick fine cloth; put on the lid and place the jar in a dry cool place. It is better to fill the jar with one churning. But if not able to, pack in each churning solid and exclude the air till you get the jar full. If it is to be kept a long while or sent to sea, pour a little melted butter over the top of the jar before you put on the cloth. I have put down butter in this way in September and kept it till the next June as good as new churned butter. It is very important to have good salt to use, for some salt gives the butter an unpleasant taste and prevents it from keeping well. I wish it to be noticed particularly, that I do not wash my butter nor allow any water hot or cold to be put in with the cream to raise or lower the temperature when I churn. It is very injurious to it. It washes out the flavor and sweetness from it, makes it insipid, and soon turns it rancid. The water which remains in it injures it more than the buttermilk, becomes impure and turns it rancid. I do not believe it is possible to preserve butter well for any length of time that has been washed. Some one should superintend the dairy to see that all is done as it should be.

Brewer, Sept. 24, 1857.

## ESSAY

On the Comparative Value of Horses and Oxen for Farm Labor.

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BY N. FOSTER.

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*To the Committee of the Maine State Agricultural Society on Essays :*

GENTLEMEN :—With some hesitancy I enter the competition for the premium offered for an “Essay on the comparative value of horses, mules and oxen for farm labor;” but believing that literary productions which shall excel in elegance of diction are not the objects sought by the Society, in offering premiums on agricultural subjects,—I employ a hand more accustomed to the use of the plow, than the pen, in writing out my views on the subject in question.

The subject which I have selected is becoming increasingly important, not merely to the farmer, but to the whole community, as prices of agricultural and other products advance; and if any thoughts I may present in this communication shall be the means of aiding, in any degree, to bring about a reform, to correct an error, or to advance a system already in operation, which will lead to valuable results, I shall feel that my labor is not in vain.

In instituting a comparison of the advantages of horses and oxen for farm labor, I assume that oxen or steers are as capable of remunerating their owners, by their labor, for food and care, at two and a half, or three years old, as horses are at four years old, and that the expense of rearing, or cost of purchase of good animals at those ages is, for oxen \$75 to \$100, and for horses \$200 to \$250 a pair.

From these premises, I make an estimate of their comparative value, carried through a period of twenty-four years, which covers the ordinary term of active service of the horse.

Suppose farmers A and B have each a farm requiring the labor of a pair of horses, or a pair of oxen. These men are equally good husbandmen, supply plenty of food of the proper kinds; and in all respects treat the animals in a manner to render them the most serviceable and profitable. A selects oxen and has on hand a pair of



three years old which have cost him \$100 to rear, or he has purchased at that cost. He then has \$100 invested in brute force for carrying on his farming operations. This investment with twenty-four years interest at six per cent. amounts to \$244. He sells his oxen at seven years old, for \$175, invests \$75 in improvements on his farm or lets it at interest, and supplies the place of his oxen with another pair of three years old which he has reared, or purchases at the cost of the first. The \$75 gain, at interest for the twenty remaining years, amounts to \$165. This process continued, of selling at the end of every four years and putting the gain at interest, would at the end of the period, (twenty-four years,) give A an income of \$727.00 on his work team, from which deduct capital \$100 and use \$144=244.00 leaves him a net gain of \$573.00.

B has selected horses, and invests \$250 in a pair, which sum, at the rate of interest allowed in A's case, amounts at the expiration of the term, to \$610.00.

At this period the horses are past labor and are valueless; and the investment and interest are sunk. This estimate gives a difference in favor of ox labor:

Net gain on ox labor, . . . . .	\$573.00
Loss on horse labor, . . . . .	610.00
	_____
Amount, . . . . .	\$1,183.00

It may perhaps with some truth, be objected that the oxen for the first years, at three and four years old, are not as efficient a team as the horses. If this be the case, and four oxen are required to supply the place of the horses, the difference in favor of ox labor will be increased; for in that case a pair of oxen may be sold every two years, and the gain put at interest.

In the above estimate I have only shown the advantages to the farmer, of using oxen instead of horses, in the performance of his labor, besides which, should be taken into the account, that in the one case the community is supplied with some 12,000 lbs. of beef; and in the other, the crows, with carrion, or the compost heap with a small, though valuable addition to its fertilizing properties. These results are obtained from an equal amount and value of feed; or, if there be a difference, it is in favor of the oxen, they requiring less than the horses.



In days not far distant in the past, the idea of taking oxen from the yoke to the shambles, without stall-feeding would have been received with distrust ; but the best beef that has been slaughtered in our State, and the fattest oxen that have been exhibited at our Fairs, have been directly from the labors of the farm. Farmers who keep "good feeders" and give plenty of food and kind treatment, uniformly keep their working oxen in condition of beef. In some instances beef of the first quality has been made with work ; hay and grass only added.

In treating this subject I have taken the position, the correctness of which will be denied by no practical man, that oxen employed in farm labor make as great return, in labor, for food and care, as horses employed in the same service. The results, as to profit or loss, will not be varied, however unequal the amount of food required.

Another item to be taken into the account is the much greater cost of furnishing and keeping in repair harness, &c. for the horses ; but without going into the minutia of the case, the foregoing I think makes it apparent that the interest of the farmer should prompt him to rely mainly on oxen in preference to horses for labor ; the true features of the case are not changed by the fact that a man may get, and often does get, a few years labor of horses without diminution of their value, or selling price ; they are a dead loss to somebody at last, notwithstanding.

A horse is indispensable to every farm establishment, for marketing, family riding, and light farm work ; beyond this, the produce of the farm should be fed to animals whose value is increased by the daily feeding. Of the work horse the reverse is true.

Having had no experience, and but little observation, on which to form an estimate of the value of mule labor, I present only the single inquiry : Having the ox so well fitted for the performance of almost all our farm labor, having also abundance of food suited to his nature, on which he will labor and make constant increase of weight and value, why should the farmers of Maine supplant him with the disagreeable mule, though he may live and work sixty years on thistles, (a kind of food, by the way, more costly to the producer than good hay or any thing else that the ox requires to bring him to perfection,) then die and be thrown away ?

GARDINER, September 2, 1857.

## REPORTS OF COMMITTEES.

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No reports on live stock of any kinds have been returned to this office, other than the awards of premiums, and no statements of competitors for premiums, with the exception of two from one exhibitor.

Some of the premiums were awarded as follows :

### HORSES.

- For best stallion, seven years old, to Americus Crockett of Guilford.
- Second best do., to Charles Proctor of Corinna.
- For best four to seven years old, to G. W. Batchelder of Exeter.
- Second best do., to J. R. Hale of Lee.
- For best three years old, to J. Burnham of Lincoln.
- Second best do., to Hodgdon & Downs of Brewer.
- For best two years old, to A. Sanborn of Bangor.
- Second best do., to A. A. Bartlett of Bangor.
- For best breeding mare with sucking foal by her side, to N. Cloudman of Stetson.
- Second best do., to S. D. Jennings of Garland.
- Third best do., to I. G. Weymouth of Sangerville.
- For best gelding, five years old, to T. S. Lang of Vassalborough.
- Second best do., to Joseph Taber of Albion.
- For best four years old do., to Henry Morse of Guilford.
- For best mare, five years old, to Thos. S. Lang of Vassalborough.
- Second best do., to Josiah Simpson of Belfast.
- For best mare, four years old, to Thos. S. Lang of Vassalborough.
- Second best do., to Joshua Lane of Hampden.

## TROTTING HORSES.

	Time.
For best stallion, of any age, for speed in trotting, to Americus Crockett of Guilford,	2.43
Second best do., to J. R. Hale of Lee,	2.53
Third best do., to Moses Call of Newcastle,	2.57
For best mare, of any age, for speed in trotting, to A. G. Hunt of Bangor,	2.44
Second best do., to A. Bodge of Winthrop,	2.45
Third best do., to Reuel Howard of Waterville,	2.46
For best trotting gelding, to George Allen of Hermon,	2.45
Second best do., to Dudley Haines of Readfield,	2.47
Third best do., to J. E. Morrill of Veazie,	2.54

For best span carriage horses, to Seward Mitchell of Dixmont.

Second best do., to Lewis Snell of St. Albans.

For best carriage horse, to Samuel Larrabee of Bangor.

Second best do., to Thos. S. Lang of Vassalborough.

For best saddle horse, to E. G. Thompson of Foxcroft.

Second best do., to Thos. S. Lang of Vassalborough.

## NEAT CATTLE.

## IMPROVED SHORT HORNS, (DURHAMS.)

For best thorough bred bull, to R. Jose of Dexter.

For best cow, to J. D. Lang of Vassalborough.

Second best do., to I. W. Case of Kenduskeag.

For best heifer, to J. D. Lang of Vassalborough.

Second best do., to Isaac W. Case of Kenduskeag.

## GRADE DURHAMS.

For best grade Durham bull, to Aaron Hoag of Gardiner.

Second best do., to Albert Whiting of Newburg.

For best grade yearling bull, to H. G. Moore of Corinna.

Second best do., to Robert Martin of Danville.

For best grade Durham cow, to H. McKenney of Monroe.

Second best do., to J. D. Lang of Vassalborough.

## HEREFORDS.

For best yearling bull, to D. Forbes of South Paris.

For best grade bull, 2 years or more, to same.

(Statements regarding these are same as given in the abstract of papers from the Oxford County Agricultural Society, which see.) The Committee speak of the young full blooded bull as a fine animal of this breed.

For best grade yearling bull, to A. Jewell of Bangor.

For best grade cow, to H. McKenney of Monroe.

Second and third best do., to same, and three others to same for heifers.

## AYRSHIRES.

For best bull, to J. D. Lang of Vassalborough.

Also for best, second and third grade Ayrshire cows.

## DEVONS.

For best bull, to Isaiah Wentworth of Poland.

Second best do., to Lorenzo Peabody of Levant.

Isaiah Wentworth also obtained all the other premiums awarded (10 in all,) for full bloods, and several for grade animals.

## JERSEYS.

For best bull, to E. and P. H. Holmes of Winthrop.

For best cow, to same.

For best heifer calf, to same.

## GRADE JERSEYS.

For best grade yearling bull, to Joseph Chandler of Winthrop.

Second best do., to Nourse & Straw of Orrington.

## NATIVES.

For best native cow, to W. Robbins of Thomaston.

Second best do., to E. B. Jordan of Bangor.

For best milch cow of any breed, over 3 years, to J. D. Lang, Vassalborough.

Second best do., to Samuel Butman of Plymouth.

For best farm stock, from one farm, to Isaiah Wentworth of Poland.

Second best do., Herace McKenney of Monroe.

## SHEEP.

- For best flock for profit, to E. F. Crane of Kenduskeag.  
 Second best do., to H. Luce of Bangor.  
 For best Leicester buck, to Horace McKenney of Monroe.  
 Second best do., to B. Holman of Bangor.  
 For best Cheviot buck and ewe, to H. G. Chapman of Gilead.

## SWINE.

- For best boar, of any breed, to A. Hoag of Gardiner.  
 Second best do., to Joseph Libbey of Brewer.  
 For best Suffolk boar, Nourse & Straw of Orrington.  
 For best Suffolk sow, to H. C. Sturdevant of Bangor.  
 For best Essex sow, to H. Percival, Waterville.  
 For best litter of pigs, to George Ricker of Garland.

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The Committee on SPECIMENS OF GRAINS award premiums, as follows :

- For best bushel of winter wheat, to Lewis Wood of Winthrop.  
 For best bushel of spring wheat, to Wm. D. Dana of Perry.  
 For best bushel of Indian corn, in ears, to Rufus Gilmore of Holden.  
 Second best do., to J. C. Clement of Kenduskeag.  
 For best bushel of oats, to Shepard Cary of Houlton.  
 For best peck of early peas, to Benj. R. Stevens of Unity.  
 Second best do., to J. P. Sinclair of Levant.  
 For best peck of pole beans, to R. D. Hill of Bangor.  
 For best peck of field beans, to William Grinnell of Exeter.  
 Second best do., to T. G. Rich of Hampden.

The Committee regret that there were so few specimens of grains presented for their examination, though gratified that those exhibited were of so fine quality. Wheat, corn, oats and beans were represented by a few specimens. Of oats there was but one entry. After the premiums were awarded, a specimen of oats was submitted to our examination, which was quite as good as the one that received the premium. Of barley no specimen was properly en-

tered, though one was found in the hall; but it was of very inferior quality. Of buckwheat, and garden seeds, none were entered or exhibited.

The Committee cannot but hope, that in the future, more pains will be taken to fill up the department of grains and seeds, by the farmers of the State, than has been done, the present year in particular. Wheat and corn were the only cereals that had respectable representations, so far at least as numbers of specimens were concerned.

In justice to the competitors on wheat, perhaps the Committee ought to say, that it was no easy matter to make up a judgment, as to which of two specimens were best, the one entered as Java wheat, and the other as Jordan, which is only a local name. The Jordan wheat was accompanied with a sheaf, which was as handsome and well-grown as could be desired, and of the variety known as *flint* wheat. What is its *true* name, we are not fully prepared to determine. It was, however, very handsome, but not quite equal, in all respects, to the Java, in the Committee's judgment.

The Committee wish, most respectfully to suggest to our farmers, that it is very desirable that an end should come very speedily to the practice of giving *local* names to farm products, the true names of which may not be known. This practice is a fruitful source of confusion, and is productive of no good. Names are of no use except as they are uniform and significant. With the present and constantly increasing multiplicity of local names, nothing can be determined by the names they bear as to the characteristics of the product. In one place they mean one thing and in another quite a different thing. Old and familiar things as often turn up under new names, as things really new. This has come to be a serious evil in our agriculture.

The Committee would say, that the only proper course to be pursued by any one, when he gets any variety of seed which he does not absolutely know to be new, that has no name known to him, is to use every means to find out its true name. He should note all its peculiarities of form, habits of growth, and record all the facts he can collect with reference to its history, and submit the whole to some person or persons skilled in such matters, and wait their de-



cision before giving it a name. In this way we may hope to attain to a respectable nomenclature of the varieties of our products to take the place of our present Babel.

DARIUS FORBES, *Chairman.*

## REPORT AND STATEMENTS.

### ON GRAIN CROPS.

The Committee on Grain Crops award premiums as follows:—

For best conducted experiment in raising the largest crop of winter wheat at the least expense, on not less than half an acre, on ploughed land, 1st, Samuel Gray, Harrison.

For best conducted experiment in raising the largest crop of spring wheat at the least expense, on not less than half an acre, 3d, Thos. J. Twycross, Dresden.

For best conducted experiment in raising the largest crop of Indian corn at the least expense, on not less than one acre, 1st, John C. Clement, Kenduskeag; 2d, George P. Hooper, Paris; 3d, E. F. Crane, Kenduskeag; 4th, A. & W. True, Litchfield.

For best conducted experiment in raising the largest crop of barley at the least expense, on not less than half an acre, on ploughed land, 1st, Straw & Nourse, Orrington; 2d, S. N. Watson, Fayette.

For best conducted experiment in raising the largest crop of oats at the least expense, on not less than an acre, on ploughed land, 1st, E. F. Crane, Kenduskeag; 2d, Thomas J. Twycross, Dresden.

### REMARKS.

We regret to find a number of entries of crops are accompanied with no statement at all; and others, with only partial statements. A list of these is appended for the information of the parties, and others interested.

WHEAT. 1. Entry of wheat and squashes, but no person's name attached, was a good crop, and would have taken a premium, had we known to whom to give it. Produce, 18 bush. per acre.

2. Alfred Cushman, Golden Ridge Plantation, Aroostook Co. Deficient in statement of the amount of crop produced.

3. T. G. Rich, Hampden, made two entries, but neglected to state the items of expense, as required by law. Produce, 24 bush. per acre of Canada spring, and 14 bush. of White Silesian wheat.

4. Hebron Luce, Bangor, made an entry of Java wheat but neglected to return the amount of his crop.

5. William D. Dana, Perry, entered a crop of Java wheat, but made no return of amount of crop.

Lucius Wood, Winthrop, and J. R. Cushman, of—we know not where—made no return whatever of their wheat crop.

CORN. 1. Alfred Cushman, Golden Ridge Plantation, Aroostook Co., made no statement of the amount of his crop. [This is the crop referred to on page 18 of report for 1857. Crop 105 bushels of shelled-corn on an acre. ED.]

2. Albert Emerson, Bangor, made no return whatever, or statement of any kind.

OATS. 1. Wm. D. Dana, Perry, neglected to return the amount of his crop.

PEAS. 1. J. P. Lincoln, Levant, entered a crop of peas, but neglected to return the amount of his crop per acre.

BEANS. 1. T. G. Rich, Hampden; Alfred Cushman, Golden Ridge Plantation, Aroostook Co.; Ezra Cushman and Wm. Grinnell of—we do not know where—neglected to return the amount of their crops.

No entries were made on rye, buckwheat, or mixed grains. It is to be hoped that a larger number of competitors may be found, another year, for all the prizes; and that all of them may be found above the general average for the State. All the returns made showed crops considerably above the average, except one on wheat, which was one and one-half bushels below, and of course could not be considered worthy of a premium. It is also to be hoped that competitors will be more careful to comply with the law and rules of the Society in making their statements. Two more premiums, at least, would have been awarded, had the persons who made entries, made proper returns, by answering the questions before them.

There are several particulars in relation to the expense of raising crops, on which more precise and definite statements need to be made. The number of days spent on the crop, and how many by boys, how many by men, and how many by oxen. Also, the quantity of

manure used, in cords, pounds or bushels. Also, the condition of the corn or grain when measured, as to dampness.

In consequence of the absence of this kind of information, the committee found it no easy matter to make up an intelligent judgment, as to how the premiums ought to be disposed of. And the whole trouble arose from the wide disparity between the statements of competitors as to the *cost* of cultivation or production, and no clue being given as to the basis of their calculations. They simply state that so many dollars were expended in labor, so many in manures, seeds, &c., without stating the *quantity* of either that was purchased. In the statements of the cost per acre of cultivating corn, they say from \$18 to \$56. Now it is a thing not to be disputed, that no such disparity can, by any possibility, exist between these expenses in different parts of the State. What is needed, are statements which shall reveal to the committee the facts which underlie their estimates, and will enable them to equalize their statements on some equitable principle. This, we think, the society ought to demand; and when this demand is not complied with, the competitors should be debarred from receiving premiums.

The committee have thought it might help in securing more uniform and precise information in relation to these matters, and indicate more clearly what is wanted, should they append to this report a *Form*, embracing all the particulars on which information is needed, and indicating the precise points to be regarded:—

FORM OF ACCOUNT TO BE KEPT WITH A FIELD OF INDIAN CORN.

185 .	<i>Corn Field (containing — acres.)</i>	DR.
May —,	To — days' work of men ploughing, at \$—,	\$00 00
	“ “ boys “	
	“ “ oxen or horses ploughing,	
	cords of stable manure,	
	lbs. guano or sup. phos., etc.,	
	bushels wood ashes, lime, etc.,	
	days' work of men carting and applying manure,	
	days' work of boys carting and applying manure,	
	days' work of oxen or horses carting and applying manure,	

May —, To —	men harrowing,	
	boys “	
	oxen or horses harrowing,	
	men furrowing,	
	boys “	
	oxen or horses furrowing,	
	men planting,	
	boys “	
	qts. seed,	
	days of men cultivating,	
	“ boys “	
	“ horses “	
June —,	“ men hoeing,	
	“ boys “	
Oct. —,	“ men harvesting and husking,	
	“ boys “ “	
	“ oxen or horses harvesting,	
	Interest on land, and taxes,	
		—————
	Whole cost,	\$00 00
185 .	<i>Contra.</i>	CR.
Oct. —, By —	bushels corn, weighing — lbs., at \$—,	\$00 00
	lbs. stalks,	
	value of manure left in ground,*	
		—————
	Product,	\$09 00
		=====
	Net profit,	\$00 00
		—————
185 .	<i>Grain Field (containing — acres.)</i>	DR.
May —, To —	days, work of men ploughing, at \$—,	\$00 00
	“ “ boys “	
	“ “ oxen or horses ploughing,	
	“ “ men harrowing,	
	“ “ boys “	
	“ “ oxen or horses harrowing,	

\* One-half to two-thirds of that applied considered to be left in the ground.

May —, To —	bush. seed, days of men sowing, cords of stable manure left in ground, lbs. guano, sup. phos., etc., bush. wood ashes or lime in ground, cords stable manure applied this year, lbs. guano, suph. phos., etc., “ “ bush. wood ashes or lime, “ “	
Sept. —,	days of men harvesting, (mown, cradled or reapt ?) boys harvesting, oxen or horses harvesting, expenses of threshing (by machine or flail ?) interest on land, and taxes,	
	Whole expense,	\$00 00
185 .	<i>Contra.</i>	CR.
Sept. —, By —	bush. (wheat, rye, oats, barley, mixed grains, peas, beans ?) tons of straw, value of manure left in ground,*	\$00 00
	Amount,	\$00 00
	Net profit,	\$00 00

We hope these suggestions may serve to secure the attention of our farmers, and more resolute endeavors on their part to fully comply with the requirements of the statute, and the rules of the society, in these particulars, for we believe there is not that readiness on the part of cultivators to avail themselves of the medium afforded by the agricultural societies to make known the details and results of their experiments in the production of crops for the benefit of “their craft,” and for the public good, which there should be. The right knowledge and practice in cultivation, with the means farmers now possess, would much increase the products of the State; and if the

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\* Same allowance as in corn.

term *cultivation*, as used above, may be so extended as to include the preservation and application of manures, it is safe to say that the whole agricultural productions of the State would be doubled on the acres now in cultivation, in five years; for besides the loss—waste it may be termed—by shallow ploughing, half tilling, and “slipshod” cultivation in general, there is an annual loss of more than one-half of the manure made by the stock on the farms in this State. A few farmers do better; they may do much more than this on a general average. To remedy these evils we would urge upon those farmers, who, from superior advantages or other causes, occupy the front rank in the advancing force, to communicate to their fellows in arms the result of their success by detailing the manœuvres which have led them to it. And further, we will venture so far “out of the record,” as to suggest to the Trustees to offer premiums for essays on the best methods of preserving the manures made on the farm—the essays to be detailed descriptions of the fixtures, convenience and *practice* of the applicants for the premiums.

Manuring to increase the corn crop above sixty or seventy bushels to the acre, (except on very porous soils, in which manure is soon lost,) is often attended by the loss of the following grain crops or grass from the same cause. Could the average be brought up to 60 bushels per acre, it is believed it would nearly, if not quite, double the amount of corn raised in the State, in good seasons. To bring the average per acre to the most profitable point, and to a level near that point, is the object to be aimed at; then, the number of acres may be extended. An increase of crops will give an increase of stock, and an increase of stock an increase of manure, and an increase of manure an increase of crops. Repeated revolutions of the same kind are needed to place Maine, as an agricultural State, in the position which she is adapted, by her natural advantages to occupy.

DARIUS FORBES, *Chairman.*

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#### INDIAN CORN.

John C. Clement of Kenduskeag, obtained the first premium on Indian corn; grown on a dark colored, sandy and gravelly soil, with porous subsoil; in corn the year previous; plowed ten inches deep;



applied eight cords of compost, worth \$12; planted the eight rowed variety, 15th May, in hills two feet apart, rows three and a half feet apart; cultivated and hoed three times; applied eight bushels of ashes as top-dressing. Harvested 28th September, when the grain was glazed. Crop, one hundred twenty-five and a half bushels shelled corn, weighing fifty-six pounds per bushel. Cost of crop, \$54; value, \$1 per bushel.

*Statement of Geo. P. Hooper of Paris, on corn, who obtained the second premium.* "The land on which the crop was grown is a yellow loam, in which granite boulders of moderate size abound, with but few small stones. The soil is from one foot to one foot six inches deep, beneath which is a layer of sand about one foot in thickness immediately above the impervious subsoil. It is very light and friable, and soon becomes dry enough to work, after a rain, however powerful.

The variety is that known as the King Philip. The quantity of ground on which it was grown was one acre. It was planted May 20th and 21st, and harvested October 23d, 1857. It was manured in the hill with old and well-rotted stable manure, and hoed twice.

After being husked, it was measured as per accompanying certificate, and made one hundred and fifty-four baskets full of ears, containing one bushel each. One of these baskets was filled with ears and shelled, which made three pecks of shelled corn, within one gill. This gives as the produce of this acre, one hundred and fifteen bushels of shelled corn."

*Expenses.*

" Plowing, . . . . .	\$2 00
Harrowing, . . . . .	50
Furrowing, . . . . .	30
Manuring in hill, . . . . .	2 50
Manure—20 loads of 1-3 cord each, at \$3 per cord,	22 00
Planting, . . . . .	2 50
Hoeing twice, . . . . .	5 00
Harvesting, including husking, . . . . .	7 38

\$42 18

*Income.*

115 bushels corn, \$1,	.	.	.	.	\$115 00
Manure left in the ground,	.	.	.	.	11 00
Fodder, estimated at value of 2 tons hay,	.	.	.	.	24 00
					<hr/>
					\$150 00

Net profit, . . . \$107 82."

GEORGE P. HOOPER.

Paris, Oct. 28, 1857.

E. F. Crane of Kenduskeag, obtained third premium on corn grown on a brownish sandy gravelly soil, resting on a porous subsoil and free from stones. Had been in grass for five years previous. Plowed eight inches deep, applying five cords of manure, a mixture of hog, horse, and other animal manure and night soil well decomposed. Planted the eight and ten rowed variety in hills two and one half feet apart, rows four feet apart, May 20th. Cultivated and hoed twice, and eight bushels ashes applied. Cut up at the roots September 20th—husked October 18th. Crop, one hundred and eighty-seven bushels of ears, weighing forty-four pounds per bushel.

His estimate is as follows :

Plowing and harrowing,	.	.	.	\$4 00
Furrowing,	.	.	.	1 00
Manure, 5 cords, \$2,	.	.	.	10 00
Applying the same,	.	.	.	4 00
Planting,	.	.	.	2 00
Cultivating, hoeing and ashing,	.	.	.	7 00
Harvesting,	.	.	.	6 00
				<hr/>
				\$34 00
Value of corn, 187 bushels, at 42c.,	.	.	.	\$88 55
Grown on same acre, 700 pumpkins, 2c.,	.	.	.	14 00
“ “ 6 bushels beans, \$1.75,	.	.	.	10 50
5,867 lbs, stalks and husks, \$8 per ton,	.	.	.	23 46
				<hr/>
				\$136 51
Deduct cost,	.	.	.	34 00
				<hr/>
Leaves as net value,	.	.	.	\$102 51

A. & W. True of Litchfield, received fourth premium on ninety bushels of King Philip corn, grown on an acre of yellowish loam, rather hard and stiff, resting on an impervious subsoil at a depth of two and one-half feet; in corn in 1855, with light manuring; in 1856 in wheat, with no dressing. Plowed eight inches deep and harrowed; applied eight cords barn manure and two cords hog manure; planted 23d May, in hills three feet apart, rows three and one-half feet; cultivated and hoed twice; after the first hoeing, applied eight bushels ashes and lime. Stalks topped September 15th; crop harvested October 10th.

Estimate: Plowing and harrowing, . . . . .	\$4 00
10 cords manure, and applying the same, . . . . .	24 00
Cultivating and hoeing, . . . . .	10 00
Cutting stalks and harvesting, . . . . .	12 00
Top dressing and planting, . . . . .	6 00
	<hr/>
	\$56 00
Value of crop, . . . . .	\$90 00.
Stalks, &c., not weighed.	

Elbridge C. Crane, (lad under sixteen years of age,) obtained first premium on crop of corn on one-eighth of an acre. The land had been in grass four or five years; plowed the fall previous; harrowed in spring, two-thirds of a cord of hog manure applied and a bushel of ashes around the hills. Cultivated and hoed twice. Cut up at the roots before fully ripe; thinks in this way the corn is equally good and the fodder better. Crop, twenty-three bushels of ears weighing forty-two pounds per bushel, (at the rate of one hundred and eighty-four bushels of ears per acre.)

*Statement of Samuel Gray of Harrison.* "I have raised on three-fourths of one acre of ground, eighteen and one-fourth bushels of winter wheat, as per certificate of George Pierce and Brackett Woodsum.

The soil where the above wheat was grown, is a sandy loam, fine and light. A small part is clay loam. The subsoil under the sandy loam, is coarsish and rather loose sand. The clay loam is about fifteen inches deep. Soil is of dark chocolate color. Rocks, granite—rather free from stone. The land was manured lightly and

planted to corn last year (1856). Was plowed about ten inches deep and three cords of common stable manure, worth \$9, was applied to the land, in the fall of 1856, before sowing the seed. Was never subsoiled—never underdrained. The seed sown was the Banner wheat. Sown last of September, 1856—had no previous preparation and was sown broadcast upon the furrow. The quantity of seed used was in proportion of about five pecks per acre. Crop was harvested last of July, and was pretty well ripened when cut. On an acre of such wheat there would have been twenty-four and one-third bushels, and fifteen hundred and eighty-two lbs.—(the average weight of this wheat was sixty-five lbs. to the bushel)—and there would have been fourteen to sixteen hundred lbs. of straw to the acre.

The following are items of expense of raising the above wheat:

3 cords manure, . . . . .	\$9 00
Hauling the manure—plowing and harrowing, . . . . .	3 00
1 bushel wheat for seed, . . . . .	2 25
Harvesting and threshing, . . . . .	6 00
	<hr/>
	\$20 25

The value of the above, 18 $\frac{1}{4}$  bushels, at my residence, is

\$2.25 per bushel, amounting to . . . . . \$41 62

I ask a premium for the best conducted experiment in raising the largest crop of winter wheat at the least expense, on not less than half an acre, on plowed land.

Harrison, Sept. 26, 1857.

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### BARLEY.

Straw & Nourse of Orrington, obtained first premium on crop of barley—forty-seven bushels of handsome and well cleaned grain. The soil a rocky clay loam, and which was in corn the year previous. The details of treatment and condition of land previously, are not given, as the applicant, Mr. Straw, took the farm in August.

S. N. Watson of Fayette, obtained premium on twenty bushels of six rowed barley, grown on half an acre of yellowish loam, which

had yielded ruta бага and carrots for three years previous—plowed eight to ten inches deep—seeded at rate of three bushels per acre, 8th of May—cut July 30th, when straw was quite green.

Estimate: plowing, harrowing and sowing, . . .	\$4 00	
Seed, . . . . .	1 50	
Harvesting and threshing, . . . . .	3 50	
	<u>          </u>	\$9 00
Crop: 20 bushels, . . . . .	20 00	
Straw, 1½ tons, . . . . .	7 50	
	<u>          </u>	27 50
Profit, . . . . .		\$18 50

OATS.

E. F. Crane obtained first premium on seventy-two bushels of oats, weighing thirty-one pounds per bushel, from one acre. Land, a clayey loam with a little sand; plowed up and sowed to oats in spring of 1856, without manure; in spring of 1857 plowed eight inches and applied two and one-half cords green stable manure. Sowed May 25th, three bushels seed. Cut August 25th, before fully ripe.

Cost: Plowing, manuring, sowing, &c., . . . . .	\$5 75
Harvesting and threshing, . . . . .	6 00
	<u>          </u>
	\$11 75
Value: 72 bushels, 50c., . . . . .	36 00
2¼ tons (estimated) straw, \$5, . . . . .	11 25
	<u>          </u>
	\$47 25

Thomas J. Twycross of Dresden, obtained second premium on fifty bushels of oats, weighing thirty-two pounds per bushel, from one acre of land, old mowing, plowed up and planted to corn and potatoes in 1856. Applied no manure this year; seed, five bushels, sowed 10th May; harvested middle August, nearly ripe.

Cost: Plowing, \$2; harrowing and rolling, \$1.50,	\$3 50
Harvesting, \$1.50; threshing, \$3.50; seed, \$2.50,	7 50
	<hr/>
	\$11 00
* Value: 50 bushels, 50c.,	\$25 00
1½ tons straw,	10 00
	<hr/>
	\$35 00

Many of the other statements would have been of great interest had they not been deficient in some important particulars, the omission of which seems to be purely accidental or resulting from lack of care in their preparation. There is reason to believe that some of the competing crops which were unsuccessful in obtaining a premium, were larger and finer than some of those which did obtain one.

## STATEMENTS ON ROOTS AND FORAGE.

### POTATOES.

Elijah Page of Orono, obtained first premium on crop of potatoes grown on one acre of dark colored sandy loam, previously in grass; plowed ten inches deep after spreading fourteen loads of manure. Planted last of April in hills two feet apart, rows two and one-half feet, using ten bushels of "Orono" potatoes for seed. Cultivated twice and hoed once; dug 20th September. Crop, three hundred and forty bushels of sorted and ten bushels of small. Expense stated at \$41.50, and value of crop \$183.60.

E. F. Crane, second premium on three hundred and twenty bushels of "Orono" potatoes, grown on an acre of light gravelly soil; in grass; plowed eight inches, using four cords of light strawy manure, worth \$1.50 per cord; twelve bushels small potatoes for seed, one in a hill. Planted last of April; dug last of October.

Expense: Plowing, \$3; harrowing and furrowing, \$1.50,	\$4 50
4 cords manure, \$1.50,	6 00
Planting, \$2; hoeing twice, \$5,	7 00
Cultivating once, \$1.50; digging, \$10,	11 50
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(Seed?) Whole expense, . . .	\$29 00
Value of crop at 50c. per bushel, . . .	\$160.



Benjamin R. Stevens, third premium on one hundred and eight bushels of "Foot" potatoes, and nine bushels of marrowfat peas, grown on an acre of light sandy loam; in grass and plowed nine inches; harrowed once; a third of a shovelfull of yard manure and a tea spoonful of plaster applied to each hill.

T. G. Rich of Hampden, obtained premium on a crop of potatoes grown on eighteen acres of clayey loam, light and friable if well managed; mostly in potatoes last year. Plowed eight inches deep; manured variously; part old and part new; some spread and some in hill; where spread and harrowed in they rotted less than when put in the hill. "The nearer the potatoes were planted on top of the ground and more oval the hill, the less they rotted." The seed partly early blues but principally Jackson's; "cut fine and dried in plaster—Jackson's should be cut *very* fine." Planted in hills—one piece in a hill; five bushels seed per acre; three feet between rows; twelve to fifteen inches between hills. Planted 15th to 27th May; cultivated once, hoed once; dug 15th August to 20th September. Yield, 4,000 bushels; saved 2,500 bushels sound; average yield over 200 bushels per acre. Cost of cultivation, about \$15 per acre; manure \$20 per acre, half to be charged to the present crop. Average price, 50c. per bushel.

E. C. Crane of Kenduskeag, (under sixteen years of age,) obtained premium on forty bushels of potatoes grown on one-eighth of an acre of gravelly soil, plowed up from the sod in the fall, and having three-fourths of a cord of strawy manure applied next spring, and the soil worked about five inches deep.

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#### RUTA BAGAS.

Nourse & Straw of Orrington, obtained first premium on half acre of ruta bagas grown on a rocky clayey loam—old mowing field. Manured with light coat of stable manure and some guano. Crop, 400 bushels on half acre.

## CARROTS.

Nourse & Straw of Orrington, obtained first premium on half acre of carrots. Soil and manure same as above; plowed deep and subsoiled. Crop, three hundred and fifty six and one-half bushels on half acre.

E. F. Crane of Kenduskeag, obtained second premium on carrots grown on half acre of dark colored light sandy loam, in a high state of cultivation; carrots the year before; plowed ten inches; four cords of hog manure and night soil applied. Sown June 20th in drills eighteen inches apart. Crop, three hundred and eight bushels on half acre.

Estimated expense, \$29.00.

“ value, at 34c. per bushel, \$104.72.

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 MANGOLDS.

Nourse & Straw of Orrington, obtained first premium on six hundred bushels mangold wurtzel, grown on an acre of clayey loam, about twelve inches deep, resting on impervious clay, and rather stony; had been thoroughly underdrained; plowed deep in the fall, harrowed in spring, and ten cords stable manure and a little guano applied; sown June 1st in drills eighteen inches apart; plants eight inches apart; cultivated and hoed twice.

Nourse & Straw also obtained first premium on English turnips grown on same rocky clay soil—a piece of old mowing field—“manured with a light dressing of stable manure and some guano”; plowed deep and subsoiled. Crop, seven hundred and thirty-eight bushels per acre.

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 HAY.

The only applicant for premium on hay crop, was E. F. Crane of Kenduskeag, who obtained premium on three tons herds grass and clover, from an acre of gravelly loam, planted to corn three years

ago and laid down to grass; also on two and one-half tons of clover from an acre of stiff clayey loam. "In spring of 1856, was sown to oats and clover seed, having been planted to corn without any manure." Also, on two and one-fourth tons of hay from an acre of intervale overflowed by Kenduskeag river once or twice every year; has been mowed for twenty years in succession without any application of manure.

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#### FROM REPORT OF HONEY.

The keeping of bees, as a side department in farming, ought not to be neglected by the tiller of the soil, since it is a pleasant care, suggestive in its nature, and generally profitable. A few simple facts comprise the whole theory, and a little careful attention and a few familiar manipulations, embrace all the essential labor required. In opposition to this, there are many hypotheses respecting bees, and many patented bee-hives, involving a multitude of absurdities and contradictions, and out of which their originators make more money than they ever did or ever will from the keeping of bees by their machinery. It is not within the duties of this Committee to speak at length upon this subject, but as lovers of good honey, and as friends to pleasant and productive farming, we would offer this suggestion—be not over-sanguine as to the effect of any vaunted theories, nor complicated bee hives.

JOHN S. SAYWARD, *Chairman.*

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#### FROM THE REPORT ON APPLES.

The awarding committee on apples ask leave to say that in their opinion, in point of value for domestic uses, the apple will have the preeminence over all other fruits which we raise in Maine.

Its long keeping qualities and the various uses to which it is applied, render it almost an indispensable requisite in families. Hence the apple crop of Maine is of great importance, and is annually increasing in value, in good bearing years.

A good orchard usually pays better than any other crop, and therefore may be considered a sure and safe investment by the capitalist.

True it is subject to casualties like other crops.

The last winter was a very severe one and many losses have been sustained. Yet we may learn by it what fruits are the most hardy and the most *safe* to be cultivated *extensively*. We therefore in future should practice accordingly. By the "Patent Office Report," we learn, that the total estimated annual value of the orchard products is, in the United States, over twenty-five millions of dollars. It is highly desirable that Maine like her sister New York, should cultivate extensively long keeping apples for exportation to foreign countries. American apples command the highest prices in Europe, and may by extensive cultivation become a productive source of wealth to our State. It is now well understood that apples grown in Maine are of as high flavor as of any other State (of the *same* varieties) and are noted for their long keeping qualities.

The Curculio has this year been busy in his work of destruction of fruits, and the apples have suffered in every section of our State, and this and the severe winter, have materially lessened our fruit crops.

Notwithstanding the drawbacks of this season, we think the show of apples at this third annual show is decidedly superior to either of the other annual state exhibitions.

The committee on apples by instruction of the State Agricultural Society further report :

That there were on exhibition one bushel of excellent cranberries, also a bushel basket filled with splendid cranberries on the vines ; both lots were raised and exhibited by Rev. Luke P. Rand, of Orono.

The cultivation of cranberries may be an experiment, or at least it is in its infancy in this State.

Mr. Rand states that he has been at an outlay of 2,273 dollars for land, and now has under cranberry culture seventy-five acres.

His successes and disappointments in their cultivation should be known to our people, and we are happy to state that he engages to furnish a more full and further statement for publication in the Agricultural Report.

HENRY LITTLE, *Chairman.*

## DAIRY.

The Committee on Dairy Products speak in high terms of this department of the exhibition. After announcing the awards, they remark :

“There were about forty entries of butter for premium; and many specimens that did not receive a premium were of superior quality, and the dairy women who presented them, are entitled to much credit for their skill.

Of cheese there were not so many entries. But your Committee found it quite as difficult to determine, to their own satisfaction, the relative merits of the various specimens which they examined; and they take pride in saying, that they were a better lot of cheese, taken as a whole, than we have ever before examined.

Of the butter and cheese, entered for a premium by girls under sixteen years of age, your Committee cannot speak in terms of too much praise. They were fully equal to any specimens offered by their mothers; and every article of butter and cheese entered by them for our inspection was truly worthy of a premium.”

## STATEMENTS ON DAIRY PRODUCTS.

H. W. Nichols of Holden, who obtained the premium on greatest amount of butter made in June, July and August, from one cow, states that she was a grade Durham, six years old, reared by himself and kept on hay and grass only, without provender—averages eight quarts during the whole time in milk, and gave twenty-two quarts per day through three months. The yield of butter was, for the week ending June 8th, twelve pounds, four ounces; June 15th, fourteen pounds; 22d, sixteen pounds, one ounce; 29th, twelve pounds; July 6th, thirteen pounds, twelve ounces; 13th, fifteen pounds, four ounces; 20th, fourteen pounds, thirteen ounces; 26th, thirteen pounds, five ounces; August 1st, ten pounds; 7th, nine pounds, seven ounces; 13th, eight pounds; 20th, ten pounds, three ounces; 28th, twelve pounds, twelve ounces—in all one hundred and sixty-two pounds, three ounces—averaging one and three-fourths pounds per day.

The cow calved May 13th; calf weighed one hundred and ten pounds; and up to June 1st made twenty-three pounds, twelve ounces butter.



He farther says, that the variable quantity in different weeks was owing in part to the weather and in part to supplying the family of six or seven persons with milk for the table.

Certified to by sundry individuals as cognizant of the facts, and by a justice of the peace that these persons are credible and reliable.

The statement of J. M. Carpenter of Pittston, who obtained second premium, is as follows :

“Our dairy consists of four cows—one 3, two 4, and one 5 years old. Two are grade Durhams, and two natives. We do not as yet confine ourselves to any particular breed, but should prefer (having in view stock and dairy purposes,) grade Durhams, say half Durham, quarter Devon, and quarter Native, regard being had to those that produce a rich quality of milk. We supply them during the winter, while the coarse fodder is fed out, with a small quantity of roots, and the rest of the time they have good hay. In summer, they have only grass. Our best pasture is high and some rocky, and with the other grasses is a good intermixture of honeysuckle.

We strain the milk into tin pans and set it in a cool place until the cream rises, usually from thirty-six to forty-eight hours, when the cream is taken off and that alone is churned. We have made no comparative experiments in regard to the yield of butter from milk churned or from cream churned alone. We usually keep the cream so cool that it requires about one hour to “fetch” the butter, believing the quality is improved by so doing. The butter is thoroughly worked to free it entirely from buttermilk, and salted with pulverized rock salt to the taste, or a little less than one ounce to the pound, and put down in stone pots or firkins, or stamped in balls.

We made, in the months of June, July and August, three hundred and thirty-two pounds of butter, used in the family three hundred and ninety-three quarts of milk, which is equal to full forty pounds of butter, making a total of three hundred and seventy-two pounds, averaging ninety-three pounds to each cow.

The quantity produced by these cows may not be so large as some others, but as they are only of middling size, requiring a corresponding quantity of food, I am of the opinion that they are worthy of some praise. They certainly are a source of some profit to the owner. I sold last year, from the two grade Durhams, one of them



being two and the other three years old, and each raising a calf until eight weeks old, three hundred and sixty pounds of butter from the time they "came in," in March and May, to the close of the year 1856.

JAMES M. CARPENTER.

Horace Jose of Dexter, who obtained the third premium, showed certificate from a marketman that he had sold for him from his dairy of nineteen cows, one thousand six hundred and forty-two pounds during June, July and August—averaging about eighty-six and one-half pounds per cow. Keeps his cows on hay and straw in winter, with some provender before calving—on high ground pasture in summer.

Artemas L. Barton of Dexter, obtained the first premium on greatest quantity of cheese per cow during the season, from June 1st to last of August; being, from a dairy of nineteen cows, one hundred and seventy-six and one-half pounds each in three months, and supplying a family of fourteen with milk besides.

Lorenzo J. Peabody of Levant, who obtained premiums on both butter and cheese, (statement on butter not found,) says his dairy consists of seventeen cows and five heifers; his mode of making cheese "is to set the milk warm from the cow; put in sufficient rennet to bring it to a curd in fifteen minutes; let it stand one hour; cut the curd in the tub about an inch and a half square; let it stand till it is sufficiently settled to dip into a basket; when it is well drained slice it and pour scalding water on it; drain it again, then slice it again and lay it on boards to cool; then pass it through the cutter\*; add two ounces of salt and one tea spoonful of salt-petre to every twelve pounds of curd; mix it well and put it into a slow press and increase the pressure till it is well pressed; when taken from the press, fit the cloth to the cheese; dip them in hot butter and sew them up; turn and dress them every day until cured for market."

Stephen Steward of Newport, obtained gratuity for greatest amount of cheese per day made from the milk of two cows, being

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\* Made by the Shakers at Canterbury, N. H. Costs \$3, and will cut the curd in an eighth of the time required to do it with a knife.

two and one-fourth pounds each. Two cows, in fifty-seven days, yielding two hundred and sixty-six pounds, in June, July and August, as per certificate.

The following statement and additional remarks, contained in a note accompanying several parcels of superior butter, from Amasa Stetson of Stetson, will be read with interest :

Of how many cows does your dairy consist ?

*Answer.* Forty-two.

Do you confine yourself to any particular breed of cows ; if so, which breed do you consider best for dairy purposes ?

*Answer.* My cows are mostly natives, which I consider the most hardy and pay the largest profit according to the expense of keeping.

In what manner do you keep your cows during winter ?

*Answer.* I keep my cows as well as I can by giving them the largest quantity of hay I can induce them to consume.

In what manner do you keep them during the summer ?

*Answer.* I keep them in pasture.

What kind of pasturage do you find best for cows ? and do you find any difference in the quality of your butter or cheese, arising from feeding on different species of grasses or herbage ?

*Answer.* I find newly cleared land, well stocked with clover, to be the best kind of pasture—white clover or honeysuckle is the very best feed for cows that I know of.

In what manner do you treat the milk when you are making butter ?

*Answer.* We set our milk in tin pans in a cool, dry cellar made for that purpose, and skim the milk after setting thirty-six hours only, and churn immediately.

Do you churn the milk, or do you take off the cream and churn that alone ?

*Answer.* We churn the cream.

Have you made any comparative experiments in regard to the yield of butter from milk churned, or cream churned alone ; and what have been the results ?

*Answer.* We have made experiments in churning milk, and are satisfied that the milk churned will make no more butter than the cream churned alone, and of inferior quality.

Have you made any experiments in regard to the temperature of the milk or cream when churning, and what temperature do you find best?

*Answer.* In quite cold weather we scald our churn and warm our cream to sixty degrees by setting our tin cream pots into a tub of hot water, gently stirring it till we obtain the right temperature. If the weather is moderately cool, fifty-eight degrees is warm enough.

What is your mode of managing and preserving butter after being churned?

*Answer.* That which we intend for immediate use, we work thoroughly once only, under a wooden roller on a marble table, using one-third of an ounce of refined sugar and from three-fourths to one ounce of rock salt to each pound of butter. The butter we pack, we work the second time, and use one and one-half ounces of salt per pound.

What is the average yield of butter per cow in your dairy?

*Answer.* In 1851 my dairy of fifty-two cows averaged, the first week in June, a fraction over eight and one-half pounds per cow, and eight pounds the first week in August. My pastures were then mostly new cleared land. This season my cows have averaged from seven to eight pounds per week only.

Have you made discoveries in the manufacture or preservation of butter that will prove advantageous?

*Answer.* We think that working our butter under a wooden roller and on a marble table—working in the salt with a wooden slice, and shaping the butter with wooden spatulas, or, in other words, working our butter without its coming in contact with human hands, an improvement in the manufacture of butter.

In presenting several boxes of fall butter and also one pot of June butter for the premium offered by the Maine State Agricultural Society, I desire to say, that in the manufacture of the several boxes of fall butter, a part of them were salted with one ounce of rock salt to each pound of butter, and a part with only three-fourths of an ounce of salt and three-fourths of an ounce of refined loaf sugar, to suit the different tastes of the landlords of the Bangor House and Penobscot Exchange, who use a large share of my butter. The pot of June butter was made by thoroughly working it under a wooden roller on a marble table when first taken from the

churn, and one and a half ounce of rock salt and one-third of an ounce of refined loaf sugar to each pound of butter thoroughly incorporated with a wooden slice; it was then kept in an ice-cellar for twelve hours, when it was worked over under the roller and packed close in layers of about three inches in thickness—covered with a cloth on which was spread half an inch of fine salt, and kept in the dairy cellar covered with blankets to keep it from the air as much as possible.

In your fifth question you ask, "What kind of pasturage do you find best for cows? and do you find any difference in the quality of your butter or cheese arising from feeding on different species of grasses or herbage?" To suppose that good butter can be made from low land pasture, where little else is grown but brakes and coarse sour grasses, is, if possible, equally absurd as to suppose that "grapes can be gathered from thorns, and figs from thistles," or that courtesy and justice can be expected from a "border ruffian." To make good butter, you must procure a good cow; that is, a cow that will give a good quantity of yellow rich milk; for if a cow will grow fat in a good pasture when in milk, you may be sure that a large share of what she consumes has been converted into muscle and fat instead of going into the milk pail. Good butter cannot be made from thin white milk, from which the oil has been absorbed by the system of the cow. Next in importance, is a good high land pasture, the more white honeysuckle it produces the better, it being the richest and best of the English grasses—the Dutch or red clover being the next best, a few dandelions being desirable to give color to the butter. Butter is a chemical oil or extract, the cow's stomach the laboratory, and as a consequence, the richer the herbage on which the cow is fed, the richer and better the butter, unless it is injured in the manufacture.

In your eighth question you ask, "Have you made any comparative experiments in regard to the yield of butter from milk churned, or cream churned alone; and what have been the results?" We churned milk as an experiment, and found that the quantity of butter obtained was no more than when the cream alone was churned, and that it took so long for the butter to come, or collect, that it was soft and white, with a flat and insipid taste—that the butter was materially injured by the too long process of churning. We visited

a dairy in this State managed by a dairy woman from Goshen, N. Y., witnessed her process of churning the milk in a lapered or partially sour state, the churning being performed by horse-power, taking one and a half hours to bring the butter, which, when collected, was white, soft and insipid—convincing me that if the dairies of Goshen produce the best butter, as they have the reputation of producing, it must be owing to their rich pastures, rather than to their process of churning milk instead of cream.

Hoping I have answered satisfactorily the questions contained in your circular, I am, very respectfully, your obedient servant,

AMASA STETSON.

There were returned a considerable number of statements on both butter and cheese with no name attached, nor have I any means to ascertain which of them were from the more successful competitors; for this reason they are mostly omitted. One is as follows:

Of how many cows does your dairy consist?

*Answer.* Five.

Do you confine yourself to any particular breed of cows? if so, which breed do you consider best for dairy purposes?

*Answer.* I have two full blood Durhams and three natives—the Durhams are superior to the others.

In what manner do you keep your cows during winter?

*Answer.* On hay, with an occasional feed of roots.

In what manner do you keep them during summer?

*Answer.* On grass pasture only.

What kind of pasturage do you find best for cows? and do you find any difference in the quality of your butter or cheese arising from feeding on different species of grasses or herbage?

*Answer.* Red and white clover pasture produces milk of the best quality for both butter and cheese.

In what manner do you treat the milk when you are making butter?

*Answer.* Strain five quarts to a pan—depth of milk in pan, three inches. Set thirty-six hours, then skim. Churn once in three days.

Do you churn the milk, or do you take off the cream and chura that alone?



*Answer.* Churn the cream alone.

Have you made any comparative experiments in regard to the yield of butter from milk churned, or cream churned alone; and what have been the results?

*Answer.* No.

Have you made any experiments in regard to the temperature of the milk or cream when churning, and what temperature do you find best?

*Answer.* Have found that fifty-six degrees is the right temperature.

What is your mode of managing and preserving butter after being churned?

*Answer.* Remove immediately from the churn to an inclined table, and work with paddles till all the buttermilk is removed. Do not touch the butter with the hands. Salt with two ounces salt to three pounds butter. Cover closely, and allow it to stand till the brine is formed; then work again with paddles, and form in square balls of about a pound each. Let it stand till hard, then pack in stone jars, and cover closely from the air. Never put in brine, and use no sugar.

What is the average yield of butter per cow in your dairy?

*Answer.* About one hundred and fifty pounds per year.

Have you made discoveries in the manufacture or preservation of butter that will prove advantageous?

*Answer.* 1st. Washing butter, in either hard or soft water, injures its flavor—its only advantage being a slight saving of time and labor in the working. 2d. Good butter, thoroughly freed from buttermilk, needs no sugar either to make it sweet or to keep it so.

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## AGRICULTURAL IMPLEMENTS.

The Committee on Agricultural Implements, award premiums, as follows:—

For best sod plow, to Isaiah Frye of North Berwick.

Second best sod plow, to J. W. Hanson of North Berwick.

For best cultivator, to J. W. Hanson of North Berwick.



- For best corn planter, Diploma to J. A. Varney of Brooks.  
 For best horse rake, to J. C. Kent of Barnet, Vt.  
 For best scythe, to North Wayne Scythe Company.  
 For best thresher and separator, to W. Williams of Corinna,  
 Second best thresher and separator, to Benjamin & Co. of Winthrop.  
 For best portable grist mill, to W. Williams of Corinna.  
 For best hay press, to C. J. Fay of North Lincoln.  
 For best corn sheller, to C. E. Ricker of North Berwick.  
 For best cheese press, to A. F. Beeman of Fitchburg, Mass.  
 For best one horse, common wagon, to O. S. Carville of Lewiston.  
 Second best one horse, common wagon, to W. A. Stilson of Waterville.  
 For best light pleasure wagon, to J. H. Whittemore of East Machias.  
 For best chaise, two wheels, to O. S. Carville of Lewiston.  
 For best chaise, four wheels, to O. S. Carville of Lewiston.  
 For best gig, to O. S. Carville of Lewiston.  
 For best double sleigh, to W. Stillson of Waterville.  
 For best single harness, to F. A. Warren of Buckfield.  
 For best double harness, to J. & B. Jordan of Portland.  
 For best yoke and bows, to Richard Whitten of Troy.  
 For best whips, to Goodhue & White of Bangor.  
 For best dozen horse shoes, to Joseph Bither of Bangor.

## REMARKS.

The Committee recommend the award of gratuities:—

- To Joseph Peavey of Bangor, hay press.  
 To J. H. Whittemore of East Machias, patent C spring, covered wagon.  
 To Taber & Webb of Bangor, axes and chisels.  
 To A. Simmons & Son of West Fitchburg, Mass. case of cutting tools for harvesting, &c.  
 To John Lowell of Bangor, hand-sleds, an indispensable article for Young America.  
 To S. W. Tebbets of Bangor, double sled.  
 To John Wharff & Son of Madison, one dozen axes.  
 To A. F. Beeman of Fitchburg, Mass. hay press with stump machine attached.  
 To B. R. Mowry of Union, set cooper's edge tools.  
 To each of the three mowing machines on exhibition, a premium.

The Committee regret they could not have the opportunity to test these machines and report upon their particular merits.

Several articles entered in this department did not appear. We reserve some important machines and implements, for honorable mention at a subsequent day.

CALVIN CHAMBERLAIN, *per order*.

Your Committee present themselves at a late day, with little more to offer for a report than an apology for so nearly an entire neglect of duty.

However we may dislike excuses and apologies for grave omissions, we feel to justify ourselves in this case by saying, that but two of your committee presented themselves, and one of these at a late day. For a portion of the time we were occupied in our examinations, we were fortunate in securing the services of an eminent gentleman, whose versatile talent aided us essentially in finding the beauties and the defects in the articles in our department.

The time of the show was so far spent when we had closed our examinations and agreed on the awards of your premiums, that a report was deferred, with the agreement that it should be a joint labor—a pledge that, we are sorry to say, has not been redeemed. Now *we* report in very brief, that the machines and implements in this department, did not in numbers appear to meet our expectations, nor equal that of former exhibitions. Some improvements of a recent date were manifest, and several articles presented are certainly worthy of honorable mention. We shall not attempt to review and name all such; and the exhibitors of the omitted articles are especially assured that no invidious spirit enters our circle.

We are not of the number, (if there are any such) who, patriotically inflated, view with a just and laudable pride the beautiful and vast results from the inventive talent of the American people in the quarter of a century, only to think that the future cannot be so prolific in scientific and practical advancement.

Hundreds of patents have been issued of recent date for improvements in a single agricultural implement, and at the present time in its best phase it is a thing hardly to be desired. Yet we do not despair of its being perfected so as to come into general use.

Some of our most important implements must be farther improved or go out of use by the advent of more efficient substitutes.

Several Presses were on exhibition, for various purposes, and with degrees of power from pressing cheese to that of a power of hundreds of tons. Of these a press by Joseph Peavey of Bangor, for hay, cotton, &c., by its combination and arrangement of parts for rapid working, for its ample power when worked by hand, its simplicity and cheapness, (\$55,) cannot fail to commend itself to general favor. The well known and thoroughly built hay press of C. J. Fay of North Lincoln, was fully exhibited. Though costing more than the one above named, (\$100,) we think its purchaser would get fully his money's worth. An admirable cheese press, cheap and desirable, was shown by A. F. Beeman of Fitchburg, Mass. A stump machine, with press attached for hay, cotton, hops, &c., Ruggles Patent, G. D. Harris, Proprietor, Fitchburg, was exhibited by A. F. Beeman. It is a machine of immense power, constructed on wheels for the convenience of being drawn from place to place. It is designed for extracting stumps, moving large rocks, buildings, &c. It is arranged to be operated by hand or by applying any team. While viewing its immense chains, its heavy iron gear and staunch wood work, we were surprised to hear the small sum named for its price by the exhibitor, (\$125.)

Several good specimens of Smith work came under our notice. We found some good looking side and elliptic carriage springs, with the name of James Williams, Readfield, attached. The elliptic made of one leaf only. No statement found to accompany them. Are these better than the common ones, who knows? A set of Coopers' edge tools, by B. R. Mowry, Union, were evidently made both for show and use. With such tools, who would not be a cooper?

Pleasure and business Carriages made in several places in the State, show in no wise behind other manufactures in these days of progress.

Palmer's Threshing Machines, when driven by Whitman's Horse power, is a most efficient thing. This machine has an important improvement in the *shoe*, and screening apparatus.

C. E. Ricker of Brunswick, exhibited a Corn Sheller, that for ease of working and efficient action, is an improvement on any thing we have before met for that purpose. It is compact, light and durable. (Price \$8.) Wakefield's Hand Corn Planter, by J. A. Varney, Brooks, is an unerring machine. Doubtless the best one yet.

A word here for the ladies, in the mention of Tyler's Patent Washing Machine, for washing and wringing clothes. We are not prepared to say this is not better than any of the *thousand and one* that have preceded it, and for the most part "gone to the shades." Z. S. Patten, Bangor, would be happy to furnish any lady with a machine, and for aught we know, "a hand to turn". But we must hasten to the more weighty matter of

Plows. This Committee is believed to have been originally made up of a majority of plow-makers—a condition of things that was viewed by at least one of the Committee with forebodings of discord. But perhaps fortunately for the unanimity—the *oneness* of spirit in which this is conceived and presented, these gentlemen mechanics take no part in this pleasant, closing duty. We "practical farmers," who break, demolish, criticise, condemn without stint all these things that come in our way, have a clear field of it, and mean to use the largest liberty. The difficulties that a Committee encounter in this part of their duty, under the existing state of things in this young society, are many and great. After doing our best, we can have no surety, no settled conviction, that we have done justice to the parties—to the manufacturer or the farmer.

Plows were entered by eight manufacturers, all within the State. The Committee desirous of seeing their practical workings, repaired to the field at the hour announced for the plowing match, being an early hour of the day, and with long patience waited the moving of so large a body as a State Agricultural Society in field assembled. The day wore on, and near its close we had the satisfaction of seeing several plows turn successive furrows. The soil of the field varied from a clay loam to a heavy clay.

No instrument was provided to test the resistance made by the plows in doing a given furrow.

Here we cannot do better than quote from the report by an able Committee appointed by the State Agricultural Society of New York, who assembled at Albany, June, 1850, for the purpose of a trial of plows:

"We would earnestly invite the attention of manufacturers of plows to the necessity of adapting their implements to *special purposes*. It is a great mistake to suppose that the construction of a plow 'of all work,' as it is called, is possible. The different circum-

stances under which plows must be used, and the different objects to be attained, render a difference of construction absolutely necessary. For instance, clayey and tenacious soils ought to be thoroughly pulverized, and to effect this, they must be plowed with a deep and narrow furrow, and left as light as practicable. Sandy soils, on the other hand, should be merely turned over, to expose a fresh surface to the atmosphere, and to bury the surface vegetable matter, without pulverizing or making the soil more loose—its lightness being already too great to prevent the escape of the æriform and liquid matters which constitute the food of plants. It may be observed, too, that plows of somewhat different construction are required for rough and smooth land; a shorter implement, especially, being required for the former situation, in order to adapt itself to the inequalities of the surface. It is obviously impossible that the same plow can fulfil such antagonistic conditions; and it therefore becomes necessary to ascertain what are the best plows—not for general purposes, but for the various special purposes to which they must be applied.”

We endorse the above as being founded, in the main, in truth; but we apprehend Maine farmers are hardly ready to listen seriously to these notions. Most farms embrace a variable soil, so that a sod-plow even, must give place to another when it has accomplished the particular piece for which the maker designed it. Then for *fallows*, or old ground, another and different set of plows must be provided.

The same Committee we quote above, confess to have found a plow that appears to combine in a remarkable degree the somewhat opposite qualities of ease of draft with pulverizing power, burying the vegetable matter very thoroughly; is not expensive; the workmanship is of the best quality; easily repaired; its use is easily acquired by the plowman. It is steady in its motion, requiring little labor on the part of the plowman, and is susceptible of most accurate adjustment. It is no part of our business to show how these positions harmonize. This last discovery is a valuable one—finding so many good points grouped in one implement. This eases us off a little from that fearful condition of things, when a farmer must have a dozen or more plows to make up an available assortment.

But how stand our Maine plows, when compared with one having acknowledged “good points”? When, where and with what results



have they been tested to determine their absolute or relative ease of draft? We know it to be true, as discovered at Albany in 1850, that plows may be had, one plowing with which, better fits the ground for the seed than two plowings with some other implement; and yet this other may be a general favorite in some locality. It is understood that the most of the plows shown at Bangor are favorites in particular localities. Some of them we know to be so. How much does this circumstance prove for them? What is public opinion worth on this or any other subject, when said public opinion is gauged to a low and unworthy standard, and is all wrong? We ask these questions, thinking them pertinent to the case,—not assuming to answer them ourselves. We admire to see an Awarding Committee in a condition to state the reasons that govern them in making their decisions. But with this attempt to shadow forth our ideas touching the matter of plows, can we be excused for leaving the whole thing about in the condition we find it?

The fact of a majority of the plows presented, coming to the work without being equipped and adjusted for this particular service, and unequal to the size of furrow they were urged to carry, is an extenuating circumstance, and should be remembered to give, in the public mind, no undue advantage to the more successful implements from the results of one trial.

*A little reform needed.* Farmers should set their faces against the practice of taking plows from the manufacturer, with the working surfaces in the rough state in which they come from the casting room. The farmer's method of grinding and polishing costs him from three to ten dollars; whereas the manufacturer could do it for the fraction of one dollar.

On Mowing Machines, we report three presented—Hallingbeck's, Manny's and Allen's,—all with the latest improvements, and well endorsed by those who have witnessed their operations. We regret the late season of the year prevented us from testing their respective practical worth. Each machine seemed built for durability. This is essential to the farmer, who is often turned off with implements requiring repairs before they are fully tested, by which he is discouraged from availing himself of many worthy improvements, and thus the sale of articles deserving public patronage is prevented. Our attention was attracted by the simplicity, lightness and great



durability of the Hallingbeck machine, which was constructed, as alleged, of the best of wrought and cast iron and steel. No wood used except for the pole and driver's seat.

When we consider the large number—about ninety—mowers and reapers entered at the late trial at Syracuse, N. Y., for premium, it is with pleasure that we say to our brother farmers, there is an encouraging prospect that these important labor-saving machines are being improved to work to our general satisfaction, so as to supercede in most cases the use of the hand scythe. We consider it an object worthy the attention of this society, and we would recommend that an encouraging premium be offered for a mowing machine of the simplest construction, of the greatest durability, easiest draft, the least trouble in its operation, best adapted to cut all kinds of grass whether lodged or standing, on level ground or uneven, and with the desired uniformity and shortness, and the machine of lowest price.

All these points are essential, and should each and all of them be considered in governing an award. We believe these points can be satisfactorily attained,—for what will not the skill of the mechanic accomplish, when called in requisition by so potent an interest as the agricultural.

Care should be exercised to clear our mowing fields of the loose stones and other useless obstructions, and in laying down grounds, to leave them as even and level as practicable. A great saving in labor and grass may thus be had, even in hand mowing, and in the same proportion with a machine.

We often see more trouble and expense occasioned to a hand scythe by one loose stone, than would cause the removal of a cart-load of them from the field at a proper season.

All of which is respectfully submitted.

CALVIN CHAMBERLAIN, *Chairman.*

## SLATE.

*Statement regarding Slate from the Bangor and Piscataquis Slate Company, at Brownville.* This company possesses a territory of some one hundred and eighty acres, on which they have a workable vein known to be more than eighty yards wide, and in length, one mile, save three rods, while its average perpendicular depth, from the present level of working, cannot be much short of five hundred feet, showing that the material is inexhaustible for ages to come. A statement in writing, signed by all the principal slaters of Boston, is now in possession of the writer, stating that the slate from Maine are in all respects equal, and in some superior to any slate produced in market from any known country. In fact, the world is hereby challenged, to produce an article of slate, which after being submitted to any competent test, shall be pronounced superior to this. These slate can be procured at the quarry at any time, and of any size, from 16 by 8 up, at \$3 per square, while smaller sizes, though of equal quality, will vary from \$2 to \$3 75 per square. A square of slate, as sold, will cover one hundred square feet of roof. The weight of a square is about six hundred pounds. Two dollars per square will be added if delivered in Bangor. The expense of nails to lay a square is from twenty to twenty-five cents; 4d nails generally used, except when laying slate over shingles, then 5d or 6d are used.

It is well known that the county of Piscataquis can furnish slate for the whole United States, if not the whole commercial world, and I predict, that more slate will be shipped from the port of Bangor in Maine, than has ever been from the port of Bangor in Wales. At present, the transportation from the quarry to the shipping port at Bangor, is done by horse teams, for which the sum of \$5 per ton is paid. With this heavy charge for inland transportation, the slate cannot be afforded at Bangor for less than \$5, and at the Atlantic towns and cities, as far south as Boston, \$5 50 per square.

If, however, a railroad was built on which transportation could be done for \$1.50 to \$2 per ton, the company would guarantee never to ask more than \$4 per square in Bangor or Atlantic cities, thus effecting a saving to the community, which would be sufficient in a very few years to build a railroad, besides affording them the best and the cheapest material for roofing in the world. With a railroad

from Piscataquis to Bangor, there is no place in the present known world from which slate can be sent to Boston, New York, or any Atlantic city, so cheap as from Piscataquis.

Now if my statements of the inexhaustible supply, of the unsurpassed quality, and the lower cost at which this article can be produced in market, be true, and I know they will be found so, after the fullest investigation, is there not a sufficient object to build a railroad to Piscataquis? If these are not considered sufficient, the Hon. David Pingree, proprietor of the Katahdin Iron Works, has often told the writer that he would alone give a railroad to Bangor a yearly business of \$40,000.

S. E. CROCKER, *Agent B. and P. S. Co.*

## YORK COUNTY SOCIETY.

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The eleventh Annual Show and Fair of this Society was held at Saco, October 13, 14, 15, at their enclosed grounds. The amount of stock shown was less than in some previous years, but the quality was, as a whole, very good; the exhibition at the hall excellent.

### LIVE STOCK.

The reports of Committees on Stock are mainly devoted to awards of premiums, with occasional notices of the animals shown. A few suggestions of general interest are annexed.

The Committee on Cows and Heifers remark that "the number of cows and heifers entered for premium was very limited. When we consider the comfort of good cows and their value as a matter of profit, and when so much depends upon them in the rearing of good stock, is it not a little surprising that there should not be interest enough among the farmers of old York, to bring together at the annual show a larger representation of these useful animals?"

Hon. Seth Scamman, of Saco, exhibited his entire stock of cows and heifers, consisting of eleven cows and four heifers. These animals were of good size and color, and bore the marks of good breeders, as well as good milkers, and added much to the interest of the exhibition. Your Committee would most respectfully suggest the propriety and importance of offering a premium for the best entire stock of the farm. Almost any one may produce a good cow, or a good pair of oxen; but is it not important to see the entire stock good, and to encourage this, would it not be advisable for the society to offer a premium for the same?"

## SHEEP.

The Committee on Sheep and Swine report, "that there were but two entries of sheep. One lot of six in number, by B. F. Pease of Cornish, of Leicesters, pure blood, which we consider very fine for mutton. Their size is large, weighing about 150 pounds each. We find these sheep to be very docile, of strong constitution, and well calculated for our climate. We would recommend to the farmers of York county to call on Mr. Pease, and examine for their own satisfaction, and we have no doubt but they will feel well satisfied for their pains.

We award him the first premium.

The other entry was made by Loren Foss of Saco, which was twelve in number, of the native breed. These sheep attracted the attention of your Committee, especially by the manner in which they were arranged, being all tied up to the rounds inside of a long hay rack, with the Captain and Lieutenant at the head, tapering off with six twin lambs, who looked as though they never spoke a wicked word in their lives. They were a very handsome flock of sheep, and your committee award him the second premium."

## SWINE.

"There were nine entries of Swine. Samuel Milliken of Saco, offered one breeding sow, two years old last July, a cross of the Suffolk and Grass breed; has had four litters of pigs, forty-nine in all, with the last litter by her side, being seven weeks old. This sow is of good size, and possesses a very gentle disposition, so much so that the owner was enabled to take the pigs up in his arms without the mother showing that hoggish disposition which we often see manifested. We think her to be a fine breeder, from the fact that she has been enabled to raise up her whole number of pigs, without causing the death of one of them.

We award to her, the first premium.

Thomas Dyer, 3d, of Saco, presented one fine breeding sow, two years old last April, of very large size, a cross of the Suffolk and Berkshire. She has raised four litters of pigs, thirty-six in all, some of which when seven months old, weighed over three hundred pounds; she having her last litter of nine very fine pigs by her side.

We award Mr. Dyer the second premium.



Elisha Hight of Saco, offered one very fine fatted hog, about ten months old, judged to weigh, when dressed, four hundred pounds, the owner stating that he had cost him about twelve cents per day to fat him, and has gained two pounds per day since he has kept him. If this be the fact, we don't see any good reason why we are asked sixteen cents per pound for swine's meat.

We award Mr. Hight the first premium.

Seth Scamman of Saco, offered five pigs as being the best litter, part of the native, and part of the Suffolk breed. They were very fine pigs, showing conclusively to our minds, the truthfulness of what the owner states, that it was no use to cheat the pigs. We award to him the first premium on pigs.

Samuel Milliken of Saco, presented seven fine pigs, of the Suffolk, Grass and Berkshire breed, very docile, for which we give the second premium.

There were also other lots of swine entered. One of seventeen in number, by Frederick Beach of Saco, of nice, large size, fattening hogs.

Another by Benj. W. Robbins of Biddeford, four and one half months old, from Columbia county, New York; as the society has offered no premium for such lots of hogs and shoats as these, your Committee could not feel justified in awarding premiums to them."

#### ON HORSES, ENTIRE, WORKING, &C.

The Committee on Horses report, one by Timothy Tarbox of Buxton, called "Black Hawk," jet black, five years old, said to weigh 1,086 lbs., appeared to be of good disposition and kind, but wanted training; this horse had many good points about him, was raised on the Kennebec, kept in Cumberland county last season and in Buxton, (this county) this season for a stock horse. This horse is said to be after the old Black Hawk, out of a Morgan mare.

Albert Whitney, Saco, enters for the best Stallion. "Is a cross of Morgan and English, the Dam was a Morgan and the Sire a cross of the English," said to be five years old, is a good chesnut color with beautiful, fine, short, glossy hair, very round and nicely made, good spirits, fleet, and is well calculated for a good business horse. This horse was raised in Oxford county, has been kept in Saco, the past season for a let and stock horse.



Silas Burbank, Limerick, carriage horse. This is a light grey four years old, weighs 980 lbs., 15 hands high, was raised in Parsonsfield by L. Ames. His Dam was the "Marston Ames" breed, and his Sire the "Harpinus," said to be an imported breed. This is a thick stocky horse of his age and generally well framed except being a grain low on the withers; he has been driven but very little, yet takes the bit well and comes up in fine style, and is naturally a gay and rich appearing horse, particularly when he takes a moderate gait.

R. P. Tapley, Saco, for carriage horse, presented a grey Messenger and Morgan mare, seven years old, raised in this county, weighs 1,125 lbs., very kind, free driver, good form and action, and is considered by your committee an excellent mare.

B. F. Pease, Cornish, a dark grey mare five years old, small size stocky and remarkably well made for a work and common business horse. Although small this animal is said to weigh 925 lbs. and is of the native breed, which speaks well of our natives.

Harvey Page, Parsonsfield, carriage horse, dark grey, five years old, weighs 928 lbs., raised in West Parsonsfield, by Mr. Doe, bought last fall by Mr. Page, is of the Harpinus breed, generally well made and appears to be entirely hardy and tough, but wants training to be made a good carriage horse.

John Cleaves, Saco, for carriage horse, enters his large Grey Gelding, raised by him in Saco, eight years old, Messenger and native breed, large size, good figure, full of life, travels easy for a roadster, and is very fast for this county—taking a premium at the last fair in Saco for trotting.

Lewis Pierce, Saco, entered for carriage horse, his beautiful Roan Gelding, "English Morgan" six years old, 950 lbs. weight, said to have been raised by a Mr. Adams of Buxton, until he was three years old. This horse has fine action, is very fleet, moves easy and gracefully, is of good form and proportion, and considered by your Committee one of the best horses in the county.

Lawrence Jordan, Saco, entered his fine pair carriage horses, being raised out of the county, were not entitled to a premium.

Thomas P. Sawyer, Saco, entered a pair work horses, they also were raised out of the county, but were considered a good firm pair of work horses, and capable of doing well their duty.

Moses Milliken, Biddeford, entered a pair of horses for work, well

matched, good size, middling age, in good flesh well worked on, and are capable of performing a large amount of labor.

#### MARES AND COLTS.

Best breeding mare, with colt by her side, E. T. Boothby, of Limington, first premium.

Gilman Wells, of Wells, second premium.

Best two years old colt, James Leavitt, Saco, first premium.

Peter Hill, Buxton, second premium.

#### MANUFACTURES AND INCIDENTALS.

From full and lengthy reports on Manufactures and Incidentals, are selected the following:

Mrs. Margery Boothby of Saco, fifty-seven and a half yards domestic flannel that was spooled and warped and drawn in, the quills quilled and wove, in seven days and one half, by an old lady seventy-four years old, and she did some house work in the time. This piece of flannel was well spun and wove, and when finished will do credit to the manufacturer.

Rufus McIntire of Parsonsfield showed one jar molasses or syrup made from sweet apples, which the Committee think much superior to either of the specimens of cane syrup entered.

Three of Watson's cheap sewing machines, with Boyd's improvement, were exhibited with specimens of the work made by them. The Committee cannot perceive why these machines may not do the work of the more expensive ones, and become an indispensable article of domestic economy in every dwelling house of our farmers and mechanics. The Committee recommend the Society's Diploma to Messrs. Boyd & Storer for their enterprise in introducing this simple, cheap, and effective instrument for labor-saving, into the county.

Enoch Moody entered an eight spoke wheelbarrow—rim of white oak, sides of white ash, boards of hard pine.

*Improvements.*—Two shoe braces, giving unusual firmness to the legs. Ten bolts, which enable you, should any part of the barrow get broken, or need repairing, to take it apart with greater ease.

Square steel boxes, insuring less friction in using than in the common wheelbarrow.

Folsom & Hooper, Biddeford, a variety of beautiful patterns of oil cloth carpetings. Messrs. F. & H. are entitled to great credit for their skill and taste in producing so good and durable an article. We award a Diploma.

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#### DAIRY PRODUCTS.

The Committee on Dairy Products awarded :

For the best produce of butter on any farm within the county for four months, from the 20th of May to the 20th of September, to Mrs. Mary Roberts of Dayton, the first premium.

To Mrs. Jesse Makepeace of Saco, the first premium for best September butter.

The second premium to Joseph Murphy of Lyman, for second best September butter.

The best butter offered by girls under twenty-one years of age, was made by Miss Ellen M. Lowell of Saco, and we award her a set of silver tea spoons.

The second best was made by Miss Frances Hayes of Buxton, and is entitled to the silver butter knife offered by the Society.

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#### PLOWING.

The Committee on Plowing report :

Five double teams, one single team, and one two horse team were present on the grounds, and plowed each, one-eighth of an acre. The teams were all good, driven by experienced teamsters, exhibiting their skill in the ease with which they managed their teams.

The same also may be said of the plows used, and the plowmen who guided them. All seemed to vie with each other, to do their work well, adopting the old maxim "that work well done is twice done." And your Committee are gratified to bear their united testimony that *all* the work was *well done*; so much so as to render it somewhat difficult to award the premiums so as to do justice to all.

When we take into the account the dryness of the ground, we certainly feel that great improvement has been made in this important branch of agriculture since the foundation of this Society. There was no undue haste or delay; but the whole performance was managed in a business like manner, just as the farmer would go about his own work in his own field.

Lot No. 7 was plowed by John W. Hanson, North Berwick, with his own plow, No. 9, by double team. Time 47 minutes. We award Mr. Hanson the first premium.

Lot No. 6 was plowed by Samuel Milliken, Saco, with the Hussey plow, No. 4, in 52 minutes, by double team. We award Mr. Milliken the second premium.

Lot No. 2 was plowed by Franklin Scamman, Saco, with the old Varney plow, in 43 minutes, by double team. We award him the third premium.

Lot No. 4 was plowed by Samuel Berry, Saco, with the Fry plow No. 4, in 38 minutes, by single team. We award him the first premium for single team.

Lot No. 1 was plowed by Wm. H. Deering, Saco, with the Fry plow No. 2 $\frac{1}{2}$ , in 36 minutes, by a two horse team. We award him the first premium for a two horse team.

Lot No. 5 was plowed by Joseph Murphy, Lyman, with the Hussey plow No. 4, in 57 minutes, by double team.

Lot No 3 was plowed by Charles L. Gilpatrick of Biddeford, with the Fry & Hussey plow, in 39 $\frac{1}{2}$  minutes, by double team.

SETH SCAMMAN, *Chairman.*

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#### ROOTS AND VEGETABLES.

On entering the Hall we came to the display of garden vegetables, made by competitors for the best collection and variety of garden vegetables. First in order was the collection of E. P. Dennett, known for the success attending him in this department on previous occasions; here we find upwards of thirty kinds of vegetables, some of rare and beautiful appearance, and all good specimens. We could but particularly notice his variety of turnips; the yellow stone and white being very nice, and we would recommend all to Mr. Dennett

who wish to improve the vegetables of their gardens. The most valuable seeds for our climate and soil may be found at his place at all seasons.

Next in order we find the collection of our worthy secretary, John Hanscom; fifty-three kinds are here tastefully and neatly arranged for exhibition, evincing a large share of industry and skill in their production from a light soil with but little manure,—and a portion of which were raised from the application of a small quantity of *Poudrette*, alone, for manure, as appears from the statement of the exhibitor.

Moses C. Donnell of Newfield, exhibited quite a variety of good vegetables, which with the other articles furnished for other departments of the Fair, gave your Committee a very favorable opinion of Mr. Donnell's skill and interest in agricultural pursuits.

Our attention was next given to the squashes; and such squashes! here they were, raised from, brought from, almost every land and clime. Most conspicuous of all, however, were the huge elephant looking specimens presented by Isaac Bickford of Biddeford, claiming their parentage from the western coast of South America. Next were the California species, twelve in number, from one seed, all dressed in their modest Quaker looking jackets—these were presented by Richard Gordon of Saco. Next in order was the *load* of Tracy Hewes, a family of fifteen from one seed—fourteen only were present—the other and largest one, as was stated, having *stepped* out to garnish the pantry of some one who raises squashes in the night. Further on and we meet the specimens of Mr. Edward Rumery, claiming their descent from the Far West; they were a very rich looking variety. There were other specimens of different individuals, all creditable to the producers.

Leaving these with moistened mouths, we look at the pumpkins; and if that good old fashioned luxury “pumpkin pie” is not plenty this fall, it will not be for want of material. Oliver Hanscom of Lebanon exhibited one weighing fifty pounds, and near to it lay one from the garden of J. E. Lord, weighing fifty-two pounds; and still another from a garden in Saco, weighing fifty-five pounds, and so on to the end of the row. Among the contributors to this department of the Fair, we notice the names of Seth Scamman, Mark Prime, Isaac Bickford, Moses C. Donnell, and others.



Leaving these we look at a few samples of potatoes. This valuable article in the line of vegetables seems to have escaped the attention of our cultivators, or in some way rendered itself obnoxious, for there were but two samples present. One a basket presented by George W. Hall of Saco, from California seed. They appeared to be of the long red variety, differing from the common kind in the number of their eyes; are said to yield well and are excellent for the table. The other basket was presented by Hon. Seth Scamman of Saco, called the Jackson potato, which your Committee think (if there is anything in a name) will withstand all kinds of corruption. They appear sound and healthy, and are said to be an excellent kind.

*Cabbages.*—This department was well filled with large and solid specimens from the gardens of John M. Goodwin, Wm. Thompson, E. P. Dennett and others. Here was the Battersea, Flat Dutch, Sugar Loaf and Savoy from E. P. Dennett's, all claiming a notice for their excellence.

Adding not a little to the variety of the show, were the Kohl Rabbi, offered by Rev. W. P. Merrill of Biddeford, and others. Celery, beets, carrots, and turnips, were presented by different persons, all doing credit to the producers, but none more so than the beets presented by Elias O. Wormwell.

*Sorghum Sucre.*—Here was a new feature in the exhibition. John Hanscom, Edward Rumery, and Owen Stacy, showed what they had been doing to bring down the price of *sweetening*. Each of these gentlemen produced cane long enough to reach the tallest kind of a price, and if sugar and molasses do not come down in the market, it will not be for the want of a cane to reach them. Of the merits of this article your Committee are not prepared to speak. We are assured by the gentlemen, of their determination to test its value by still further efforts.

There were two specimens of cranberries which commanded the notice of your Committee. One from S. S. Milliken of Buxton. Of this valuable *fruit* we can hardly speak too highly. For information as to culture, we refer you to the statement of Mr. Milliken accompanying this report.

The other lot was from Mr. Reuben Davis, Lyman. The berries



were well grown, but no statement accompanied them. We know nothing of the manner of cultivation.

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*Mr. Milliken's Statement on Cranberries.* The specimen of cranberries, presented for your examination, I gathered from vines transplanted and cultivated in the following manner :

The vines were taken up late in the fall, in sods, about two feet square, and from three to four inches thick, in a pasture where they grew spontaneously. These I transplanted in rows, about two feet apart each way, in a portion of a field where the soil was poor, and the sward had never been broken. I removed the turf sufficiently to receive the sods, leaving them a little above the surface of the ground; the whole covering a space fifty feet long by twelve wide. From this spot, which was a little lower than the surface around it, I dug a small drain, so that no standing water should cover the vines in the spring, as my object was to see if they could be made to flourish on land not moistened by adjacent springs, or flooded by heavy rains. The spring following, I spread on fine sand about two inches deep, mostly between the rows, partly to kill the grass, but mainly to facilitate the rooting of the runners. The vines began to spread rapidly, and soon covered the space between the rows, and on the first of September last, appeared to be in a very flourishing condition, and promised a yield, nearly, if not quite equal to that of natural meadows. No manure of any kind was used, except the sand above mentioned, which I consider sufficient if the soil contains a good share of clay or muck. As the hoe cannot be used where the vines have spread over the surface, an occasional coating of sand would be beneficial. Although the cranberry in its natural state, is the product of wet lands, I think it may be profitably cultivated in comparatively dry soil, if treated in the above manner.

S. S. MILLIKEN.

BUXTON, October 3, 1857.

## FRUIT AND FLOWERS.

The Committee on Fruit and Flowers report :

The season has been unpropitious for the growth and maturity of fruits, and to this fact may perhaps be attributed the diminished amount exhibited at the present Fair. The quality of that exhibited entitles the exhibitors to great commendation for the skill and perseverance which have resulted in so good success in a year characterized by obstacles to the cultivation of fruit.

We award for the best grown and greatest variety of apples, the first premium to Moses C. Donnell; second premium to Lewis McKenney.

*Pears.*—For the best peck, to Charles Nutter; second premium, to Joseph Smith. For the best dish of pears, the first premium to Daniel Smith, Jr., of Saco.

To Eli Smith, basket of apples, first premium.

The second would have been given to Dr. J. M. Milliken of Scarborough, but as he lived without the limits of the Society, the Committee recommend a Diploma.

*Grapes* —For the best foreign grapes, to S. L. Goodale.

*Flowers.*—To Mrs. S. L. Goodale, for six boquets of flowers; to Francisca Boyd, for boquet.

## REPORT OF COMMITTEE ON GRAIN, &amp;C.

The entries for premium are limited to Indian corn. There were specimens of other grains on exhibition at the fair, but none entered for premium.

Indian corn may properly be considered the staff of life by every Maine farmer, for upon his crop of corn he relies to fatten his pork and poultry, and to some extent to feed his neat stock and horses. It appears from the statements of the competitors that success in this branch of husbandry depends very much upon careful and judicious cultivation; for here are soils differing widely in appearance, and yielding excellent crops under nearly the same treatment. Something undoubtedly depends upon the variety of seed selected for planting, but the main chance for a good crop is a

liberal application of manure, with a proper and seasonable cultivation of the soil.

Mr. Joseph Frost of Eliot, harvested two hundred and seventy-eight bushels of ears of sound corn, and fifteen bushels of small corn, from two acres planting, on gravelly loam, being a yield of one hundred and forty-six and one-half bushels of ears to the acre, and to him we award the first premium.

Mr. Frederic Beach of Saco, harvested two hundred and thirty-five bushels of ears from two acres planting, on pine plains, being one hundred seventeen and one-half bushels of ears to the acre, and to him we award the second premium.

For the Committee,

IRA C. DOE.

*Statement of Mr. Frost.*

ELIOT, Nov. 10, 1857.

*To the Committee of the York County Agricultural Society on crops :*

The undersigned respectfully submits the following statement of a field of corn, with a mixture of beans and pumpkins.

My mode of cultivating corn has been changeable for the past five years, by spreading the manure, plowing it in under the sod, then spreading on the surface and harrowing thoroughly; plowing, spreading on the surface and harrowing thoroughly and applying plaster or ashes to the hill, and my average yield has been fifty bushels of corn, and a fair crop of beans and pumpkins to the acre.

The field entered for premium the present year, has a gradual slope to the road. The soil is a gravelly loam, and about half of the lot was planted to corn the past year, and the remainder was in grass, and we harvested a light crop of hay. The land was plowed from the fifteenth to the twentieth of May, and thirty-eight loads of long and compost manure carted on, spread, and thoroughly harrowed, then furrowed with a two winged plow. Three feet distance between rows, and twenty-four loads of compost manure, made by hogs, dropped three feet between hills. We began planting May twenty-sixth, and finished the twenty-eighth. The seed planted was

eight quarts of King Philip, and seventeen quarts of a seed I obtained from Milton, N. H., many years ago. The corn was dropped by my own hand, four seeds to the hill, and occasionally a pumpkin seed. Eleven quarts of pea beans were planted, and three seeds to the hill. Cultivated four times in each row. The first hoeing was done by clearing out the weeds, without drawing any mould about the hill; second hoeing after the cultivator was to make a very small mould. I would remark that the crows took up about the fifteenth of June, two hundred hills, which were afterwards planted to potatoes. The field planted contains two acres ninety-eight rods. The corn harvested Oct. 14th to 20th, and amounted to two hundred and seventy-eight bushels of ears of sound corn, and fifteen bushels of small corn, twenty bushels of pea beans, and seven cart loads of fifty bushels each, equal to seven tons of pumpkins. The pressure of labor in getting my salt hay, prevented my cutting up the corn or stalks until after the corn was harvested, therefore the stalks were reduced in value. The amount of stalks we estimate at six tons. The Milton corn is eight rowed, and resembles the King Philip corn, but it yielded twenty-five per cent. more than the Philip corn, soil, manuring and cultivation all the same.

## THE CROP.

117 bushels of corn, at \$1,00,	.	.	.	\$117 00
20 do. beans, at \$2,00,	.	.	.	40 00
7 tons of pumpkins, at \$5,00,	.	.	.	35 00
6 do of stalks, at \$5,00,	.	.	.	30 00
				<hr/>
				\$222 00

## Expenses of cultivation and harvesting.

2 men three days, 4 oxen three days plowing,	.	.	.	\$12 00
2 men three days, 4 oxen three days carting on manure,	.	.	.	12 00
2 men two days, 2 pair oxen 1 1-2 days spreading and harrowing in manure,	.	.	.	7 00
Man, boy and horse furrowing 1 day,	.	.	.	2 00
2 men three days, 2 pair oxen three days, dropping manure in the hill,	.	.	.	12 00
10 days men planting,	.	.	.	10 00
3 days boy dropping beans,	.	.	.	1 50
Man, boy and horse 2 days at holeing,	.	.	.	4 00

12 days hoeing,	.	.	.	12 00
8 days harvesting corn,	.	.	.	8 00
6 days harvesting beans,	.	.	.	6 00
2 men and pair oxen one day, harvesting pumpkins,				3 00
8 days cutting, binding and storing stalks,	.			8 00
Pair oxen one day,	.	.	.	1 00
62 loads manure, (deduct half for next crop,)	.			47 50
				\$145 50

JOSEPH FROST.

This may certify that we, the subscribers, have assisted in the introduction, harvesting, and measuring of the crops described in the foregoing statement, and it is true to the best of our knowledge and belief.

JOSEPH G. BUTTERS,  
HENRY M. FROST.

Eliot, Nov. 13, 1857.

This may certify, that I have measured the lot of land that is within described, and the statement is true to the best of my knowledge and belief.

J. D. FROST.

Eliot, Nov. 13, 1857.

## STATEMENT OF MR. BEACH.

*To the Committee of the York County Agricultural Society on  
Grain, Roots and Vegetables :*

The field of corn from which the sample submitted for inspection was taken, consists of about three acres. It was that kind of land known as "pine plains," or "barren," as many call it. A crop of winter rye had been harvested for the three years preceding the present one, from the field, and this was the only crop taken from the soil since it was cleared. I have spread some manure, and ploughed it in, each of the years I sowed the field to rye; but this year I spread no manure, but applied a quantity in the hill from my hog yard. Planted between the 15th and 20th of May, hills about

three feet by three and one-half feet apart, with the seed known as the Dutton corn. Not having seed enough to plant my whole field, I procured a variety called King Philip, and planted the remainder. A part of the ground planted to the King Philip was not so well manured as the other portion of the field, yet I became satisfied that the Dutton corn is preferable to the King Philip, being earlier, and giving a larger crop with the same cultivation.

I gathered from the ground planted mostly with the Dutton, two hundred thirty-five bushels of ears. The corn was very sound and ripe by the middle of September. I have kept no exact account of expense of cultivation, but am satisfied corn can be profitably raised on plains.

Yours, respectfully,

F. BEACH.



# CUMBERLAND COUNTY SOCIETY.

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The twenty-seventh Annual Show and Fair of the Cumberland County Agricultural and Horticultural Society, was held in Portland, on the 20th and 21st of October, 1857.

The show of cattle, horses, sheep and swine, was in pasture, corner of Green and Portland streets. The show was not so large as at some preceding shows, but was of superior quality. The plowing match was on the Knight farm, at Woodford's Corner.

The exhibition of manufactured articles, country produce, &c., was at Lancaster Hall; opened on Wednesday and continued until Friday evening. The show of vegetables was the best ever made by the Society.

The other articles were of excellent quality; but the variety was not so great as formerly.

The Annual Address before the Society was delivered by Hon. CHARLES J. GILMAN of Brunswick, at City Hall, on Wednesday evening. Subject—"The Effect of Agriculture upon a Nation's Prosperity, and the Importance of Government lending a fostering care to this great interest."

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## FROM REPORTS OF COMMITTEES.

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### WORKING OXEN.

Best team of working oxen, not less than four in number, owned by one person, R. C. Webster, Portland.

Second best do., John F. Anderson, South Windham.

The Committee state that while they consider Mr. Webster's the best team, Mr. Anderson's make the best pull upon the drag.

Best pair of working oxen, not less than four years old, regard

being had to size, strength, docility, discipline and fitness for all kinds of farm work, John M. Drinkwater, Cumberland.

Second best do., S. Warren, Scarborough.

The Messrs. Deering of Westbrook, and the city of Portland, had each an eight ox team of nice, well matched oxen, which were very large.

Messrs. G. & L. P. Warren of Westbrook, had a six ox team of very heavy, nice, well matched oxen—a team hard to be beat.

J. B. Brown of Portland, and the town of Westbrook, had each a very good four ox team of large size—Mr. Brown's being very nice.

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#### FAT CATTLE.

Best beef animal fattened in the county, manner of feed, and expense thereof considered, Horatio Southgate, Scarborough.

Second best do., Otis Trickey, Westbrook.

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#### STEERS AND BULLS.

R. H. Whiting, Falmouth, best three years old steers, girting seven feet two inches.

Wm. Lamb, Windham, best two years old steers, girting six feet seven inches.

Charles Hunnewell, South Windham, second best steers, girting six feet.

S. Warren, Scarborough, best one year old steers, girting five feet.

J. F. Anderson, Windham, second best steers, girting five feet.

Charles Hunnewell, South Windham, first premium on bulls.

J. F. Anderson, South Windham, second premium, do.

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#### COWS AND CALVES.

Best dairy cow, Gen. E. T. Smith, Gorham.

Second best do., John F. Anderson, Windham.

Best stock cow, John F. Anderson, Windham.

Second best do., C. Hunnewell, South Windham.

Third best do., E. G. Wagg, Yarmouth.

Best two years old heifer, A. P. Haskell, Westbrook.

Second best do., H. G. Prince, Cape Elizabeth.

Best one year old heifer, G. Owen, Cape Elizabeth.

Best heifer calf, A. Hight, Scarborough.

Second best do., C. Hunnewell, South Windham.

Best bull calf, A. Hight, Scarborough.

Second best do., G. W. Harmon, Westbrook.

Best steer calf, S. & W. Warren, Scarborough.

M. A. Fales, Westbrook, exhibited a very large heifer calf.

C. A. Stackpole, Jr., Gorham, had a very nice two years old heifer on the ground.

M. Adams and J. Brackett, Portland, showed some fine milch cows.

As a whole, the show of cows and calves was fine.

#### TOWN TEAMS.

Best town team of eight oxen, owned in Gorham, Rufus Mosher, first premium.

Second best do., owned in city of Portland, Moses Adams, second premium.

#### SHEEP AND SWINE.

The entire Committee on Sheep and Swine appeared at the appointed time and place, and proved to be the only Committee which retained its original names,—an act of duty in each member, to be noticed in these recreant times. It proceeded upon its appointed task with the earnest diligence of determined spirits; and here are the results of the investigations.

John Webb, Windham, best buck and five grade Merino ewes.

To the sheep of Charles Hunnewell, Windham, entered as Cotswold—three full blood and three grades—two premiums were awarded; one for best Cotswold, and one for second best ewes.

Joseph M. Drinkwater, Cumberland, second premium.

Thomas Huston, Portland, best grade Suffolk boar.

Moses Adams, Portland, second best do., and for best pigs.

John Reed, Westbrook, grade Suffolk pigs.

J. F. Tapley, Westbrook, for a noble barrow pig, grade Suffolk, weighing three hundred and eighty-five pounds at the age of seven months, a gratuity.

A. P. Haskell, Westbrook, for a remarkably fat Suffolk and Essex grade barrow, a gratuity.

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### HORSES.

Best stallion, R. Huston, Falmouth.

Best breeding mare, G. & L. P. Warren, Saccarappa.

Second best do., Benjamin Cole, North Yarmouth.

Best work horse, J. Webb, Jr., Windham.

Best family horse, Thomas Seal, Jr., Westbrook.

Best horse for speed, action and spirit, Doct. S. H. Tukesbury, Portland.

Best three years old colt, Eben Hawkes, Windham.

Best two years old colt, A. B. Rand, Cape Elizabeth.

Best one year old colt, B. Cole, North Yarmouth.

The Committee make honorable mention of many others.

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### PLOWS AND PLOWING.

The plowing match took place at Woodford's Corner, on the Knight's farm, on Wednesday afternoon. The two prizes were awarded to Lorenzo D. Libby, Portland, first premium—time thirty-nine minutes; second premium, to N. L. Marston of Windham—time forty-nine minutes. Space plowed, one-eighth of an acre.

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### REPORT ON GENERAL FARM IMPROVEMENTS.

The Committee on general Farm Improvements having entered upon the duties assigned them, submit the following as their first report:

Fifteen entries, from eleven different towns, have been made for the Society's premiums on the "greatest general farm improvement." They are from different parts of the county,—from the seaboard at Yarmouth, back to the hills of Otisfield, Harrison, and Bridgton; thence to the seaboard again at Scarborough; embracing every variety of soil, from a stiff clay to a coarse gravel. The improvements entered upon by the contestants are very diverse, to wit; in buildings, fences, underdraining, renovating old pastures and fields, clearing and subduing new lands, leveling banks on the sea shore and filling up gullies which the ever busy hand of time had been centuries in carving out, thus rendering accessible and available, lands which before had been nearly worthless; reclaiming swamp land; renovating and planting new orchards. In short, nearly all branches of farm economy came in for a share in this general reformation.

The Committee in making their first tour of observation and visit to the farms on which the improvements are to be made, considered themselves peculiarly fortunate in the accession to their number, of the Secretary of the Maine State Board of Agriculture, S. L. Goodale of Saco, whose practical experience and close observation rendered them material aid. They would also mention with pleasure the cordiality with which they were received, not only by the applicants for premiums, but by all the farmers, gardeners, and nursery men in their line of travel.

Beginning in Yarmouth, we visited the farms of Capt. John York and James Hutchins. Capt. York, formerly a shipmaster, has left the sea and chosen the less hazardous and more quiet life of a farmer. Formerly, he was content to plow over the *swells*, however high and rough, now he is bent on *leveling*. The *rough* places on his premises are to be made *smooth*. Mr. Hutchins has recently purchased his farm, an old one, and heretofore much neglected. The way he makes the old buildings dance, and the ground hemlock and heath bushes wilt, is an earnest that something is about to be done.

Passing by, we call upon Capt. Young, or rather upon his Cape of Good Hope sheep. The most noticeable part of these sheep are their tails; and such tails! two inches thick, five inches wide, and nine inches long. They are as fat as large, and no doubt adequate to the wants of an alderman's dinner!

Leaving Yarmouth, we passed to New Gloucester, where by



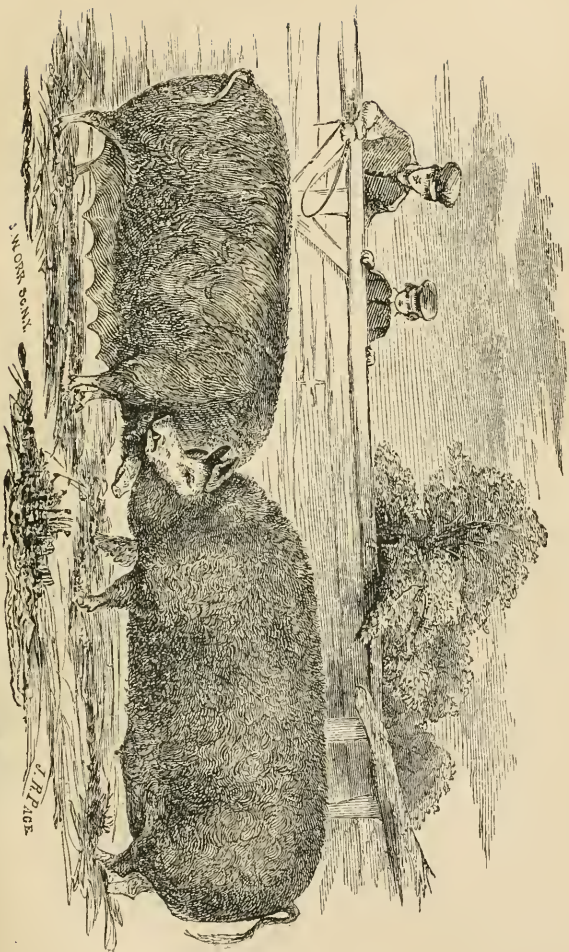
invitation, we visited the grounds of Mr. C. A. Leach, (formerly the Gunnison farm.) Considerable has been expended in ornamenting these grounds. Many choice fruit trees also have been planted; but the destroyer has been there since last Autumn, and a large number of them are gone or materially injured. Mr. L. has commenced an experiment in renovating an old orchard by plowing and manuring, and although the plow was run very lightly, a great number of the roots were broken and now protrude above the ground in all directions. It seems like harsh treatment to destroy so many of the feeders of trees, but the result will prove whether the experiment is practicable; and whether successful or otherwise, it is hoped Mr. L. will make known the result for the benefit of others.

Passing through Upper Gloucester, where we observed a good show of fruit trees, less injured by the winter than those nearer the seaboard, we came to the Shaker village at West Gloucester. Here we were cordially received by Mr. Sawyer and his associates, though we took them by surprise, as the notice of our visit had unfortunately been omitted. We did not examine the whole seventeen hundred acres of their possessions, but confined ourselves to the farm proper of five hundred acres, the garden of five acres, and the mills. The limits prescribed to this report forbid our noticing a tithe of what we heard or saw here and elsewhere; but we cannot forbear speaking of the neatness and order of everything about these premises, particularly the garden, under the special charge of Mr. Hewett Chandler. Lying upon an eastern slope, it has been terraced and made nearly level; trenches have also been dug to the depth of two feet. The crops just starting, (June 17th,) gave promise of an abundant harvest. The mills and garden have, evidently, heretofore engrossed the best efforts of this family. The farm at large, the worn out fields, sward-bound mossy pastures, and the old orchard are now to be renovated, and there is not the least doubt, in the minds of your Committee, that whatever is undertaken will be done well.

Diverging from our route, we step over into Androscoggin county to call upon the "Poland Shakers," of whom Isaiah Wentworth is the leading man. A drizzling rain kept us within doors most of the time, but it could not stop Isaiah's thoughts or tongue, and these seldom move except for some definite purpose. The large stone



BERKSHIRE SWINE.



"LADY BERK."

"SIR ROBERT."



house, a most substantial structure, forty feet wide by ninety long, and three stories high, nearly completed, was examined from cellar to cupola; and from the last named place, we saw, not all the kingdoms of the world, but the greater part of Poland and New Gloucester, not forgetting to mention Isaiah's kingdom of seven hundred acres of gardens, fields, pastures, and woodland. The farmers of Cumberland county may here find the real Devon stock, good enough to please even a Durham "fancier."

We next visited Mr. Holden of Otisfield. His farm is situated on a rather high ridge, and it is worthy of notice that his fruit and forest trees, upon the ridge, are green and flourishing, while in the valleys on either side, and one hundred rods distant, the oaks, beeches, and maples, show a sad array of leafless branches. Mr. H. is adding to his buildings and improving his fields.

Crossing Crooked river and entering Harrison, we find Mr. Henry Buck, making a general fight with stumps, rocks, alders, blackberry bushes, sweet ferns (*comptonia asplenifolia*), and old buildings. The battle is evidently in his favor, for each year he gains a *field*. Beware, friend Buck, lest your outposts become too much extended and difficult to defend.

In Naples, Messrs. John G. Cannell and J. Green, each with an eye single to the Society's premium of \$100, are doing with their might whatsoever their hands find to do, in improving old and clearing new fields, fencing, &c.

Col. J. P. Perley of Bridgton, seeks to win a prize by underdraining, by improved fences, clearing new lands, &c. He will doubtless find a prize in his *land* when underdrained, whether he receives one from the Society or not.

On "Baldwin Plains," we find the Rev. Cyril Pearl; and whatever may be thought of his judgment, his courage can but be admired, in daring to locate upon a spot, at first sight, so unpromising; and yet, sterile and uninviting as Mr. Pearl's lands appear, the wise Maker did not turn off even this nook of creation without providing the means to make it habitable. A sandy plain here,—a rocky ledge there,—and a muck swamp yonder,—all within a stone's throw, when judiciously commingled, with such additions as experience and science dictate, will form a soil which will reward the labor

of the husbandman. Mr. P. has every thing to do,—buildings, fences, and a farm to make. He will doubtless deserve a premium.

We next called upon Mr. Otis Emery of Gorham, who made his entry for fruit trees only. Mr. E. being from home, we could only look at the ground where his trees are not, and are to be.

Next in order are the adjoining farms of John F. Anderson and Charles Hunnewell. Mr. Anderson, bred a city boy, a civil engineer by profession, and a farmer by inheritance, keeps every thing about his premises as might be expected of one of his former pursuits, in the nicest order. His buildings, conveniently and tastefully arranged, have an inviting look even to the passing stranger. Underdraining, improvements on fields and pastures, on neat stock and sheep, are the points on which he relies. Of these we shall speak in a future report.

Mr. Hunnewell is about to improve his buildings, fields and pastures. He has introduced a new style of fence, which promises well on clay lands such as his, or indeed on any land subject to heaving by frosts.

Elisha Newcomb and G. W. Hammond of Westbrook, enter the list as competitors. Mr. N. was from home at the time of our call, consequently we did not learn what improvements he intends to make, but subsequently we learned his entries are for general improvement.

Mr. Hammond enters for general improvement, underdraining and buildings.

In Scarborough, Mr. J. O. Dresser, with a pair of strong arms, and a resolute will, proposes to show how to clear new lands, reclaim spruce pastures, renovate old and plant new orchard trees, reclaim boggy runs, and improve buildings and fences. May his plans succeed, and his labor not be in vain.

We would not forget to mention the very pleasant interview we had with some of the farmers and amateur gardeners at Standish Corner, while stopping there for a night; and to express the hope that the same may be renewed in August or September next year, when the premium farms will be again examined. It would give the Committee pleasure to meet in social conversation, the farmers and others interested in the subject, at any point in the towns, through which they will then pass.

To the politeness of Mr. G. Warren of Saccarappa, we are indebted for an hour's pleasant ramble over his premises. His teams of horses and oxen are such as any farmer may be proud to own. The arrangement of his barns and stables, for the comfort of his stock, and making and preserving of manure, are good. His garden is large and well kept. His fields are apparently in good condition. His fruit trees, however, of which he has many, and a choice selection, are looking badly—like most other fruit trees in the county—from the effects of a hard winter; yet on the whole, this farm will compare favorably with any in the county.

Passing near the State Reform School, in Cape Elizabeth, we took the liberty to intrude ourselves upon the superintendent, Mr. Lincoln, by whom we were pleasantly received. We found him overseeing the construction of a brick-yard, a new branch of industry which he is about introducing for his numerous family of boys. The farm, from a general view, which was all our time allowed us to take, under its present judicious management, gives evidence that it is steadily improving in appearance and in its ability to produce remunerating crops. The bushes, ferns, and water grass with which the pastures were nearly overrun, are being gradually subdued. The old worn out fields are in process of renovation. A system of underdraining has been commenced, by which some boggy, worthless, unsightly swales are made productive land. The garden and five acres in roots look well. The corn and potatoes—seven acres of each, we did not see. Young fruit trees here were considerably damaged by the winter. The barn is very well arranged for the economising in labor in housing and feeding out crops, for the comfort of stock, for preserving manure, &c. After taking a view of the school building, the assembling of the boys to dinner, &c., of which we do not propose particularly to speak, we left, only regretting that the institution is not sufficiently endowed to enable the superintendent to make of this a *model farm*; and of his boys, by a thorough course of instruction and training, *model farmers*.

We are unwilling to close this report—already too long—without addressing some suggestions to our brethren of the hoe and fork—the more especially, as our minds have been forcibly impressed by observations made while passing through the county, in the discharge of our duty.



And first, of FRUIT TREES. That the past winter will be remembered by all fruit growers, as the "hard winter," of 1856-57, no one can doubt. More trees have been entirely destroyed, or permanently injured the past winter, than in the ten preceding taken together. There has been in public prints and in private conversation, much speculation on the subject, but to the present time no satisfactory explanation has been offered. Leaving the mooted question for others to discuss, the Committee recommend to fruit growers not to give up in despair, but to improve by the lesson so forcibly given; *reject the tender varieties, and select such as prove themselves adapted to our locality.* Cumberland county can raise her own fruit, and a large surplus for exportation, and that too, of the very best quality; but it will not be done by attempting to cultivate varieties *designed for some other place.*

Again, of MANURES. While of a few farmers, we can speak in terms of commendation, in regard to their management of manures, of the great majority we must say they are *ruinously negligent* in this respect. The farmer who allows his manure piles to leach and bleach under the droppings of the eaves, and the urine of his stock to pass through a leaky floor and waste itself in the soil beneath; who sees the waste from his sink spout from a stagnant pool under his kitchen window; who, in poverty tones, wishes he was *able* to purchase guano, poudrette, and superphosphate, while the accumulation of years lies under his hen-roost, and privy, and any quantity of bones are scattered about his yards, wherever the last hungry dog chanced to leave them; who sells his ashes for twelve and a half cents per bushel, and receives his pay, it may be, in *tobacco*; who neglects to accept and use the cords of kelp and rockweed which the ocean lays at his feet, gratis; who permits the finny tribes, that periodically visit our bays and rivers, to come and go, without attempting to replace, through their carcasses, the wealth which our streams are hourly bearing away to the great deep; and who allows his muck-swamp and muscle-bed to lie undisturbed, when puny looking crops, beseech him, almost audibly, for a little food—*such* a farmer will always complain of hard times, short crops, a sterile soil, an inhospitable climate, and will in the end starve out, pull up stakes, and move out west; and we say *amen!* let him go, if he is



determined thus to practice. Brother farmers, are we not all guilty? Let us look about our premises and see.

*The Expanding Principle.* This is also another error into which many of the farmers of this county seem readily to fall; increasing their number of acres when they already have more than they can possibly cultivate to advantage.

The LABOR and FERTILIZERS at command are spread over too much ground, thereby producing only medium or perhaps minimum crops, when the same expenditure applied to one half the same area would give maximum, or at least, remunerating crops. There seems also a glaring want of judgment in the selection of lands for cultivation. That which is extremely rocky, broken, sandy, or wet, should be left for the production of a forest growth, (evidently the design of the Maker,) at least, until the better lands are all taken up. And yet, strange as it may seem, these refuse lands are toiled and snailed over, while those more feasible are left for the production of wood.

Many other subjects claim our attention, and more than a mere passing notice, but they must be deferred to a future report.

SAMUEL F. PERLEY, *Chairman.*

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#### GRAIN AND VEGETABLES.

The Committee report, that the statements necessary in regard to mode of culture have been made in only a few instances, and premiums have been given strictly in accordance with the rules of the Society.

Traces of pop corn from John Reed of Westbrook, and James F. Tuttle, of Freeport.

R. F. Jordan of Capé Elizabeth, four traces of corn, the best exhibited.

Enoch L. Pillsbury of Cape Elizabeth, two traces of corn.

A. P. Foster of Harrison, showed one trace of corn nearly equal to those above mentioned.

E. T. Smith of Gorham, superior samples of corn. Also beans and peas.

Mrs. P. Drinkwater of Portland, presented very fine samples of sweet corn.

No statement of mode of cultivation accompanied either of the specimens of corn.

Samuel Grey of Harrison, presented a statement of winter wheat accompanied by a sample, produced at the rate of twenty-four bushels per acre, and is entitled to the first premium.

*Mr. Grey's statement.* The soil is a sandy loam, eighteen inches deep, of a very dark color; granite rocks found in it. Last year manured highly, and planted to corn; plowed ten inches deep; used common stable manure, to the expense of nine dollars. Sowed the last of September, 1856; used dry seed, one bushel and twelve quarts per acre; harvested the crop last of July—it was quite ripe; raised twenty-four bushels and ten quarts per acre, sixty-five lbs. per bushel. There were fifteen hundred lbs. of straw.

Expense,	.	.	.	.	.	\$21 00
Value of crop,	.	.	.	.	.	55 00
						<hr/>
Balance,	.	.	.	.	.	\$34 00

Samuel Higgins of Scarborough, presented specimens of White Bald and Red Canada wheat, grown at the rate of twenty bushels per acre. His report was not complete.

*Mr. Samuel Higgins' Statement.* The soil is a light sandy loam—dark color; rocks found in the ground are slate. Plowed last year, used five cords of manure to the acre; planted corn and potatoes.

Sowed White Canada wheat, May 11th, two and one-half bushels per acre; harvested as soon as out of the milk; raised twenty bushels per acre, weighing sixty lbs. per bushel. Raised on three acres, sixty bushels, worth

	.	.	.	.	.	\$150 00
COST—Plowing,	.	.	.	.	.	\$9 00
Sowing,	.	.	.	.	.	3 00
Harvesting,	.	.	.	.	.	6 00
Threshing,	.	.	.	.	.	6 00
						<hr/>
						24 00
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Balance,	.	.	.	.	.	\$126 00

Of Squashes the show was very full, and could there have been added a few *pure marrow*, would have been complete.

John Curtain, Portland, gardener for J. B. Brown, showed two large squashes weighing eighty and ninety-seven pounds.

Moses Gould, Portland, one squash weighing eighty-five pounds.

E. Mackenzie, Westbrook, gardener for James E. Fernald, very fine squashes, nearly pure marrow.

J. Bradford, Portland, very large custard squashes; a variety too watery to be very generally cultivated.

Samuel Chadwick, Portland, marrow and other squashes of large size. Also celery, medium size and well blanched.

Jason Webb, Windham, showed a specimen of squash or pumpkin weighing sixty-one pounds.

Lewis P. Warren, Westbrook, a good collection of squashes, pumpkins, turnips, and turnip-rooted parsnips.

John Bell, Scarborough, two marrow squashes. Also celery, large, and well blanched.

E. Mackenzie, samples of celery well grown.

John Curtain showed one large cantelope melon.

James Hutchins, Yarmouth, gave a statement in regard to the culture of carrots and Ruta Baga turnips; the former produced at the rate of eleven hundred and ninety-six bushels per acre. Recommend the first premium.

*Mr. Hutchins' Statement.* The soil was a reddish sandy loam; planted to potatoes the year previous, with a light coat of sea-dressing, ploughed ten inches deep. Expense \$1. Used four cords of manure. Sowed Orange carrots about the 10th of June, in drill rows two feet apart. Hoed twice at the cost of \$3. Planted twenty-four rods at an expense of \$10 50. Raised one hundred and sixty-eight bushels.

Frederick Waterhouse, Scarborough, presented a bushel of Potato onions with mode of culture, having raised forty bushels on one-twelfth of an acre, it being at the rate of four hundred and eighty bushels per acre.

*Mr. Waterhouse's Statement.* I, the subscriber, do hereby certify, that I, this year, raised upon thirteen and one-third square rods of land, situated in Scarborough, Cumberland county, Maine— forty bushels of onions.

I do also certify, that the soil upon which the aforesaid onions were raised, is a rich, sandy loam, neither very wet nor very dry;

that the said onions were raised from a seed known as the "Potato onion;" that the quantity of onions used for seed, was eight bushels, and that the quantity of dressing put upon the land was no more nor less than six cord feet.

The expense of raising said crop was as follows :

Expense of preparing ground,	\$2 00
Expense of 8 bushels of seed at \$4 per bushel,	32 00
Expense of setting out seed,	3 75
Expense of cultivating and harvesting,	7 50
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Total expense,	45 25
Total value of crop at \$4 per bushel,	160 00
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Net profit of crop,	\$114 75

John W. Adams, Westbrook, exhibited a sample of the Linnæus and Victoria rhubarb stalks of extremely large size.

Smith & Brown, Portland, showed samples of cabbage very large, also beets and carrots.

E. Mackenzie showed superior cabbages, cauliflowers, beets, carrots, turnips, and celery.

James Hutchins understands how to grow cabbages, if we may judge by those exhibited.

Edward Delehunt, gardener for T. C. Hersey, Portland, presented Khol Rabi, head lettuce and cauliflowers, very large fine specimens; also white carrots and curled parsley.

Luther Wiswell, Windham, presented good sized cabbages, beets and turnips.

Byron Greenough, Portland, exhibited Pawnee Indian corn. A curiosity.

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#### FRUIT, HONEY, SYRUP, BREAD.

Best display of (21 varieties) of apples, of fine appearance and in excellent order, S. F. Perley, Naples, 1st premium.

Bushel of best Baldwins and one basket of Spitzenburgs, M. Milliken, Scarborough, 2d premium.

Best exhibition of pears, E. T. Smith, Gorham, 1st premium.

Best specimen of grapes, (Isabellas,) John Reed, Westbrook, 1st premium.

Byron Greenough, Portland a basket of very fine grapes, two varieties.

John Bradford, Portland, a basket of fine Isabellas.

John Curtain, gardener for J. B. Brown, exhibited specimens of Isabella and Victoria grapes of very superior quality.

E. P. Weston, Gorham, Sorghum syrup from Chinese sugar cane, a gratuity. (*See statement.*)

*To the Secretary of Cumberland Agricultural Society :*

Herewith I forward to your Annual Fair, a can of Sorghum Syrup from Chinese Sugar Cane. I had no idea of sending to the fair, while I was raising the Sorghum or manufacturing the syrup, or I might now give you a more exact statement. However I give you such general account as I can from recollection. My ground, about a quarter of an acre, was prepared as for Indian corn, but was not in the best condition. It was planted about the time for corn planting, a part of it in hills, at the ordinary distance of corn hills, and a part of it in drills. It came up in about a fortnight, but seemed to be checked by the cold, wet weather, so that for some weeks it promised nothing. My men laughed at my prospects for a *sugar crop* and proposed to plow the ground again and plant it with late corn for fodder, so as not to lose the ground entirely. As it was they were obliged to re-plant about half the ground, where the sorghum had failed to come up, or was lost in the wild-rye which would not stop for its feeble rival to get a fair start. The corn planted to fill the vacancies came up and grew rapidly, and was ahead of the "celestial" sugar cane during all the first part of the summer. But the hot weather of July gave it a start, by which it soon made up its relative loss and outstripped its boasting neighbor. The unbelievers were compelled to *acknowledge the corn beaten*. Thus far, however, the stalks did not seem to contain any more saccharine matter than the corn stalks and we looked upon it as promising only a good article for fodder. It reached a good height, ten feet, more or less, and was then cut as we needed it for my cows. But as it became sweeter on maturing, we concluded to save a portion to try the experiment of syrup-making.



We pressed the stalks through a mill used by the grocers for grinding sugar. The process was of course, slow, but we succeeded very well in getting enough to make about two gallons of syrup, of the consistency of ordinary molasses; ten gallons of the expressed juice yielding one of the syrup.

It was boiled down in brass and iron kettles over a common cooking-stove. I added a little lime to correct the natural acidity of the juice, and the white of eggs to clarify. Besides this it was strained repeatedly, after being boiled down, through coarse towelling, which arrested some remaining particles of vegetable fibre and other impurities, and left it as it now is.

You perceive that I have no means now of estimating the produce per acre, nor the cost of manufacture. My *impression* is, that it may be made to pay expenses, by cultivating in large fields, and manufacturing with the proper machinery. But as a *fodder*, we judge it superior to any thing else that can be raised on the same ground, at the same expense.

The seed formed, but did not quite ripen.

Yours very truly,

E. P. WESTON.

Dr. James R. Lunt, Westbrook, 2d best do.

Best specimen of honey, to Augustus Mosher, Gorham.

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#### BUTTER AND CHEESE.

Best butter, Mrs. Lyman B. Chipman, Raymond, 1st premium.

Second best do., Mrs. Chas. Moulton, Gorham.

Best cheese, Joseph Porter, Freeport, 1st premium.

Second best do., S. F. Perley, Naples.

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#### MANUFACTURES, IMPLEMENTS, & C.

J. E. Robinson, Portland, exhibited two corn-shellers, a cheese press, two sausage-cutters of an improved kind, a sausage-filler, two dozen axes, one case scythes of superior workmanship and finish from the North Wayne Scythe Company, two hay-cutters—ono



having some improvements which the Committee noticed as good, two cultivators—both with improved form of teeth for strength, one having a short steel point bolted into each tooth by which the durability of the implement must be greatly increased; and a lot of forks from the firm of Stevens, Peck & Co.

A. P. Robinson, Portland, presented a model of a Truss bridge for common roads, to be made of three-inch plank, without the use of iron, for 100 feet to 130 feet span. The Committee were unanimous in warm commendation of this bridge,—considering the great advantage of doing away with the long iron bolts used in other forms of truss, with their constant expansion and contraction from heat and cold, and the consequent difficulty of keeping them adjusted to the braces and cords so that they shall neither cramp the wood nor yield in sudden extreme changes common to the climate of Maine. They would however like to suggest to Mr. R., or rather quere, whether joint bolts at the head of the braces, would not be better, on the whole, than treenails and keys. McCallums improved patent inflexible arched truss bridge, was also exhibited by Mr. Robinson.

Mr. Charles Hunnewell, Windham, a sample of Rail fence, with one or two improvements.

B. D. Morrill, Windham, a very excellent Washing tub, simple and cheap in its design and construction, the Committee recommend it as a practically useful machine.

## OXFORD COUNTY SOCIETY.

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This active and efficient Society, embracing about one thousand members, held its exhibition at Paris, October 6th, 7th and 8th. The Secretary says, the show was a very large one, particularly in live stock. He thinks horses receive an undue degree of attention and too great a proportion of the funds of the Society, as compared with neat stock. The competition for crops was quite limited—the show of fruit unusually large notwithstanding the scanty crop of the past season. The premiums awarded exceed \$500.

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### HORSES.

A large number of horses of various breeds, also mares and colts, seem to have been exhibited and statements regarding each duly returned, but in the absence of any opinions of their comparative excellence from the adjudging Committee, nothing can be gathered from the statements of the competitors of general interest.

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### NEAT STOCK.

The same remarks made above, will apply to the stock exhibited—the reports of adjudging Committees are not found among the returns. There appears to have been shown a goodly number and of fine quality, among which the Devons and Herefords seem prominent; also many grade Durhams. The general tenor of the statements favors the opinion, that the two former are found better adapted to the climate of Oxford than the latter, being hardier, more serviceable and more cheaply kept, while the Durhams, with proper care and rich feed, attain a large size at an early age.

T. O. Brown showed a herd of Devons, purchased not long since in Vermont. In his statement, he says he prefers this breed as more docile and quiet, more hardy and cheaply kept than any other stock, and excellent for the dairy, making a larger quantity of butter and cheese.

S. S. Hersey speaks of the same as superior for labor, having a quicker step, and more easily matched than others.

A. T. Holt entered a herd of ten animals, mostly Herefords, which he commends as superior to the Durhams for beef and for labor—are more closely built, more cheaply kept, better travelers, will grow about as large, and make as good cows for the dairy.

C. A. Noyes exhibited grade Durham and Ayrshire, and Hereford and Ayrshire cattle, as well as other breeds, and speaks highly of the above named crosses.

L. E. Kane showed grade Durham steers, two years old, measuring six feet and seven inches, and weighing two thousand six hundred and sixty pounds—grown with hay till February, and then a quart of corn and cob meal added.

Darius Forbes of South Paris, in his statement in regard to his grade Hereford bull Hercules, says :

“This is the same bull that was presented last year as a yearling. He was kept last winter the same as I kept the rest of my stock, on hay, and a part of the winter they had a few roots. He now girts six feet and two inches, and weighs twelve hundred and forty pounds. He has been kept up during the summer and had only hay except during the months of May, June and a part of July. He then had but two quarts of corn and cob meal per day. He is said by the breeder to be three-fourths Hereford.

My experience with the Herefords has been but limited ; but from that experience, and what I can gather from others and seen of them in other hands, I prefer them to all others, as being better adapted to the wants of the farmer on our soil and in our climate, than any other breed I know any thing about. They attain a weight equal to the Durhams—are more compact in their make, and for beef have less offal. For working oxen, they not only have size, but their muscles are exceedingly well developed ; and their osseous systems are well grown but compact in their joints, and formed for great strength and activity ; and their feet of good size, and hoofs

hard and smooth, so that they can stand up and travel well on the road. In motion they are quick and active for their size, and in disposition very docile, mild and intelligent, and possess great power of endurance. They are not very select in their food, but have an appetite which relishes any decent feed, and a power of digestion and appropriation which enables them to keep in good condition if given enough of the poorer qualities of feed. They are very hardy both to endure labor and the rigors of our climate. As milkers, they are fair so far as quantity is concerned, and their milk is of the very first quality, for butter especially. They are very peaceable and quiet so long as they have enough to eat; but they have one fault, for men who undertake to half starve their stock, if fault it can be called, and that is, if there is any thing to eat in their neighborhood, they are bound to have it, and no ordinary obstacle will hinder them."

Other statements of his are also appended:

*Bull "Young Silver."*—Bred by William H. Sotham, Owego, Tioga county, New York—age, one year and two months.

This bull is a full blood Hereford, and from one of the best families of stock in the world, of this class. He was brought into this State on Monday last, and of course, is not entitled to a premium, under the rules of this Society. We do not, therefore, present him for premium, but only to have the judgment of the appropriate Committee on his merits. Subjoined is a certificate of his pedigree, and a letter from Mr. Sotham, in relation to the manner in which he has been bred and reared:

*Pedigree of Young Silver.* Young Silver calved Aug. 28th, 1856, got by imported Poppinjay 2d, bred by Rev. J. Smythers, by Poppinjay 1st, who was by Young Trueboy (32, English Herd Book,) out of Jay by Blenkeim (26), out of a daughter of Old Toby Pigeon, the dam of Trusty (15), Triumph (8), Young Woodman (12), &c., dam Spot by Young Forrester, G. D. by Forrester (112), out of Venus by Cupid (198). Mr. Smythers gained at Hereford as best yearling heifer, and the next year as a two years old with Venus. He showed Cupid as a yearling, three years old, and aged bull, and gained all three prizes.

Dam of Young Silver, Cynthia, (imported,) by Woodlad (79), dam Miss Climax by Climax, G. dam Dove. (See English Herd

Book.) Dam of Miss Climax, Woodlass, bred by William Price, the Prize Cow, at Southampton, in 1844, at the Royal Agricultural Show. No better pedigree can be found in England.

The above bull is sold to Darius Forbes, Esq., South Paris, Maine.

(Signed)

WM. H. SOTHAM.

Owego, Oct. 29th, 1857.

OWEGO, Oct. 29, 1857.

DARIUS FORBES, ESQ.,

*Dear Sir*:—I send you the pedigree of "Young Silver," which I feel will do your county much service. He is from an excellent family. I raised him upon skim milk, about five weeks, of which he drank but little when given him sour; therefore he was entirely weaned at the end of that time. He never had a pint of meal in his life, to my knowledge.

Probably, I raise my cattle cheaper than any man in the country. I will not except any common cattle, as I like to have them improve after they go out of my hands, instead of declining from being previously over-fed, which, in my opinion, has been a curse to this country. *Forced* feeding must be kept up, or the animal degenerates in appearance, or engenders disease. The quality of the Herefords *does not want forcing*, while that of the short-horns compels their breeders to force them, or they look miserable. This they know, which has induced them to adopt the course they have, in high feeding. But with all their forcing, they cannot hide their hollow crops, upright shoulders, and large paunches; and I should like to see the balance sheet, of the breeders who "*fancy*" such cattle, at the end of each year. I know they must be rich men to keep it up, unless *forced* to a fancy price. Their artificial prices will now be felt by men who cannot afford them.

I am, dear sir,

Yours, sincerely,

WM. H. SOTHAM.

To the above I deem it necessary to add nothing, except to refer to what I have said of the distinguishing characteristics of the Herefords in my statement concerning "Hercules."

DARIUS FORBES.

South Paris, Oct. 5, 1857.



*Stock Cow "Muffle Head."*—Bred and reared by George P. Hooper of Paris. She is five years old, and a grade Durham. With her, I present a two year old heifer with a calf at her side, and a last spring bull calf, as samples of what she does as a breeder. I think it will be very difficult to produce stock, that is superior, in all points, to hers, especially when sired by Hereford blood. As evidence of this, I point to the bull calf, as a most perfect animal in make, as well as very extraordinary in size. The white heifer has size, but is not so desirable an animal so far as good points are concerned. Both, however, will stand in the very first rank, in their respective classes, for good points as well as size.

This cow and heifer are treated in the usual way of farm stock, in this county—in summer, kept in a common pasture, and in winter, fed on hay and straw, with other rough fodder, to which is added about two quarts of carrots per day, a portion of the winter, and for about four weeks before calving, I give them a quart of corn and cob meal a day, and afterward feed as before, on roots.

My experience with the Durham blood, though limited, is very far from being satisfactory. To say nothing of the many bad points they exhibit to my eye, I find they are wanting in that hardiness and the power of appropriating their food, which will keep them looking well with the ordinary feed produced from our farms, for stock. No matter how bountifully they may be fed with such food, their hair will look dull and lifeless—a staring coat and high bones will annoy a man of taste continually. This, I find, can be remedied only by feeding liberally with grain of some kind, and this must be done from calves. This makes them entirely too expensive, to keep as general farm stock, if *profit* makes any part of a man's object, and he desires to have, withal, a decent looking breed of cattle. Beside, as working oxen, I find they have great defects. Their feet are entirely too small for the size of their bodies, and their hoofs are soft and spongy, and they are wanting in that power of endurance under hard labor, which distinguish the better class of our old native stock. If any of the grades prove otherwise, it is to be traced to the influence of our native blood. From what I have seen and can learn from others, I cannot resist the conviction, that on the whole, so far as working oxen are concerned, so large an infusion of Durham blood into our stock, has had the effect to depre-



ciate their value for *hard labor*, however much it may have added to it for *beef*. It has largely increased their size, but diminished their power of endurance.

DARIUS FORBES.

South Paris, Oct. 5, 1857.

*Milch Cow "Spitfire."*—Bred and reared by George P. Hooper of Paris. She is five years old, and a grade Devon. She has been kept in the same manner as the rest of my stock. She is a very hardy animal, has great power of appropriation as well as a good appetite, and will always keep herself in good condition, if she can get any kind of food in sufficient quantities. Her coat is always glossy and smooth, and she is a pleasure to the eye to look at.

What portion of Devon blood is in her, I have been unable to find out. Whatever it may be, it is mixed with Durham and native. She is a fair sized cow, dark red color, inclining to black about the head. Her excellence consists in the quantity and quality of her milk when fed almost entirely on *dry fodder*. In the months of March and April, fed on clover hay with two quarts of carrots per day, she averaged *twenty-eight and two-thirds* pounds of milk per day, and made *nine and one half* pounds of butter per week. I find she gave considerable more milk when fed on clover, than any other kind of hay.

I have had no experience with the Devon breed of cattle, beyond what I have had with this cow. This leads me to coincide with the general expression of those who have had them, that they are a very hardy breed of cattle, well adapted to a rigorous climate and a hard soil. The main objection I have to them, is their size. They are too small to be profitable as general farm stock. I do not think they are to be preferred to the better class of our native stock, except it be on account of their coat and color. As a mere matter of fancy, they may be preferred by many. I do not think, for all the purposes of general farm stock, they are any improvement on the better class of our natives. Indeed, with judicious breeding, I think our natives are much to be preferred for all these purposes. This is the conclusion I have come to, after a somewhat careful investigation of the matter. Did they mix well with our natives, which they do not, they might be used to add some desirable qualities to our

native stock. Whoever desires a *fancy* herd of cattle—sleek, uniform in color, and of a small, symmetrical and clean-limbed make, regardless of *profit*, can probably do no better than to take the Devons.

DARIUS FORBES.

South Paris, Oct. 5, 1857.

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SWINE.

Benjamin Richards exhibited a full blooded Suffolk boar, imported from Massachusetts. Thinks this breed very valuable to cross with the common coarser breeds.

F. E. Buck showed a Suffolk sow, one year old; also boar and pigs—prefers them for easy fattening.

H. W. Millett showed half a dozen Suffolks, and commends them for being easily and cheaply kept—yielding fine grained and very sweet meat, and little bone and offal—thinks grades preferable to full bloods—keeps them well on slops and raw roots; but to fatten adds corn meal mixed with a little rye.

Darius Forbes also showed Suffolks. His statements are as follows:

*Suffolk Boar "General."*—This is the same animal presented last year for premium, and is three years old this fall. He is a very superior stock animal. The sow herewith presented, was sired by him. His pigs attain early maturity, weighing, at from eight to nine months old, when well cared for, from *three hundred and seventy-five* to over *four hundred and fifty* pounds. Last year, one of his pigs weighed *four hundred fifty-eight and one-half* pounds at nine months old, dead weight; and this year, one of them, at the same age, weighed *three hundred and ninety-six* pounds. He is very long bodied, takes fat very readily, and is as gentle and docile as a sheep. He has been kept, during the past season, on grass, weeds, waste turnips, cabbages and carrot tops, green corn fodder and other waste matters, with a little wheat bran, and a part of the time, a little dry corn. He will weigh about four hundred pounds, live weight, in his present reduced condition.

DARIUS FORBES.

South Paris, Oct. 5, 1857.

*Grade Suffolk Sow "Tuty," and four Pigs.*—This sow was sired by "General," and out of a native long nosed sow, and of course she is half Suffolk. She was a fall pig, and is one of the pigs exhibited at the Show of this Society for 1856. She has been kept the same as the rest of my hogs. Her pigs are after a boar I borrowed of Isaac Stickney of Boston, and are stock from his celebrated Moses Wheeler importation, which, beyond all question, is the best Suffolk stock ever imported into the United States. These pigs are but two weeks old.

I have had no experience with any imported breed except the Suffolks, and I am not disposed to have any thing to do with others, because I am perfectly satisfied with this breed, and do not deem it wisdom to lay aside a satisfactory certainty for an experiment. I know of no respect in which I wish to change the unadulterated Suffolks. They attain a good size when kept till they are eighteen or twenty months old, as well as attain an early maturity, when fed for that purpose. They have a good appetite and great power of appropriation, so that they will eat almost any thing they are desired to, and will always keep themselves in a good condition, if they can get any thing to eat. They can be very easily and cheaply kept. They may be kept on raw carrots alone, or turnips, apples or potatoes without cooking. Their flesh is very fine grained and their skin very thin and their pork very thick—unusually so on the belly. They are very quiet and peaceable while they are fairly treated with regard to food, but prodigiously clamorous when pinched with hunger. I think their pork, on an average, does not cost more than half as much as that from our natives.

In regard to breeding sows, I think the poorest food they can have is Indian corn. This is my experience. Wheat bran, in the form of what is called in market "fine feed," is the best food I have been able to find for them. If milk can be added, all the better. I find, too, that sows with pigs, do the best, to have access to the ground. There is less danger of disease among the pigs. Pigs farrowed and kept on a floor, especially if in winter and accessible to cold from underneath, are very apt to be troubled with dysentery.

DARIUS FORBES.

South Paris, Oct. 5, 1857.

## SHEEP.

Grade Cotswolds were shown by C. A. Noyes of Norway, "valuable for heavy fleece." A "flock of Leicester and Merino," by John Dunham of Paris—average weight of fleece, five and a half pounds.

William Rice showed a buck weighing one hundred and seventy pounds, New Brunswick breed, imported some ten years ago and name not known (probably Leicester?) "Good for meat and wool, on account of size and weight of wool—sheared seven and three-fourths pounds this year—a good hardy breed to winter."

## CROPS.

CORN. *Statement of George P. Hooper of Paris, on Corn.* The acre of land on which the crop was grown, is a yellow loam, in which granite boulders of moderate size abound, with but few small stones. The soil is from one foot to one foot eight inches deep, beneath which is a layer of sand about one foot thick, immediately above the impervious subsoil. It is very light and friable, and soon becomes dry enough to work after a rain, however powerful.

The seed was of the variety known as King Philip. It was planted May 20th and 21st, and harvested Oct. 23d, 1857. It was manured in the hill with old and well-rotted stable manure, and hoed twice.

After being husked, it was measured as per accompanying certificate, and made one hundred and fifty-four baskets full of ears, containing one bushel each. One of these baskets was filled with ears and shelled, which made three pecks of shelled corn, within one gill. This gives as the produce of this acre, one hundred and fifteen bushels of shelled corn.

*Expenses.*

Plowing, . . . . .	\$2 00
Harrowing, . . . . .	50
Furrowing, . . . . .	30
Manuring in hill, . . . . .	2 50
Manure, twenty loads, one-third cord per load, at \$3 per cord, . . . . .	22 00

Planting, . . . . .	2 50
Hoeing twice, . . . . .	5 00
Harvesting, including husking, . . . . .	7 38
	<hr/>
	\$42 18

*Income.*

One hundred and fifteen bushels of corn, at \$1, . . . . .	\$115 00
Manure left in ground, . . . . .	11 00
Fodder estimated at value of three tons hay, . . . . .	24 00
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	\$150 00
Net profit, . . . . .	\$107 82

GEORGE P. HOOPER.

Paris, Oct. 28, 1857.

Phinchas W. Abbott of Rumford, applied for premium on corn grown on one hundred and fifty rods of land which was plowed in the fall of 1856. In the middle of May, manured the ground with sixteen loads of barn yard manure, which was placed in the hill. The hills were three feet apart. Hoed corn twice during the summer. Yield, one hundred and twenty bushels of ears of corn.

WHEAT. James Merrill of Norway applied for premium on a crop of "bearded red" wheat, grown on a brown loam which was in grass in 1856. No manure was applied since 1854. Plowed eight inches deep, and sowed two bushels of seed to the acre. Cost of culture, \$5.50. Yield, twenty and four-fifths bushels.

OATS. Cornelius M. Holland of Canton, grew a crop of oats on a sandy loam on which potatoes were grown the previous year. Manured six years ago quite heavily, and plowed this year about eight inches deep. Sowed four and a half bushels of seed on the 8th of May, broadcast, and harvested sixty-five bushels of thirty-five pounds per bushel. Experience of the owner goes to prove that one must seed heavy in order to insure a large crop. Cost of culture, \$12.00.

E. D. Marshall applied for premium on a crop of English oats grown on a dark loam on which the same crop had been grown the previous year. Plowed six inches deep, and sowed broadcast three



bushels of seed. Harvested fifty-two bushels of oats on the 28th of August.

**BARLEY.** Lewis B. Swett of Paris, applied for premium on a crop of "two rowed" barley, grown on two acres of light loam on which corn had been raised the year before. Plowed about eight inches deep, and sowed broadcast one and a half bushel. Yield, twenty-three bushels per acre. Cost of culture, \$10.25 per acre.

**POTATOES.** P. T. Hathaway states that he grew "California" potatoes on newly cleared land; soil a yellowish sandy loam; had yielded two previous crops of oats; never manured; plowed six inches deep; planted last day of April in rows three feet apart and hills one and a half feet; three bushels of seed on half an acre; cultivated once and hoed once; dug Oct. 5th; one hundred eighty-two and one-half bushels, or at rate of three hundred and sixty-five bushels per acre. Cost of crop on half an acre, \$14.00.

David B. Haskell states that he grew one hundred and seventy bushels of "Christie" potatoes per acre, using eleven bushels of seed, on fine, light, yellowish loam; broken up two years ago; sowed last year to oats without manure; this year plowed six inches; manured with twenty loads per acre of strawy manure; planted May 18th; "cultivated and hoed, then plowed and hilled;" dug September 29th.

Bartimeus Dunham grew one hundred and sixty-eight bushels on one acre and thirty-five square rods, of "State of Maine" and "White Lapland" potatoes. The soil a fine loamy granite soil on a hard gravelly subsoil; has been in pasture many years; plowed eight inches; cultivated and harrowed; the only manure used was two and one-half bushels gypsum and three bushels of ashes, put in the hills. Cost of the crop, \$27.25—value of the same, \$84.00—profit, \$58.75.

Several statements of Mr. Forbes are herewith appended:

**CARROTS.** The soil on which the crop of carrots grew which I present for premium, is a yellow loam, about eighteen inches deep, and abounds in moderate sized granite boulders and not a large quantity of small stones of the same kind. It is very light and friable, and about two feet to the impervious subsoil. It has been



planted to carrots five years before this, and manured with about one hundred pounds of Mapes' superphosphate of lime each year, the two last of which a portion of it was drilled in with the seed, which I find a very effective and profitable way of using it. It has been plowed twelve inches deep, and the large stones removed. This year I applied about one cord of hog manure and about one hundred pounds of phosphate. I used after the rate of one pound of seed per acre. The crop was harvested the last of October. The produce was one hundred and nine bushels of carrots, (grown on five-sixteenths of an acre.) I have not weighed them. The tops were all saved and fed to the cattle, and I should judge, there were about six hundred pounds of them.

Plowing and working ground,	.	.	.	\$2 00
Seed,	.	.	.	25
Sowing,	.	.	.	50
Manure,	.	.	.	6 50
Hoeing,	.	.	.	1 50
Harvesting,	.	.	.	5 00
Interest and taxes,	.	.	.	75
				<hr/>
				\$16 50
109 bushels carrots, 2s.,	.	.	.	\$36 67
One-half manure left in ground,	.	.	.	3 25
Tops,	.	.	.	2 00
				<hr/>
				\$41 92
				<hr/>
Net profit,	.	.	.	\$25 42

DARIUS FORBES.

South Paris, Nov. 1, 1857.

GARDEN VEGETABLES. The garden vegetables I present for premium, are:—eight varieties of cabbage, one of cauliflower, two of carrots, three of beets, one of turnips, and one of kohlrabi. They were all grown in my new vegetable garden, which is a yellow loam, a little inclining to gravel, with a southern exposure. The soil has been but imperfectly prepared for a garden. It has had but one dressing of green stable manure, and that was applied the present year. My reliance for the growth of these vegetables, has been on Mapes' superphosphate of lime.

As will be seen, they have not attained any extraordinary size; but their quality can hardly be surpassed. They are exceedingly tender and delicately flavored, and would have been large could they have had sufficient time for growth.

Of the cabbage, I regard the early York as the best early, the early Savoy as next in value; and for winter use, the late Savoy and flat Dutch, I esteem among the best. There are three kinds of beets—the turnip blood beet, the long red, and the golden. The first and the last are the only kinds fit for table use. Of carrots there are two kinds—the short horn and long orange. The first is by far the nicest for table use. The kohl-rabi is not suitable for table use except when first matured. Late in the season, they become very fibrous, and are fit only for stock. Cattle are very fond of them—more fond of them than they are of turnips.

These vegetables received no other cultivation than to have the weeds kept down. Those who wish to grow vegetables of the largest size and bring them to maturity in the shortest possible time, can do so by thoroughly rotting horse manure, and put it up in a *leach*, and watering them with the liquid drawn from it; but care should be used, not to have the liquid too strong. It should be reduced, so that the liquid shall have but little color, and be applied every other day or at least once in three days, with a common sprinkler, and that always at night.

DARIUS FORBES.

South Paris, Oct. 5, 1857.

SPECIMENS OF GRAIN. I present for examination specimens of winter rye and two-rowed barley. Both of these were grown on plowed land. The barley on the land where corn grew in 1856, which was manured well with stable manure and phosphate of lime. The rye was preceded by a crop of rye, and was manured with Mapes' superphosphate of lime. A hoed crop was never taken from this land, which was a pasture sod, broke up late in the spring and planted to corn, and fed out as green fodder. The rye is of the kind known as the White Rye, with a small admixture of the common black rye. The white is a much larger and more plump grain than the black, and makes a whiter and nicer flour. It weighs sixty pounds to the bushel; and the barley fifty pounds.

DARIUS FORBES.

South Paris, Oct. 5, 1857.

MAPLE SUGAR. Mrs. George P. Hooper of Paris, says :

The trees from which the sap was drawn, were of the second growth, and were from one foot to one and one-half foot in diameter. It takes about twelve quarts of sap to make one pound of sugar. I find the sap of young trees does not make so much sugar to the gallon as trees of the first growth; and that the sap of trees growing on low land is not so rich in saccharine matter as those on high land. The sap was boiled down in a common iron boiler. I made about twenty-five pounds of sugar from twenty trees. It was clarified with milk, which was poured into the syrup a little before it was reduced to the point at which it would grain, after which it was carefully skimmed, and all the matters that rose to the surface was carefully removed. After attaining the graining point, it was removed from the fire and stirred till it became dry. This broke up the crystals and made it very fine, like meal.

ABIGAIL HOOPER.

South Paris, Oct. 6, 1857.

## WEST OXFORD SOCIETY.

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This Society held its Annual Exhibition at Fryeburg, Oct. 21-23, which appears to have been satisfactory and useful.

Mr. Walker, the treasurer, writes as follows :

“There is a visible improvement in the various classes of articles and animals shown at our Fair—especially in farm stock. The Durhams and grade Durhams were there. A fine pair of grade Durham steers, exhibited by N. Charles of Lovel, which the owner said girted seven feet; also a grade Durham bull, by the same. Two full blood Devon bulls were on the ground—one by Mr. Mabry of Hiram, the other by Mr. Buzzell of Fryeburg. These were animals which any farmer might well be proud of. There were the grade Hungarians, which promise well in the way of improvement. Horses and colts were exhibited, which upon a close examination prove conclusively that the march of improvement is upward and onward. There were also grade sheep of various breeds—French Merino, the Cotswold, the Dishley, &c. Of swine, the Suffolk has the preference in this vicinity. Articles and implements were shown, which go to prove that the people of this region are looking for the best before they purchase. It is a fact, that the beneficial influence exerted by this Society upon the agriculture of this vicinity, is, in almost every department of agriculture, apparent.”

The Address before this Society was by Dr. N. T. True of Bethel.

## AN ADDRESS

Delivered before the West Oxford Agricultural Society, at Fryeburg, October 22d, 1857,  
by N. T. TRUE, M. D.

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*Mr. President and Gentlemen of the Agricultural Society :*

I suppose that every farmer present, has come here with the expectation of learning something new to aid him in his arduous calling. Nor will it be time unprofitably spent during your jubilee, if you learn *one* really useful idea. While we would encourage every tiller of the soil to bring the products of his industry to your exhibition, yet there is a higher and nobler object to the farmer, far beyond the premiums that he may receive.

The man who unlearns to-day what he should not have learned yesterday, will be the wiser to-morrow. The man who, to-day, may see a better grade of stock, a new or improved kind of seed, fruit, or implement, or hear new and valuable ideas from his intercourse with his neighbors, will certainly go to his home with higher aspirations and more elevated views of his calling.

It is with this view that I propose to address you on the relations of science to agriculture.

Now, gentlemen, do not shut your eyes as well as ears, at such a high sounding subject, for you will find it made up of a thousand little subjects that daily present themselves or should present themselves to your minds, and as you have chosen me to address you, you must patiently hear what I shall have to say, and allow me to lay aside some of the rules of oratory, and in the first person singular, to address you in the second person plural.

The man who acknowledges no advantage from his fellow beings is the veriest fool in existence. He is but a hermit in his cell, knowing no favors, enjoying no favors, and bestowing none. A snail may live alone in its shell—a silkworm may weave around itself its own shroud, and leave something by its labors wherewith to benefit man; but he who acts independently of all progress and of all benefit

from his fellow man, will die a pauper, and demand a burial at the public expense.

As with the individual, so with the nation. It is a distinguishing mark of a high degree of civilization when a nation is so situated as to secure to itself everything valuable from all other portions of the globe. An isolated nation is a degraded one. Everything that serves to expand and elevate the human mind is there unknown. It was a striking remark of Bishop Whately, "that no nation civilizes itself alone." It is a peculiarity of civilized life that science lends her aid to every department of human industry. Go to the South Sea Islands. The war ship of an island king is a long boat manned by thirty or forty men, each with paddle in hand, essentially the same as was used by the rude barbarian four thousand years ago. But let science step in, and these forty men could fit out and man a ship of two thousand tons, and load it with all the necessaries of a long voyage.

Step into the humblest cottage in the land of civilization, and the first thing you see may be an almanac. The humble cottager may thus learn the changes of the moon, the eclipses of the year, the ebb and flow of tides, and the position of the planets, without ever thinking that it required the most scientific minds the world has ever seen to discover the laws of astronomy and bring them down to his capacity. There is in the hands of that cottager's child a spelling book, but he cares not, nor thinks of the many years of toil spent by the compiler of that book. Nor does he for a moment conceive the vast amount of thought necessary to invent a printing press which will strike out that book such as shall render its price within the reach of his limited means. He little thinks that he enjoys by the aid of science what even kings could not possess six hundred years ago.

Could you visit a New England farm-house as it existed forty years ago, you would have found its inmates employed much the same as were the Egyptian women forty centuries ago, spending the long days, and nights, too, in wearisome toil, spinning and weaving wherewith to clothe the family. It was a painful labor, but science stepped in during the present century and showed the use of wheels and bands and levers, and the inventive genius of the mechanic takes out of the hands of woman that toilsome drudgery, and cards



and spins and weaves by machinery, at a cheap rate, all the various fabrics in use. The mothers and daughters of the household are now left to indulge in labors more congenial with their natures, and in the refinements of society.

Science and art have indirectly lent their aid in improving and adorning the home of the farmer, in the erection of tasteful and comfortable dwellings as a substitute for the cold and ill-shaped houses of a former generation.

Science has invented that common, though wonderful instrument, the mariner's compass. Not only the sailor is guided unerringly over the broad expanse of ocean, but the surveyor who searches for new homes in the wilderness, depends on the direction of the needle to lot out the farmers boundaries. But science is still further needed even here. Perhaps this town was surveyed ninety-five years ago. Its lots were numbered, and its angles measured and recorded, but the surveyor, who to-day goes to trace out those original boundaries, finds that the record does not agree with his instrument. The man of science modestly but confidently points out a law, that there has been for a century past, a variation of the needle to the west increasing at a certain rate each year. This fact at once prevents a multitude of neighborhood quarrels and interminable lawsuits.

Science, by means of expeditions fitted out for scientific men, has explored the icy regions of the north, and established the geography of our continent, and has told the hardy sailor where he can go to catch the seals and whales wherewith to supply our wants. It has brought to the knowledge of the farmer the various productions of other lands, and left him to choose and experiment upon, and adapt them to the climate of his home. Though there be many experiments that fail, yet if one new plant one-half as valuable to us as the potato, or Indian corn, can be discovered, it will at once add millions to the value of the country.

Science has explored the depths of the ocean, and told us where we can lay a telegraphic wire by which to connect the eastern and western continents. Yet these discoveries by science are usually slow and expensive. The steam engine was at first a mere toy, and it has cost more than any city in Maine is worth, to bring it to its present efficient condition. I well remember when a railroad was building from Baltimore to Washington, and it was thought a great

improvement in transportation that one horse could draw a car loaded with twenty-five tons at the rate of four miles an hour. Steam engines for that purpose were not thought of. The fluid we burn in our lamps, the India rubber shoes on our feet, the zinc paint on our houses, the white paper on which we write, and even the pens are the developments of science. We can scarcely think of any article of clothing, or any implement of labor on which is not stamped the development of some of nature's laws.

On the spot where we now stand, there lived and roamed, one hundred and fifty years ago, the red man. A powerful tribe of men, they were. As you plow the soil, occasionally is brought to light an arrow-head made of some hard mineral. I have looked at them with the eye of a mineralogist, and have wondered how they could succeed in bringing different kinds of minerals into such a similarity of form. I doubt if an American living could make one similar, without much practice. To make an arrow-head, a scalping-knife, and a tomahawk out of stone, was the extent of their skill. The hand of science lent them no aid. The skill and time expended in learning to make an arrow-head, could, with the aid of science, have made a plow or a steam-engine.

On the beautiful intervals of the Saco, that same red man cultivated a little corn. On the same spot the white man has the aid of science to plow his fields and reap and mow his harvests.

To the red man there was no architecture save in the humble wigwam. To the white man, there stands the well-constructed dwelling with all the conveniences of life conducive to his comfort.

Nor need we contrast the red and the white man to prove our position. Shut out from the white man the improvements of the last twenty-five years in agriculture, and he would make a sorry farmer. The first class of farmers in our county, now have their plows constructed on the most approved pattern, and adapted to the various kinds of soil. The moldboard has been submitted to the hands of the scientific man, and its form so constructed as shall offer the least resistance and best effect the object. The cultivator, as well as plow, has been constructed in such a way as to be light, effectual and durable. The horse is now made to do much of the hard labor that once required the toil and sweat of the farmer. He not only plows his land, but sows his grain, hoes his corn and potatoes, mows

his grass and rakes the hay, reaps the grain and threshes it. But he could not do all this, unless science had stepped in and shewed the mechanic how to arrange his wheels, and levers, and bands, to meet the desired end.

The next great step in human progress, will be the introduction of the steam-engine upon the largest farms in our county. It is not among the impossibilities, and if so, it is not among the improbabilities, and if not among the improbabilities, it certainly will be accomplished. In England this has already taken place to a certain extent, and I am sure that the restless disposition of the Yankees will not allow them to be behind their trans-Atlantic friends.

I wish here, Mr. President, to illustrate what I conceive to be the relative positions of the scientific man and the farmer.

No scientific man on earth can take your land and raise better corn than you, but he may be able to advance principles by developing the laws of nature that will serve to enlarge your own sphere of thought, and consequently, of action.

It is absolutely necessary for the captain of a ship to learn the laws of navigation, but it is not necessary for him to be an astronomer, or an eminent mathematician, and make his own books on navigation. Not at all. Just so with you, gentlemen. The scientific man who studies the elements of bodies is a theoretical chemist; you who carry out the application of the laws which he establishes, are every one of you practical chemists, and it is not too much to say, that the really intelligent farmer has the richest, most interesting and instructive laboratory in existence.

It was a prevalent idea in the older portions of this county, not thirty years ago, that the soil was becoming worn out and must be abandoned. The science of chemistry sprung into existence within the present century, and has analyzed almost every vegetable, and shown what are its elements. It has analyzed the soils, and shown their composition. New ideas have been started. New modes of cultivation have been practised, and now old worn out fields in Maine, and much more so in Massachusetts, and still more so in Virginia, are renovated. Land in this State which in your boyhood was considered as good for nothing but for juniper bushes, is now among the most valuable and productive in New England.

If we go back into the history of our world two thousand years,

we shall find a singular exemplification of the truth here advanced. Palestine, at that period capable of supporting an immense population, is now mostly a desert land. Josephus speaks of the population around the little lake of Gennesaret as if it was almost literally covered with people. Now it supports but a miserable few.

But it is from the science of chemistry that we are to look for the greatest results. Not that this science will ever unfold any thing that will make the farmer suddenly rich. Its influence will be slowly and silently felt. Chemistry unfolds everything material in nature. Did you ever, gentlemen, see a man from a foreign land, or even from a different State, or occupation, settle down to be a farmer? Did you not see how many mistakes he made in his calculations? How unlike in a thousand little things to the experience and practices of his neighbors. Well, it was because he did not know any better. Now, gentlemen, we must all place ourselves in the attitude of learners in this great world of ours, and the same principle will apply to you as to the navigator; it is not necessary for you to be theoretical chemists, but you must, every one of you, be a practical chemist, to be a successful farmer at the present day.

Let me enumerate some of the questions that chemistry will solve. It will tell you why, and when to put ashes around your corn. It will tell you under what circumstances plaster may be used, and the reason why. It will tell you the composition and defects of all your soils. It will tell you the composition of all your manures. It will tell you the names of a dozen different kinds of manures of the greatest value, that were never dreamed of before chemistry investigated them. It will teach you better than to use muck on your lands in its raw state, and it will tell you on what lands you should not use it at all, for I believe here is something yet to be learned by the farmers of Maine. It will tell you the kind of manure best adapted to a particular kind of crop. It will tell you how to make manures as well as to preserve from waste those which are made. It will tell you the effect of manures in top-dressing, and when to use them in that way. It will tell you when to plow and manure deep. It will tell you how to make use of the atmosphere, of light, heat and moisture in their applications. You may reply that we know these things already. If so, you are intelligent and correct farmers. But let me tell you, that the more you know of general principles,



the wider your sphere of thought and action will be. The honey-bee, by instinct, can build a six-sided cell, and no other; but did that bee possess reason and education, like you, it might build it a thousand ways. Says some writer, "Liebig, the agricultural chemist, has enabled England to add millions of bushels annually to her crop of wheat." Should a farmer expend one thousand dollars in building a house, such as was built fifty years ago, his neighbors would pronounce him a foolish man, because houses are everywhere built at the present day warmer, much more convenient and durable than formerly, and all this in accordance with true science.

There is hardly a domestic duty in the family in which you are not performing some chemical experiment. When you make your soap, you put quicklime with your ashes. Chemistry tells you it is to make your ley caustic and capable of combining with animal fats. Common salt enters into the composition of our bodies. Hence we give it to our animals, as well as take it ourselves. You expose your sweet cider to the atmosphere to absorb oxygen, and it becomes vinegar. You place a pail or tub of cold water in your cellar to prevent it from freezing. Chemistry tells you that the water gives out heat. Experience shows that a soup tastes better the second day than the first, and chemistry tells you that repeated heating and cooling of animal matter renders it more soluble. The old couplet,

Bean porridge hot, bean porridge cold,  
Bean porridge best when nine days old,

was founded in truth on the same principle.

You know that vinegar, put into a copper kettle, generates a poison. You create a green chemical salt known as acetate of copper, a dangerous poison. You place plaster of Paris in your manure heap to arrest fermentation. Chemistry tells you that you save the ammonia, or hartshorn, that would otherwise escape, and which is a most powerful part of manure. The churning of butter, the making of cheese, the smoking of your hams for bacon, and a thousand other little things of every day life depend on a knowledge of this science.

Did time allow, I could fill up the hour allotted me in noticing the daily experiments in the household and on the farm. The truth is, you have been practicing chemistry all your lives long, and just in proportion as you think, so will you in truth become real chemists in everything.

The science of chemistry pointed out a pile of human bones on the battle ground of Waterloo, and shiploads were transported to England, and what were not suitable to grind into flour for the poor sailor's bread, were ground up into manure to enrich the wheat fields of Great Britain. It has shown to the farmer the value of those immense piles of guano, the accumulations of thousands of years. It has brought to light immense beds of phosphate of lime, wherewith to renovate the worn out lands of New England. It teaches you that a block of granite, well pulverized, contains all the essential mineral elements of a good soil. It teaches you this very important law, that every good soil must contain a certain amount of dead vegetable or animal matter. It will teach you what was never thought of a century ago, that a large portion of the woody fibre of plants is obtained from the atmosphere. It teaches you how to arrest fermentation in your manures, and how to promote it whenever necessary. It will teach you when to make use of old and well rotted manures, and when green manures. It will unfold to you the laws of rotation of crops, a most important subject and one in which much is yet to be learned. It will point out to you most beautifully the laws by which your animals are fattened on particular kinds of food.

The old adage, help yourself, and Heaven will help you, is true in chemistry. A healthy growing plant will not only make use of the manure placed beneath it, but will absorb with true chemical zeal the gases that escape from a neighbor's manure heap. Chemistry wastes nothing. Those old bones now lying by the fence will make phosphate of lime, and if you cannot conveniently dissolve them, you can put them beneath an apple tree, or a grape-vine, where they will serve a useful purpose.

Among the apparently trivial objects that should more engage the farmer's attention is the study of the habits of the various destructive insects. It is a noticeable fact, that they become more annoying from year to year, while there is a profound ignorance of their habits, or of the best methods of getting rid of them. The science of entomology has been studied as yet only by the scientific man, and the results of his labors have not yet been but little felt by the farmer.

I have met with many men who did not know where to look for



the borer in his orchard, and yet on examining the stocks near the ground, found them in some instances nearly destroyed. I have had two large apples trees in this county literally eaten off by them so as to fall down. I would simply add here, that if any of you on your return home, should find, on examining your trees near the ground, a quantity of chit resembling saw-dust, that the borer is there, and that the jack-knife and wire should at once be made to attack him in the rear and rout him from his unlawful possession, and the ground be kept clear of grass and weeds around the trunk to prevent their future depredations.

There is still another more aggravating pest called by altogether too good a name. I mean the curculio. Many a farmer has pointed out to me his plum trees, and told me despairingly, that although they blossomed well, and the plums set well, that after they had about one-quarter grown they all blighted and dropped off. Should any of you be troubled in that way, if you will take the pains to look at your plums the next year, when about two weeks out of blossom, you will find every plum with one or more circular cuts through the skin. In that, an egg is deposited, which soon develops itself into a worm that eats into and destroys the fruit. If you watch carefully early in the morning, you may see a black, piratical looking fellow, busy at work puncturing the plums, and depositing his eggs. That man will confer a great blessing who will devise some remedy against their ravages, for the indications now are, that we shall lose our apples as well as plums by their depredations.

A neighbor of mine tells me that he finds the leaves of his cabbage and turnip plants cut off, and wonders how it is done. This morning one leaf is cut off, and to-morrow morning another, until the plant is destroyed. I tell him to dig around the plants with his hands and he will find a lusty looking worm, who in the night appeared above ground, made his meal and retreated, to be repeated the following night. This is the cut-worm, and a knowledge of his habits may often be the means of saving a favorite plant.

A knowledge of the habits of the weevil, has enabled the farmer in a measure to avoid his ravages, but still much is yet to be learned even there.

Then there is the wire-worm, which is usually found very destructive to corn plants on land that has recently been broken up.

So little is known respecting the habits of insects and the best methods for avoiding their ravages, that newspapers have not yet settled down on the first lesson of boyhood—how to destroy a caterpillar's nest in an apple tree.

It seems to be a law of instinct, if we may be allowed the expression, that many of the most common and destructive kinds of insects deposit their eggs in unfermented matter, so that as fermentation goes on, they may be hatched by the heat generated during this process. The gardener may therefore derive a hint, not to make use of unfermented manures in the cultivation of such plants as are liable to the attacks of insects.

It is peculiarly discouraging to the farmer to find his corn and grain destroyed by so apparently insignificant creatures, and he will be a great benefactor to his race who shall introduce an easy and effectual remedy for these evils. Scientific men have already classified them and named them, and it only becomes the sharp-sighted farmers of the present generation to study their habits and devise the much coveted means for their riddance.

The cultivation of that valuable esculent, the onion, has almost entirely been abandoned in this State because of an insignificant looking insect that deposits its egg in the tender plant. Possibly not a farmer present is familiar with the insect that does the mischief. I have yet to confess my ignorance, but I can tell you how to avoid its depredations. As soon as they make their appearance, dig the earth entirely away from the bulb until their ravages are over.

Then there is the black knot on your cherry and plum trees. It is still an undecided question whether it is a specific disease, or the results of the ravages of some insect.

Most of these insect depredators have not been known in this county but a few years, but the loss to this country the present year to our fruit crop alone by one insect family can be estimated only by millions of dollars.

From what has already been said, you will perceive that it will not do for the prosperous farmer to imagine for a moment that he already knows enough; nor will it do for the farmers of Oxford county to suppose that all wisdom is now living, and will die with them. Oh, no! It is well sometimes to define our position by

comparisons. You live at the base of the White Mountains. The most of you can hardly conceive of a mountain much larger than Mount Washington. It is large enough to pierce its head among the clouds, but shave it off at its base and place another of its size on its head, and then put Mount Jefferson above them both, and it would scarcely reach the top of the highest peak in the Rocky Mountains. Or, if that will not do, pile four Mount Washingtons above the other, and you will have a South American mountain. Or, to finish the climax, take all the different peaks of the White Mountains and pile them above each other, and you would not exceed the highest mountain in Asia.

If such be the differences in the natural world, it would be well to look abroad a little and ascertain what others are doing more than ourselves. I have long thought that farmers did not take sufficient pains to visit each other's farms, and especially of those who have become eminently successful in their calling.

Let a consideration of these things serve as hints to you to expand your views and give greater scope to your range of thought in your calling. It is a pointed remark of some one, that no one can ever make much progress by copying himself as a model; and to no man will it apply more closely than the farmer.

But I wish to say a word on a subject nearer to your homes. As I travel over your county and call on its enterprising farmers, I find large numbers who with commendable pride point out to me a few acres of land in the highest state of cultivation. If it is in corn, it is rank and heavily eared. They tell me how they prepared the ground. What pains was taken in plowing, harrowing and manuring, and in planting too. No one thing in this county interests me more than this. I have occasionally (I wish I could say often) been surprised at the vast amount of produce that can be obtained from one acre by deep plowing, or, what would be better, if it could be done as cheap, by deep spading. A farmer told me this present year that he secured the last year at the rate of forty-two tons of parsnips to the acre. I say, gentlemen, you are going on in the right direction. In almost all parts of this county, the soil is strong and deep, and you need not fear to plow it a good depth, provided you can secure a proportionate amount of manure. I believe there is not a farmer present who does not feel stimulated by the impulses

of science to greater skill in the cultivation of his soil. All through the winter months I find that the farmers are anxious to know what varieties of corn are the most profitable. What kinds of wheat may best resist the weevil. What potatoes, the rot. What breeds of stock are best adapted to this climate. This is what I call true science. "A question asked," says Lord Bacon, "is half answered in the asking," and when this spirit of enquiry is aroused, correct results will sooner or later follow.

In this connection let me suggest to you, what I believe might and should be formed in every town in this county, and that is, Farmer's Clubs. I will tell you how it may be done. Let two individuals in a town resolve, that they will meet once a week for twelve weeks through the winter, at each other's houses, whether others will meet or not, and you have a society with a back bone in it. Do not depend on lawyer A., nor Rev. Mr. B., nor Dr. C., to lead off merely because they can talk, but take your wives with you, and make a visit, and introduce some subject for conversation. Ask questions of each other for information. Carry with you some choice fruit, or seed, that may be of interest. At the close of each meeting, let your host bring on his best apples and nothing else for your entertainment. Some of your neighbors may sneer at your efforts, but that is of no consequence, labor on. Others will be induced to join you. Make a few by-laws, the fewer, and simpler, the better. At first you may feel a little awkward in your efforts, like a boy with his first new coat, but you will soon have a spirit of enterprise aroused within you, and a determination to do better than you have ever done before. I well remember, that when a club was formed in the town where I reside, it was thought that we should exhaust all the subjects worthy of consideration in a few evenings. Instead of that, every succeeding year brings out new subjects of increasing interest, and far more numerous than we can find time to discuss. A healthy spirit of rivalry exists among the members, to do, at least as well as their neighbors, and better if they can.

As you go to your homes in your respective towns and neighborhoods, talk this matter over with your neighbors. Act on the principle that in council two heads are better than one, and you will be benefited as well as delighted with your efforts in that direction. The exercise of plain common sense in connection with all that you



can learn from books or from your neighbors, will prevent you from doing a thousand little things of which you will afterwards be ashamed. The man with a witch-hazle rod will not be consulted to locate a well, nor the charmer to draw out the rheumatism from your shoulder, nor will you look to the moon to see when you should sow your peas to avoid the pea-bug, or to kill your pork for fear of shrinkage. Poor farming will always make pork shrink; good farming, with a plenty of corn-meal, never. A thousand foolish notions have been swept away from the minds of farmers, by the light of science, and every improvement in agriculture is now eagerly sought after. A very little science will teach any man that oats will not become barley, nor barley oats. Nor will you be foolish enough to procure the services of the most ignorant man in town to cure your sick cow by pressing down her throat cold salts by the quart, or putting a quid of tobacco into a fresh wound to heal it, any more than you would, as I have known elsewhere to be done, employ the man whose intellect is so weak that you would not rely on his judgment to appraise the value of a pig, to doctor your sick child merely because he accidentally found something in the woods that would operate as an emetic. Cows may give bloody milk if you kill a swallow, and they will give bloody milk sometimes if you do not kill one. Some member of a family may die before the year is out if you kill a fish-hawk, and they may die if you do not kill one. Eclipses of the sun or moon will not now frighten farmers with the idea of cold seasons, nor, should a comet suddenly make its appearance, would you fear from the impositions of those who suppose that all wisdom and power are locked up in their hands.

Such ideas as were once prevalent, I need not try to refute before an intelligent audience as the present, and I only allude to them that you may be reminded, by a comparison with the past, of the progressive condition of society, and place yourselves in the best possible position for still greater improvement.

It is said that the Jews were always unwilling to step on a piece of paper lest the name of God should be written upon it, but, gentlemen, you are at every step treading upon more of his laws than have ever been written. It has been said by a distinguished man, that if the human hand be spread on any spot on earth, there is enough beneath it to occupy the attention of the most scientific man



for a lifetime. The shrewd, intelligent farmer will always be the man of the age, or perhaps a little in advance of his age, to seize upon, and make use of those laws by which he shall in the best possible manner, reap an abundant harvest.

Why, gentlemen, I do not believe that our Creator intended that every occupation under the sun, even the very meanest, should receive the aid of science, and the farmer be left to drag out a hard life without its blessings. I do not believe that the telegraph was made to benefit the merchant alone. Nor do I believe but that the steam engine, which in England alone is now doing the labor of one hundred millions of people in other occupations, shall yet be dragged into the immediate service of the farmer. The bolts and bars that kept enclosed within heavy walls the truths of science for nearly six thousand years have been snapped asunder one after another, and you with all others are at liberty to step in and take advantage of the treasures there so ready to be lavished upon you. I am not willing to give up the cherished thought that the farmers of New England are yet to be surrounded with more of what constitutes real happiness than any class of men on the face of the globe.

As I look over our own State, I unconsciously picture to myself each farmer's home as some little Eden where simplicity of manners, intelligence and religion dwell. One of the finest pictures ever drawn by the pen of inspiration, is that where our first parents "heard the voice of the Lord God, walking in the cool of the day." Nothing hinders you from surrounding your homes and filling your gardens with trees and shrubbery where you may, without the necessity of hiding yourselves, find a retreat from the noise and tumult of public life, and secure to yourselves that quiet and happiness which such a garden can always give to the humblest citizen.

Many a time have I been led to exclaim, as I have compared the tumultuous and uncertain condition of other pursuits with that of the skillful and stable farmer. You do not know how well situated you are. There may be, and, no doubt are exceptions, but I have yet to see the first man that has left a good farm and gone out West, who has in subsequent years returned to the home of his youth in any better circumstances than he would have been, had he remained at home. To a young man without a family the case may be different, but to a man once settled down on a farm, a removal out West,

with a family, is a worse calamity than if a fire leveled his buildings to the ground.

I am so hopeful as to believe that these valleys of the Saco, as well as the hillsides all over this good county of Oxford, will yet, by the aid of science and skill, add at least one fold more to the products of industry.

Any man among you, who may have too small a farm, may find another one directly underneath the old one. Plow deep, manure deep, pulverize well and deep, and you have embodied in a single sentence the substance of all that constitutes good husbandry. I can already see in this county evidences of a marked improvement in the cultivation of the soil, in a better grade of stock, in the introduction of more and better fruit, in embellishing and rendering your homes more comfortable, convenient and attractive.

I confess to a feeling of pride in every thing that pertains to the health, wealth, intelligence and moral standing of my native State. I have resolved to resist the allurements of a distant land, and to spend my days in Maine. This resolution made twenty years ago, I have not yet once felt like breaking. We are capable of sustaining a greater population than ever Greece or Rome could support. Her villages are becoming centres of little and great cities. Her seacoast extends for hundreds of miles, and is indented with bays, rivers and harbors. In a single year the State of Maine could fit out a fleet of ships equal in tonnage to the whole navy of Great Britain. Scarcely a township exists in which may not be found an abundance of water power, while timber and fuel are actually growing faster than we can consume it.

Railroads are fast extending into every portion of the State, and rendering available what before was of no value. The swamps are fast becoming fertile meadows. By reason of steamboats and railroads and mechanical industry, commerce is extended, and the farmer realizes prices in cash such as were never known before, in time of peace.

Smart and enterprising boys and girls are found in abundance all over the State, ready to peddle tin ware, or practice law; ready to cut logs for the mill, or to engage in logrolling; ready to teach the oxen how to draw, or to teach the younger boys and girls how to read; ready to play on the piano, or to make bread; ready to swap

horses or be a doctor; ready to make money any where, or to get married. If an Englishman wants a steamboat, he draws his plan, and makes all the mathematical calculations necessary, with scientific exactness; if a Yankee wants one, he takes his jackknife and whittles it out, and if it will not go as fast as the Englishman's he will make it go as fast as he can. It is this versatility of talent that enables the New England farmer to do almost all kinds of work on his farm and buildings without depending on his neighbor.

In connection with the leading topic of this occasion, permit me to suggest subjects for your consideration, so that you may be thinking as well as working men.

There is an inquiry as to the kind of corn best adapted to our latitude; to the best methods of avoiding the potato rot; the draining of meadows and lowlands; a subject that has yet to engage the attention of farmers in some portions of our State to a great extent. Then there is that noble animal, the hog. I question much whether you have yet begun to realize the profits of this animal, not in raising pork for sale, but in the quantity and quality of manure he makes. He is the only animal that can furnish you phosphate of lime in large quantities. There is a rapid change going on in this State in regard to the kinds of stock best adapted to the wants of the farmer. Farmers do not want mere fancy stock any more than they want fancy horses to do their work. As a general rule, great size in stock will not be found the most profitable trait. Our younger farmers would find it interesting to examine into the chemical composition of different kinds of roots for stock, for chemistry as well as the experience of the best farmers will tell you that some kinds of food will put on flesh, while others will put on fat. Then if we turn to our more staple crops, you should be led to inquire what you are taking from your soil every crop you remove. Let me illustrate. In every ton and a half of potatoes, you take twelve pounds of phosphoric acid, seven pounds of sulphuric acid, six of magnesia, and fifty-eight pounds of potash and soda, elements the most important to the growth of vegetables. Let us take clover, one and three-fourths tons of clover will take eighteen pounds of phosphoric acid, seven of sulphuric acid, seventy of lime, and seventy-seven of potash and soda. A good crop of beans may take twenty pounds of phosphoric acid from one acre. I give you these figures

not for exactness, but as indications to you of what you may investigate. A knowledge of these things will lead you better to understand the rotation of crops, a subject, I think, pretty well understood by farmers in this county in practice, if not in theory. It would not be an unprofitable question to ascertain what per cent. of our manures might be saved from waste, and to learn also what elements are lost by rain and what by fermentation.

Every intelligent farmer among you is aware that soil taken from beneath a building contains a large amount of nitre. It is an interesting question what application may be made of this fact to the management of soils. You may ask the question, how it is that a beet seed scarcely weighing a grain, can be able to produce in a single season twenty-eight pounds of vegetable matter. It would be well to ask yourselves the question, why a well pulverized soil is so beneficial to the growth of plants, whether it is not for the purpose of admitting air into the soil in addition to other reasons. You might inquire whether the ruta бага and other turnips would not be the cheapest, and, on the whole, the best food for your hogs in their growing state.

Judging from what I have seen and heard in different parts of the State, many of you might find it as convenient and as profitable to have a cranberry patch as it is to have a garden. Why should not every orchard have attached to it at least a dozen trees of sweet apples? Every farmer in good circumstances should make arrangements to have something from his garden each day in the year, if necessary. These little things that come from the garden enrich one's table wonderfully. From experience I find that I can commence cutting from my garden a supply for the table on the first week in May. Let us see the order. First, from a row of cives, second, from asparagus, third, from rhubarb and onions, fourth, from currants, after which an abundant supply may be obtained from various sources.

Another index of progress in the right direction is an improved pasturage. Plowing up and improving old pastures where it can be done, will do much to improve the condition of stock, and especially the dairy.

There is a certain limit to all vegetable and animal products, but you are to aim at the greatest degree of development in every



vegetable and animal, having a due regard to the cheapest mode of production.

I have thus thrown out these hints for your future contemplation, nothing doubting but that some of them will engage your attention.

In this connection I would suggest to you, as a matter of economy, the importance of having at least the rooms in your houses made as warm as possible for winter. It is all nonsense to talk about too warm houses here in the country, provided the means of ventilation be at hand. I know many a farmer who will spend all his winters preparing firewood, and yet you can put your fingers between his window sash, or through the bottom of his doors, which a very little attention would prevent. I have no doubt that one-third of the wood and labor might be saved in this State among our farmers by a little attention to this point. Secure double windows to your kitchen and sitting room, as well as double plaster them, and you will not produce an involuntary shudder in every member of your family at the thought of winter. A current of cold air passing beneath the doors from worn doorstools causes cold feet and headaches to all the inmates of the house.

In all your experiments with new and untried vegetables, you may lay it down as a pretty safe rule, that no profit can be made from any article whose seed will not ripen. You may obtain syrup from the sugar cane, but if you cannot ripen the seed, all the commercial profits of the article will be realized by those in a more favored climate.

One of the pleasantest subjects for contemplation is a happy old age, and one of the finest pictures that the painter can draw from reality is that of the intelligent old man surrounded by his children and grandchildren. Poets of all ages have sung of the pleasures of the farm. "O most happy farmers," says Virgil, "if they know how well situated they are." The land is always just to them, and pours forth abundant food. If he possesses not a lofty house, he does not find himself beset like the great with an army of hungry dependants, nor straitened out by fashion. The showy, false, and deceitful glare of courts has no charms for the man who has experienced the solid happiness of his farm. The valleys, the streams, the lakes, the hills and mountains, the cool shade of trees, the low-



ing of cattle, and the enjoyment of sweet sleep belong especially to the farmer.

Sweetly as sung the poet in praise of the farm, he did not in that age conceive of the farmer as a thinking, scientific man. Those higher pleasures of the inner man formed but little place in his picture. "Happy he," exclaimed our poet, "who can know the causes of things." He did not dream that the farmer could know these things, but that all learning must be locked up forever from their sight in the brains of the mere man of science. Unlike that of any other employment, the pleasures, or rather the solid comforts of the farm increase with age. But few men in the complete enjoyment of the farm could be induced to shut themselves up in a counting room, or the shop of the mechanic. Few farmers would be willing to hear the rap at their door at midnight, and, like the physician, be compelled to harness horse and ride several miles for the sake of earning a dollar.

In looking over the catalogue of mortality among the different occupations of men, it would seem as though old age was the lot of the farmer alone. Look back, gentlemen, upon the young men of your youth, and especially on the fast young men, who engaged in any other employment than farming, and I think you will be surprised at the small number that has ever passed beyond the middle age of man.

Cicero, in his charming treatise *On Old Age*, speaks worthy the philosopher and the christian. "I come now," he says, "to the pleasures of the farmers with which I am exceedingly delighted, which are not hindered by old age, and which seem to me to belong especially to the life of a wise man. The earth delights him by its productions, by the opening spring, by the growing vine and corn, the planting and grafting of trees, the irrigation of his fields, his garden and orchard, his flocks and swarms of bees, and the variety of flowers." Nor could he be satisfied with pleasure in beholding the beautiful home of his neighbor, Marcus Carius, who had triumphed as a general over the enemies of his country, but was now embellishing a home for his old age. It was the latter, who, while sitting by his own fireside, spurned with contempt those who brought to him a great amount of gold, regarding it as something not worthy the consideration of the truly happy man.

But, gentlemen, whether it be a welcome truth or not, we are all growing old, white hairs will unbidden start from our temples, and if there be any one earthly wish above another for you, it is that you may, while now bearing the burden and heat of the day, be able to acquire such a competency as shall enable you to pass through many years of unalloyed enjoyment, surrounded by your children and grandchildren to comfort and cheer you in the decline of life. It is not in accordance with my philosophy to believe, that we are required to spend the best of our days in a mere struggle to live, and then to settle down in a state of gloom and utter inactivity of mind and body.

To grow old gracefully, is one of the finest traits of age either in man or woman. To maintain a control over our tempers, to manifest a feeling of benevolence and good will towards our neighbors, to rejoice at their prosperity, will have a wonderful effect in smoothing the pathway in our declining years.

The man who loudly boasts of his own honesty is often the harsh parent, and the still harsher neighbor, and grows old early, exhibiting by the deep furrows on his face the tumultuous life which he has led. This is not what the real farmer should be.

Let me draw a picture of what I have seen. Here is a man to whom three score years are numbered, but he has enjoyments still. Surrounded by all the substantial comforts of life, his weekly newspapers afford him pleasures fresh and invigorating from week to week. No more interesting figure in such a picture is there than to see him who brings

“The big ha' Bible,”

and calls his family around him, and

“Wales a portion with judicious care,”

and commends in humble devotion his whole household to the care of Him who never slumbers nor sleeps. There is a sacredness in such a family circle, and one that angels cannot fail to admire and love.

To such a man,

His certain life that never can deceive him,  
Is full of thousand sweets and rich content.  
The smooth broad beeches in the field receive him  
With coolest shade till noontide heat be spent.  
His life is neither lost in boisterous seas,  
Or the vexatious world; or lost in slothful ease,  
Pleased and full blest he lives when he his God can please.

But while I have reversed the natural order of things in touching upon old age, yet perhaps not in real importance, if I allude to our young men.

I have had my serious fears that our young men were not laying that solid foundation for a more elevated condition in life which was formerly characteristic of the young men of this county. Too many it is to be feared are mere slaves in boyhood to some trade, when they should be at school, or engaged in some out of door employment. The ancient order of things seems fast becoming reversed. The daughters must be educated, while the boys are enticed away by the excitements of the day into the employment of some wealthy corporation. I fear that the young ladies who now hear me, will be compelled to go out of this county to secure a husband suited to their condition; and you may rest assured, young gentlemen that they *will* go a great ways until they find one satisfactory to themselves. There is no class of persons that understand better how to say no with an emphasis, than the young ladies of Oxford county. Such of you as have not already found this out will do well to be very cautious in your movements. I know of no better argument to young men than this gentle hint, that they secure to themselves solidity of character in early life. Devoted attention to a whiskered face does not make a man, nor a beauty. There is a certain kind of discipline that must be acquired somewhere before you can succeed well in discharging the stern duties of life, and perhaps there is no better place to secure it than while engaged on the farm under the direction of a prudent father.

That boy bids fair to make the successful man who earliest learns to exercise his judgment. Learn then to guess the number of feet in a load of wood, or the weight of a load of hay, or of an animal. Avoid the trashy stories found in so many of our newspapers, and spend your winter evenings in solving some question in arithmetic, or grammer, natural philosophy, or chemistry. Every evening spent in this way will make a different being of you from what you was in the morning. You could not, if you would, rid yourselves of its good influence.

I have come to the conclusion, after not a little observation, that the young man who labors on the farm, or learns a trade as a house carpenter, or a blacksmith, or another trade requiring the develop-

ment of his muscular system, will commence at the age of eighteen, to obtain an education, graduate in our colleges, study a profession, and find at the age of forty, that his chances will be far greater for influence, wealth and usefulness, than without such early training. I am led to this, in examining the characters of our most eminent statesmen, who had manly bodies, and within them, strong and noble minds. Fast young men, and fast to ruin is a good logic. To such of you as are anxious to engage in extensive business in our cities, let me state to you what a New York merchant of twenty-five years' experience related to me during the present year, that he scarcely ever knew a young man who entered as a clerk in a store where a large amount of business was transacted, that ever succeeded in business himself. Pardon me, young men, for being frank with you. It is my candid opinion that there is no occupation that opens so fair prospects for an intelligent and industrious young man as that of a farmer. I do not know how it is with the solid men of this vicinity who have acquired their property by their own exertion, but most of the men whose history I have been able to trace who have acquired wealth, have labored early and late, have had hardy looking hands and faces, and have been compelled to study and practice economy. It costs very many thousand dollars for a man to carry a white hand all the way through life.

I know of no trade or profession that brings so many leisure days as that of the farmer. Your clergyman must labor seven days in a week, your physician fourteen, and your lawyer and schoolmaster I don't know how long, to secure an honest livelihood. If there is a holiday, your merchant, your miller, and your blacksmith, must be on hand early and late to wait on customers, while the farmer can enjoy it as no other can. There is a wrong impression on this point among farmers themselves, and especially among young men.

I would not advise a young man without a good constitution, nor unless he possesses a tolerable share of common sense, to be a farmer. Nor would I flatter you with the vain expectation of succeeding as a farmer without industry and economy, nor would I have it different if I could.

“Life is real, life is earnest,”

whether you believe it or not, and the earlier in life you learn the fact, the greater your chances of success.



I once read the biography of one, who, when a young man, resided in this village, and I do not know but that, at that age, he may have thought as lightly of agriculture as you; but he grew wiser as he grew older, and when he became an orator, second to no other man living, he might be seen with his slouched hat and thick boots surveying his stock, his trees, and his crops on his farm. Although we may cease to read his speeches that once pulsed through every fibre of the American people, and although he might have been chosen President of these United States, and have honored the station, yet he will be better embalmed in the memory of his countrymen, who will never cease to make their pilgrimages to the home of him who gloried in his old age of being called the farmer of Marshfield. Five years ago this present week, the nation was called to mourn his death, but he is now remembered by the masses of the people quite as vividly as a farmer, as he is an orator.

No, young men, I never yet saw an industrious farmer stand trembling at the approach of a sheriff, or the suspension of a bank. If his bank caves in, it is only to bring to light a deposit of brick clay which will always pay good interest. The time is rapidly approaching when the intelligent man, who possesses a good farm free from debt, will be the most independent, if not the most influential man in society.

*Mr. President, and Gentlemen of the Agricultural Society :* It was a wise remark of Lord Bacon, that "confidence lies at the two extremes of knowledge." All of you, no doubt, commenced life with much zeal. You planned each new undertaking with great assurance of success, and it was not until you had been repeatedly disappointed in your expectations, that you began to lose confidence in yourselves. Was it not so? But disappointments are the school of experience, and as you have grown older, you have again become more confident, because you have become more cautious. Is it not so?

No matter whether in the history of your society, or in your individual history; in the construction of a dwelling house by the private citizen, or a railroad by a corporation; in purchasing a cemetery lot, or in cultivating a farm, there seems to be a middle period in every undertaking in which the wave of prosperity has apparently reached its culminating point, remains stationary for a moment, and again



recedes. It is at this period that sailors on the ocean notice as it were a breaking up of the waves, but only to be followed by three larger ones in succession, which, with their accumulated force sweep all before them.

It is in this middle period, gentlemen, that so many farmers, as well as others, lose their courage, sell out their farms, and move to the West, or "Nova Zembla, or the Lord knows where," only to experience over again the first wave of prosperity.

Do you see that little child just learning to walk? It has stepped one, two, three steps, and falls. It can never attempt a nobler act. But all the efforts of an anxious parent cannot induce it for days to repeat the experiment, until its accumulated energies urge it on to renew the attempt, when to the delight of its parent it walks boldly and successfully across the floor.

A few years ago the plan was conceived of changing the direction of the commerce of the St. Lawrence river, from Montreal to Portland. A railroad was commenced, and pushed on as far as the boundaries of this county. The middle period of its history had arrived. For several years there was a stand still, until the waves of prosperity again pushed it through. Within the present year the grand attempt has been undertaken to make a highway for nations along the bottom of the broad Atlantic. Expectation was at its highest pitch of excitement. The accumulated science of Europe and America was brought into requisition to devise the best possible means for its accomplishment. Poets sung of its praises in advance, and orators did not fail to expend upon it the most glowing figures of rhetoric, but, one morning in September, our ears were saluted with the unwelcome news, that the cord had been snapped asunder in mid ocean. It seemed as if a great national calamity had befallen us, and the whole country felt like being shrouded in the habiliments of mourning. But this is now the middle period of its history. The magnificent project will yet be accomplished, and, what has been done, be regarded only as a mere experiment.

Geological science declares, and Holy Writ seems to verify it, that after the creation of this earth, there was a period of comparative repose, a middle period, before the consummation of the glorious work in the creation of man.

Eighteen hundred and fifty-seven years ago, there appeared on

this earth, a distinguished personage. The wisdom of the East was placed at his feet. Angels ushered in the advent with their presence, and with the song of peace on earth, and good will to men. A few years, and even he, who claimed a divine mission from heaven, found the death of the vilest on earth; his friends scattered, and his power apparently gone. Shall we not be allowed to call this the middle period of his history? Need I tell this enlightened audience that that period was immediately followed by one which ushered in all of civilization and Christianity that has made the world what it is, and what it will be when it shall have completed its glorious mission on earth?

But I dare not pursue this train of thought any further. Let these illustrations serve to encourage and stimulate you to develop every thing noble in your natures. Stick closely to your farms, gentlemen, whatever you do to-day, do it in such a way as not to be compelled to undo it to-morrow. I know men among you, who, no matter whether they hold a plow, or go on a foreign mission, whether they swing a scythe, or the destinies of the nation, will be found capable of doing their work well.

There is a tide in the affairs of men, and you can afford to wait until the opportunity shall present itself, when you can be easily borne along on its flow. Aim then at nobility of character. Think, think, think, as well as act in your calling. Let there be a happy combination of all the powers which have been given you in their fullest development, until you shall become a living walking epitaph, of whom it shall be said, there goes a noble man.

## FROM REPORTS OF COMMITTEES.

## Cows.

It is a fact, that the cows and heifers of our State are sadly neglected in the distribution of the good things found in the well-to-do farmer's granary. It is equally evident, that this is a great error, and a correction is necessary before that improvement in stock is made which the country demands. A heifer calf will do well enough with *one-half* the milk for six weeks; but a steer must be nursed and pampered as many months. And what is the result? Small, diminutive cows, producing small calves, yielding a small quantity of milk, and making but little beef when no longer profitable for the dairy. If the barn is too small to accommodate his whole stock, the heifer or the old cow is the one destined to enjoy the cold breeze on the north side of the barn when the mercury is below zero. The petted *steers* must be *protected* from the cold. The exhibition of them at our shows, corroborates these facts.

Such things ought not so to be. A dead weight is thus placed upon all improvement; or if any is made, it is with expense disproportionate to the means of most farmers.

The advice of your Committee is: Bestow more care upon your cows and heifers. Attend to their wants more faithfully. Do you want good oxen? Feed the mother before and after calving, and she will amply repay you by producing large, strong young—yielding sufficient milk for their growth and furnishing your dairy with a liberal supply of butter and cheese.

M. K. MABRY, *Chairman.*

## BULLS AND STEERS.

The Committee on Bulls and Steers, having attended to the duties assigned them, would make the following report:

Your Committee were glad to find so many fine animals on the ground for their inspection, showing not only the desire of the own-

ers to compete for the small sums offered by your Society as premiums, but also an increased interest in the breeding and rearing of better stock. And the exhibition here made shows conclusively that on and around the hills of Western Oxford, stock of as fine proportion and size can be raised as in the more pleasant valley of the Kennebec.

Your Committee were very happy to find that nearly all the animals on exhibition which came under the head of bulls and steers, were wholly or in part of foreign blood. And the written statements of their owners relative to the manner of feeding and rearing, give the lie to the oft-repeated assertion that animals of foreign blood require better feed than the farmers of Western Oxford can afford to give—that the pasturing in Western Oxford is not equal to that of the Kennebec valley, consequently smaller breeds are preferable—that they are not hardy, and therefore cannot withstand our long and tedious winters—and finally, that feed them no better than we feed our native stock and they will be no better.

The statements given, show no high feeding, no extra exertion to procure size, but simply say, in most instances, they are fed the same as are our other stock of the same description.

There were seven bulls entered for premium—three full blood Devons, two grade Durhams, one native, one with no statement. And your Committee would be distinctly understood to say, that in their opinion, every one on exhibition was deserving of a premium.

J. S. POWERS, *Chairman.*

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#### STATEMENTS.

The statements on stock generally, describe only the individual animals shown, without stating facts or offering opinions of a general character, except that of Jacob French, who showed a full blood Devon bull. He prefers the Devons to all others on account of fine color, great ability to labor—good disposition and richness of milk in the cows, and they are easily and cheaply kept; and this, it may be remarked here, agrees with the uniform testimony of all who have fairly proved this breed of cattle, so far as it has come to our knowledge.

Many of the horses, sheep, oxen, &c., seem to have been specimens of great excellence.

FROM STATEMENTS OF COMPETITORS ON CROPS.

INDIAN CORN. Joseph G. Swan grew eighty-five bushels of corn, of sixty-four pounds each, on an acre of light sandy loam, broken up the year before and planted to corn then; this year plowed seven inches; spread and harrowed in twenty loads stable manure worth one dollar per load; planted 19th May in hills three and one-half feet apart; hoed twice and applied two bushels of ashes and the same quantity of plaster to the hills.

DR.	<i>Estimate.</i>	CR.
Plowing,	\$2 00	85 bushels corn, \$85 00
Manure,	20 00	Fodder, 20 00
Planting and plastering,	2 00	One-half manure left, 10 00
Hoeing,	6 00	<hr/>
Harvesting,	10 00	115 00
	<hr/>	Deduct cost, 40 00
	\$40 00	<hr/>
		Profit, \$75 00

James Walker grew sixty-six bushels ripe corn on an acre of rather light loam, lying on a hard and gravelly subsoil, which was planted to potatoes the year previous; applied sixteen loads of green manure from barn cellar, deemed worth two dollars per load; planted May 30th, the large kernalled eight-rowed corn, after soaking in water from barn cellar and being rolled in plaster, in hills two feet apart in the rows which were three and one-half feet apart; cultivated and hoed once, hoed a second time without cultivating; cut up at roots when ripe, 28th September.

DR.	<i>Estimate—Corn Crop.</i>	CR.
Plowing and harrowing,	\$3 00	66 bushels corn, \$66 00
1-2 value of manure,	16 00	6 " soft corn, 2 00
Seed 50c, hocking \$4,	4 50	3 tons fodder at \$4, 12 00
Harvesting,	6 00	<hr/>
	<hr/>	\$80 00
	\$29 50	



**WHEAT.** Lewis Howe raised twenty-four bushels of bearded wheat on an acre of intervale ; a deep, rather light soil ; sometimes flowed ; last year was plowed seven inches deep and planted to corn ; a bushel and twelve quarts of seed was soaked, rolled in plaster and ashes, and sown broadcast the last of May ; no manure applied this year ; harvested last of August, when rather green ; crop, twenty-four bushels on an acre and half a square rod, by accurate measurement.

**RYE.** Moses M. Bennett grew twenty-one and one-fourth bushels of winter rye on an acre of sandy loam, planted to corn in 1855 and wheat in 1856 ; plowed in stubble nine inches, and sowed one bushel, broadcast, first of September ; cut it July 30th—not quite ripe ; expense, about \$4 ; value, \$1.12½ per bushel.

Nathaniel Walker grew twenty and one-half bushels spring rye on an acre of light sandy loam, of dark color, on which corn was grown the year before ; seed, one bushel ; sown broadcast, without any previous preparation, 23d April ; land plowed six inches and harrowed ; cut August 20th, when rather green.

Thomas Mason grew summer rye on an acre of dark yellow sandy loam which was in corn and potatoes last year. Crop “about twenty-three bushels.”

**RUTA BAGAS.** Henry Walker grew these at the rate of five hundred bushels per acre, on grass land yielding one and a half tons of hay ; plowed eight inches deep, and manured with sheep manure ; drills eighteen inches asunder.

## LINCOLN COUNTY SOCIETY.

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Of this, the Secretary writes thus :

“ This Society now embraces seven hundred members—two hundred and four new ones having been added during the past year. Its annual exhibition was held at Waldoborough, on the 13th, 14th and 15th days of October. It is in a very flourishing condition. The show of stock this year was large, and the various specimens were said by good judges to be very fine. There was also a very large show of horses and colts, there being about sixty entries in this department for premiums. There was a large display of vegetables, and, considering the unfavorable season, the display of fruit was very fine. There were about seven hundred entries in the various departments for premiums; and taking it altogether, it was one of the finest County Shows ever holden in this State. The amount of premiums paid out was nearly four hundred dollars.”

The reports from this Society comprise little else than awards of premiums. Some of these for prize animals are,

First premium, for entire horse, to Dr. Moses Call, Newcastle.

Second do., do., to Asa Keiser, Waldoborough.

Third do., do., to Washington Sherman, Waldoborough.

Gratuity to W. G. Berry, Rockland, for entire colt.

First premium, for breeding mare, to G. E. Cummings, Union.

Second do., do., to William Achorn, Waldoborough.

Third do., do , to Amos Flye, Newcastle.

Many other premiums were awarded for geldings, colts, family and working horses; and the Committee say, that yearly, there is more interest taken in this county in breeding and raising horses; and are of the opinion that greater inducements should be held out in future to encourage their production.

## BULLS AND BULL CALVES.

Premiums and gratuities were awarded, as follows :

To J. G. Huston, Damariscotta, for five years old bull, first premium.

To Luther M. Kennedy, Jefferson, for two years old bull, second premium.

Premium to Luther M. Kennedy, Jefferson, on bull calf.

To David Harding, Union, for best bull calf six months old, a premium.

Hartley Erskine, Newcastle, for bull sixteen months old, first premium.

A. H. Wyman, Jefferson, for bull seventeen months old, second premium.

From the statements accompanying these, it would appear that the animals were grades—mostly of Hereford and Durham, with native. One, a cross of the Hereford and Durham, is spoken highly of by its owner, Mr. L. M. Kennedy.

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 WORKING OXEN.

The Committee on Working Oxen report, that there were eight yokes entered for premium.

John Bodge, Jefferson, one pair four years old, girth seven feet one inch.

Daniel Hall, 3d, Nobleborough, one pair five years old, girth six feet eleven inches.

Thomas J. Simmons, Waldoborough, one pair six years old, girth seven feet.

Zenas Feylar, Waldoborough, one pair six years old, girth six feet eleven inches.

G. W. Morse, Union, one pair six years old, girth seven feet three inches.

Newell Hall, Nobleborough, one pair four years old, girth seven feet two inches.

David Hussey, Nobleborough, one pair four years old, girth six feet seven inches.

George D. Smouse, Waldoborough, one pair five years old, girth seven feet one inch.

They awarded:

First premium, to Thomas J. Simmons, Waldoborough.

Second do., to Newell Hall, Nobleborough.

Third do., to G. W. Morse, Union.

The Committee say, "all of the working oxen exhibited were noble animals, especially those entered by John Bodge of Jefferson, and Daniel Hall, 3d, of Nobleborough." Nothing is said of the breed or breeds of the oxen, steers, cows, &c.

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### Cows.

First premium for dairy cow is given to George Farrington, Waldoborough.

Second do., do., to Jacob W. Kaler, Waldoborough, (a grade Durham.)

Third do., do., to Benjamin Weeks, Jefferson.

Gratuity to Thomas J. Simmons, Waldoborough, for dairy cow.

Also, to Alex. Glidden, Jefferson, for stock cow.

Also, on two cows, to David Hussey, Nobleborough.

Second premium to Benjamin Weeks, Jefferson, for stock cow of improved breed.

Second do., to A. H. Wyman, Jefferson, for milch cow.

Gratuity to Daniel Harding, Union, for stock cow.

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### SHEEP, SWINE, &c.

To Ephraim Weeks, Jefferson, for Egyptian buck, first premium.

To Warren Benner, Waldoborough, for buck, second premium.

To M. G. McCurdy, Washington, best flock of sheep, ten in number, first premium.

To Jacob Hofses, Waldoborough, second best do., second premium.

To John Bodge, Jefferson, third best do., third premium.

To Alexander Palmer, Waldoborough, hog seventeen months old, premium.

To Richard Burkett, Waldoborough, Berkshire hog, a gratuity.

To Thomas J. Simmons, Waldoborough, for hens and turkeys, a premium.

Mr. Simmons' statement in regard to poultry is as follows :

I hereby certify, that I kept twelve native hens during the year 1857, six of which I here exhibit. Their feed was corn, barley and curd.

The following is an account of the number of eggs they laid, and the price they brought :

January,	3 dozen and 3,	sold at 20 cents per dozen,	\$0 65
February,	7 " 10,	" 18 " "	1 41
March,	12 " -	" 14 " "	1 68
April,	15 " 7,	" 14 " "	2 18½
May,	16 " 7,	" 13½ " "	2 23½
June,	16 " 7,	" 13 " "	2 17
July,	11 " 4,	" 14 " "	1 59
August,	11 " 10,	" 17 " "	2 02
September,	10 " 8,	" 18 " "	1 92
October,	2 " 4,	" 18 " "	0 42
			\$16 28

The above hens raised a brood of turkeys and a brood of chickens ; six of said chickens, and all the turkeys, eight in number, are here exhibited for premium.

THOMAS J. SIMMONS.

Waldoborough, Oct. 13, 1857.

#### FRUIT.

The Committee on Fruit, report :

That the exhibition in that department is not so extensive as could have been desired, yet the various samples are of excellent quality and highly creditable to those who presented them. The absence of a display of plums that has added such interest to some of our previous exhibitions, was seriously regretted this year. This was in



part attributable undoubtedly to the lateness of the time of holding the fair, and in part (perhaps mainly) to the unfavorable character of the past season for almost all kinds of fruit raising, and which was the principal cause that the competitors for prizes in the fruit department were so limited in number.

That there is a newly awakened interest in this county on the subject of fruit culture, is apparent in every town and upon almost every farm, and the additional sources of profit and enjoyment that are thus opened for the poor as well as the rich, must add much to the prosperity and happiness of all classes. The results of the efforts that have been made in this department, in this county, are in the highest degree encouraging and show that Lincoln need not be dependent upon her sister counties or other States for a rich abundance and variety of the choicest fruits. It has been said that "the fruits are God's *bounty* and the *flowers* are his smiles;" let us then cultivate and encourage the cultivation of each with the view to the enjoyment of such blessings.

We award the *first* premium on winter apples, for bushel of Baldwins, entered by Reuben Hager, Union.

For six baskets winter apples, to Lyman H. Winslow, Nobleborough.

For two baskets winter apples, gratuity to Alexander Palmer, Waldoborough.

For one bushel Rhode Island Russets, gratuity to Warren Merrill, Nobleborough.

For one basket of apples, Wm. McDowall, Washington, gratuity.

*Autumn Fruit.*—For one bushel Porter apples, first premium to Sumner Leach, Warren.

For one basket Porter apples, second premium to John Currier, Waldoborough.

For one basket Porter apples, gratuity to J. P. Hollis, Waldoborough.

For best dish of apples, gratuity to Mrs. Adams Benner, Waldoborough.

For two dishes of apples, gratuity to J. W. Benner, Waldoborough.

For thirty-two dishes, greatest variety of apples and in best condition, first premium to John Currier, Waldoborough.

For fourteen varieties, second premium to Hon. Thomas Simmons, Waldoborough.

*Pears.*—For best dish pears, first premium to John Currier, Waldoborough.

*Grapes.*—For greatest variety of grapes, premium to John Currier, Waldoborough.

The next greatest variety exhibited, was not entered for premium but were entitled to great praise. We understand they were exhibited by Hon. Isaac Reed, Waldoborough.

For Black Hamburg grapes, premium to B. D. Metcalf, Damariscotta.

For Black Hamburg grapes, premium to John Currier, Waldoborough.

For Black Hamburg grapes, gratuity to J. G. Huston, Damariscotta.

For best Native grapes, premium to John Currier, Waldoborough.

For second best Native grapes, to Samuel Ripley, Washington.

SAMUEL KENNEDY, *Chairman.*

#### FROM THE REPORT ON AGRICULTURAL IMPLEMENTS.

We were present at the ploughing-match on Wednesday, and after examining the work done by two ploughs, one breaking-up manufactured at Damariscotta Mills, the other at Washington, we give the preference to Hussey's patent manufactured at Washington, and award it the first premium.

We also noticed a very good looking plough made at Union, but as it was not used we could not judge of its merits correctly.

A rock weed hoe was exhibited by Joseph Hunter of Bristol, which appeared like a very useful article for scraping rock weed from the rocks. We thought it a very good tool though not much acquainted with its practical use.

A churn was exhibited made at Rockland, by Wm. F. Lovejoy, which looked like a good working machine and was said by a *lady* who was present, who had used it, to do the work in great style, but as your Committee did not see it operate in milk, we could not judge of its superiority, but thought it might do well.

A seed sower was exhibited manufactured by Mr. Jackson Russell of Waldoborough. We do not hesitate to recommend it as a most ingenious invention and think it reflects great credit on the inventor, and certainly deserves, in our opinion, a gratuity.

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#### FIELD CROPS.

The Committee on Field Crops, award :

First premium, on corn, to Dummer Trask, Jr., Jefferson.

Second do., do., to Eben Hall, Jefferson.

Third do., do., to Lyman H. Winslow, Nobleborough.

Fourth do., do., to Levi Vaughan, Warren.

Fifth do., do., to Hiram W. Patridge, Jefferson.

First premium, on wheat, to John Viles, Jefferson.

Second do., do., to H. G. McCurdy, Washington.

Third do., do., to Ichabod Jones, Warren.

First premium, on oats, to Christian Schweir, Waldoborough.

Second do., do., to John Viles, Jefferson.

First premium, on beans, to Lyman H. Winslow, Nobleborough.

Second do., do., to Eben Hall, Jefferson.

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#### STATEMENTS.

These are few in number, and most deficient in facts necessary to give them value; or are so *indefinite* as to prevent their being reliable as data from which to judge of the capabilities of the soil, or the character of the treatment bestowed upon the crops.

There is great need of more care in the preparation of statements in all our societies, if we would accomplish the end aimed at by their publication and diffusion among farmers. According to such as are found, it would appear that Dummer Trask, Jr., grew seventy-two and one-fourth bushels sound corn, six bushels of soft corn, five bushels of beans, and eight loads of pumpkins, on an acre of dark-colored sandy and gravelly loam; in hay last year; plowed in No-

vember, ten inches deep; manure (kind and quantity not given) spread and in hill; cultivated and hoed twice.

Received first premium.

By the statement of L. H. Winslow, who got third premium on corn, it would appear that he grew on an acre and a half of "sandy gravel," of light color, in grass last year, plowed ten inches deep and manured with sixteen loads green manure, harrowed in, and twenty-nine loads of rotted manure, put in the hills, which were four feet apart, and had each a spoonful of dry ashes besides, and were hoed twice, "two hundred and sixty-two *baskets* of corn, thirteen bushels of pea-beans, and eighteen cart-loads of pumpkins."

(*Quere.* How much shelled corn was grown per acre?)

Levi Vaughan obtained fourth premium on one hundred and fifty-six bushels of ears of corn, from an acre, grown on a sandy loam, with a gravelly subsoil; greensward broken in November last, eight to ten inches deep; ten loads green manure harrowed in, and six loads of yard manure in the hills. Cultivated and hoed twice.

*Mr. Viles' statements on grain and roots* are as follows:

"I enter a sample of carrots from one-sixteenth of an acre, for premium. Yielded at the rate of fifteen hundred bushels to the acre. The ground has been planted to carrots for the last six years; last year yielded to the acre at the rate of sixteen hundred bushels.

(Obtained first premium.)

Also, a sample of oats, of one bushel, raised on one-half acre of ground, and from three pecks sowing; yielded twenty-five bushels, that weighed thirty-five pounds to the bushel; raised on ground that was broke up and planted with corn last year; manured in the hill, and not any manure this year.

(Obtained second premium.)

Also, a sample of one bushel wheat raised from one and one-half bushel sowing on one acre of land, and yielded twenty bushels, from ground that was broke up last year and planted with corn; manured in the hill; and not any manure this year; the ground was seeded down to grass this year."

(Obtained first premium.)

JOHN VILES.

Mr. McCurdy obtained second premium on wheat, of which he gives the following statement, from which it is difficult to determine the character of the soil, or the produce per acre:

I have entered for premium one bushel Java wheat; from two bushels sowing, raised nineteen and one-half bushels on old run-out ground, plowed and planted with corn last year, and manured in the hill; not any manure this year.

H. G. McCURDY of Washington.

Luther M. Kennedy of Jefferson, applied for premium on a crop of ruta бага turnips, grown on an old worn out piece of land; plowed ten inches deep, having spread upon the land four loads of manure, and put in the hill about five loads more, of hog manure, with a little guano; planted the seed in hills one and a half feet apart, and two and a half feet between the rows; hoed once and thinned; harvested six hundred and forty bushels, weighing forty thousand nine hundred and sixty pounds.

In marked contrast with some statements received in which nothing of any value can be found, and so are not mentioned, is the following from Mr. Currier, which shows how "a little farm well tilled" can be made to yield both pleasure and profit:

*Statement relating to the soil on which the fruits and vegetables I enter for exhibition and premium were raised, with the mode of cultivation.*

My field and gardens contain about four and one-half acres, including land covered by buildings, &c. The soil of about one-third of the land is yellow, gravelly loam, underlaid by a ledge, and is light and friable; one-third or more, clayey loam, is fine and mellow when worked in a dry season, but hard and stiff after a wet season. The remainder is intervale—soil dark, (colored with vegetable matter,) and retentive of moisture; yielding naturally poor sorts of grass, but has been made to bear grass of excellent quality by ridging with the plow, leaving water-courses between, and manuring liberally. My practice has been to give the land a good coating of coarse manure, and plow it under to the depth of ten or twelve inches. Then a dressing of old manure is applied and worked in by cultivator, or a large shovel full placed in each hill. In this way



the soil has been raised to a high state of cultivation, producing heavy crops; and in this way more profit can be realized from a small piece of ground, than from a much larger one poorly cultivated.

Another advantage is, where full crops are grown, so as to shade the ground, there will be less trouble with weeds. I have repeatedly choked out "twitch-grass" in one season, where the ground had been literally filled with the roots. I make the ground rich enough to sustain a heavy crop; plow deep, so as to cover the roots deep in the ground; then plant with corn, putting the rows as near together as the cultivator will admit, and the hills, with four stalks in each, about two feet apart in the rows, with beans between the hills, and "some pumpkins"; keep the grass down with cultivator and hoe, till these shade the ground, and that is the last I see of the twitch-grass, except dead roots, which go to feed the next crop.

My mode of keeping and preparing manures is as follows:—That from the stable, both liquid and solid, goes down from the stable into the hog-yard, where it is not exposed to the weather, and muck thrown on frequently to prevent waste. I have found by experiment, that a load of this mixture, being two-thirds muck, was stronger and produced better crops, than a load of all stable manure which had been exposed to the weather.

I have an orchard of forty apple trees, most of them young, but nearly all in bearing. They yielded last year about fifty bushels apples—this year not more than one-third that quantity, owing to damage they received last winter. I have also thirty-five standard plum and cherry trees; seventy-five dwarfs, most of which are pear trees; fifteen varieties of grapes in bearing; currants and gooseberries, several sorts, for family use and for sale; raspberries, blackberries, rhubarb, asparagus, &c. Also, five or six thousand nursery trees, vines and shrubbery.

On the products of the field last year, I wintered a cow and two years old heifer, that came in last spring; fed them every night through the summer, (the pasture being poor.) I also kept a horse the year round on hay, grass, carrots, &c., without corn or grain of any kind, and expect to do the same this year. I also raise from twenty to forty bushels corn and grain annually, besides vegetables for table—such as beans, peas, potatoes, squashes, cabbages, melons, &c.

*Experiment with the Potato Oat.* I sowed last spring a small quantity of seed of the potato oat, from the Patent Office, an English variety. The soil on which it was sowed is light gravelly loam; had been well manured and planted with corn the year before. The oats came up well, grew very rank, but blighted about the time of heading out. It proved a complete failure.

JOHN CURRIER.

Waldoborough, Oct. 13th, 1857.

# ANDROSCOGGIN COUNTY SOCIETY.

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Annual Show and Fair held 6th, 7th and 8th of October, 1857.  
Of this the Secretary writes as follows;

“The exhibition was a grand one, especially of stock, probably equal to any in the State. In agricultural implements and crops it was not very satisfactory. Our labors have exerted a very good influence, much benefit having been derived from the introduction of choice stock and improved modes of culture.”

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## AN ADDRESS

Delivered before the Androscoggin, and also before the Franklin and Kennebec Agricultural Societies, October, 1857, by Rev. C. H. WEBSTER, Auburn.

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*Mr. President—Ladies and Gentlemen:*—The labor to which you have called me is by no means an irresponsible labor. What may be said here to-day, ought to have an influence for good upon all our industrial pursuits and interests; and if what may be said here shall be just and proper to the occasion, it will have such an influence: operating upon every department of industry and profit—comfort and prosperity.

The interests of your Society are confined to no one industrial pursuit. The farmer does not constitute your only necessary man of labor, neither does your mechanic. Your victories and honors are to be won from every branch of toil—from field and forest—from workshop and river. And yet we must regard the agriculturist and his vocation as the basis of what we are. He is a sovereign. Earth, with her wide prairies and swelling arteries—with her fertile valleys and sky-crowned mountains—with her inland seas

and unbroken forests—with her deep mines of inexhaustible wealth and thundering cataracts of foaming power :—rearing on her queenly bosom; cities of worldly commerce and villages of architectural beauty as adorning jewels,—Earth, with all these, is his empire. In his hand, hard and bronzed and calloused with toil, he holds the world's life and comfort. Courts and camps, armies and navies, are dependent upon him. He founds large cities and erects palatial palaces, consecrates temples of worship and institutions of learning, by the fruits of his manly toil. His plow and sickle are the foster-parents of commerce and art. Lord of the land, and to whom all things are given in dominion, his is the only true title of nobility. There can be no Church without a bishop—neither can there be a State without the farmer. In point of actual necessity and worth, emperors must bow before him, and kings do him homage, and conquerors follow in his train. The earth is his servant.—he smites it as Moses did in the wilderness, and behold !—a golden harvest flows at his feet. The implements of his toil chant music sweeter to his ear, and more in harmony with his contemplations of nature, and his adorations to Deity, than that of dulcimer and harp, drawn forth by fingers of jewelled beauty. “For him are broadest fields of study, and fairest themes of delight. For him are hours linked to beauties and wisdoms—for him are periods of communion and rapture, of which the birds, the flowers, the streams, the woods, the stars, and all wondrous things of the universe, may bear witness.”

All this would I say of the farmer, but more especially of such as wed intellect with industry,—not to exalt him above his true position, but to assist him in attaining to that commanding dignity with which he is by nature endowed. And when I say this, I would say naught against thee, thou noble and brave man, wielder of the sledge and plane—or thou, skillful worker among spindles and looms—or thee, thou well-known artificer, and cunning worker of metals. But your vocation among the music of saws, the resounding of hammers, and the din of machinery, is second to him who holds the plow and tends the flock, that he may give thee bread for thy strength, and comforts for thy skill. His is the most needful of all toils: his the most serviceable of all products. He can live without thee, but thou canst not live without him. In honor, ye stand side by side, for honor belongs to all honest toil; and from toil only,

either of the brain or muscle, must come those rewards which bless the world, and form its crowning glories.

Your annual gathering is not a one-idea-ism : it is a concentrating and magnifying of mingling interests, which are becoming more and more indissoluble in their relation. The agricultural, the mechanical, and the artistical,—of these interests I would speak. To the farmer, nothing more need be said to his praise and honor, than has been said. A few hints, however, from which he may derive some benefit, may be offered.

It seems to have been an insanity of past nations, as it is of the present powers of the earth, to add territory to their national domain. And as with nations, so with men. The farmer, if he has twenty acres of well-tilled land, casts his eye upon a neighboring field—he wants it—he covets it more than he prizes all he at present owns. And he who has an hundred acres of meadow, hill and wood, wants just one piece more to complete his desire ; and he will allow a portion of what is now his to run to waste or barrenness, for the sake of possessing one he has not. But it should be remembered that it is the cultivating of a farm, and not the number of acres of which it is composed, that renders it valuable to the owner. Many a man who can stand in the door-way of his house and measure his entire farm with one glance of the eye, is richer than many who count their acres by the hundred. There are many large farms, the produce of which is not equal to that gathered from some single acres. There are but few farms properly cultivated. You will find it more to your interest, to raise sixty bushels of corn from one acre, than seventy from two acres ; better to gather five barrels of apples from one tree, than the same quantity from five trees. And so it is better to gather eight hundred or a thousand dollars worth from five acres, than it is to obtain the same amount from an hundred. The investment is less, the profit result greater.

The fact is, almost every farmer has more land than he can successfully cultivate. Every farm in Maine can be made to produce from two to five-fold more than at present, with but small addition to the expense. Land, the income of which is barely sufficient to pay the tax thereon, may be made to “bring forth and bud, giving seed to the sower and bread to the eater.” Many of you, unquestionably, have such land. And what is the matter ? Is it cold and



heavy?—then warm and enliven it, by those very helps at your command. Or if it is light and sandy, mix in such soil and compost as are easily to be secured, and you give it strength and durability. You are then ready to bring forward all kinds of early vegetables.

To this, it may be said, that you have no markets for such products, or that the expense of marketing will consume all the profits. But this is a great mistake, for not only have you markets, but you have such as command the highest prices. In all our cities and manufacturing villages, our mechanics, and traders, and professional men, are stinted for these fruits of the land, or must forego them on account of high prices, while you have acres that produce nothing of value. Those who serve us with these common necessaries, pay thousands of dollars to the Boston market, all of which you might retain as an extra income from your land. Men in Massachusetts can afford to supply our markets, and make money by so doing,—why is it that you cannot do as well as they? They own no richer or better land than you, only as they have made it better by cultivation. The barren sand-hills of Cape Cod, where—since the morning stars of creation sang together for joy—nature, unaided by man, has produced no luxury for the table, are now by human helps rendered productive, and every year increasing in productiveness and value. I now refer to the cranberry crop, one of the most productive and valuable to which we can turn attention. Not a farmer within the limits of your Society, but who has a small out-of-the-way piece of land, fit for nothing else, and which, by a few days labor, he might convert to this productive purpose. The strawberry is another fruit, easily cultivated and highly remunerative—an article of luxury and health for your own table, and for which there is an unlimited sale and waiting markets within reasonable distance. A small patch of land thus appropriated, would not only add beauty and value to your farm, but give to your pocket a silver lining.

The painter arranges his pictures, so as to produce the most pleasing and harmonizing effect upon the senses. The merchant displays his goods so as best to attract the eye. This is a work of study, of calculation, and arrangement. And so it should be with the farmer; he should study, not only to make his land productive, but attractive, both to himself and others. An evergreen hedge

fence is far more inviting,—and, as the figures will by and by show, even cheaper,—than one of huge stumps; and as a protection, equally good. The grounds around and near your house may be thus enclosed; and then adorned with currant, gooseberry, and raspberry bushes, dwarf pear trees, rhubarb roots, grape arbors, strawberry vines, and vegetables of all descriptions, the fruit of which will always find a market, at good prices. I would add another suggestion, in regard to the cultivation of the grape. Experience has amply demonstrated, that this fruit can be cultivated in this latitude with success. Nature has provided you with many facilities, and invites you to the effort. Her rocks and ledges are but so many hot-houses. At the south side of every large rock, and on every ledge sloping to the south, you may plant your grape-vine, confident of success. And a little care will give you an abundance of one of nature's richest and most wholesome productions. And this is not all; these rocks and ledges are now unpleasant to the sight; convert them into graperies, and you make them both remunerative and attractive.

You may raise the objection that you have no time to devote to such purposes. To this I would reply, there are those who do find time for such work, and who, by so doing, accumulate fortunes, and surround themselves with every comfort, convenience and luxury. This work they did not do in one day, nor in one season; but they made a beginning—small at first—adding a little here and doing a little there, setting out a tree, and planting a shrub or root, as time and means would allow. Suppose you have a large tract of uncultivated land; you cannot bring it all under cultivation this year, nor next, nor during any one season of labor. What! therefore, will you never improve it, because you can not all at once? Most certainly this would be an unwise course; you will do what you can this year, and what you can next and so on from year to year until the whole is subdued. And such is the course to be pursued in order to accomplish each and every object you have in view. Every end must have a beginning,—you must sow before you can reap.

Another objection frequently urged—and one, too, of fearful consequence to the farmer—is, that you have no taste for such things. Here is the real trouble. “I can't,” is a word that never accomplishes, and has no legitimacy in the vocabulary of the Yankee.

But "I can," and "I will," are triumphant words, and lead to success. Among the ancient nations, agriculture was made the basis and instrumentality of prosperity and success. It was the great idea—the handmaid of honor. But now the great masses hold it in disrepute. Farmers themselves are dissatisfied with their vocation—their sons seek the shop and the counter, their daughters give preference to the mechanic and tradesman. The farmer's life is regarded as one dull, unrelieved round of plodding toil. And so it is, as in most instances pursued. Yet in reality it is the poetry of toil—a field for sublimest thought and divinest aspiration.

Now, if the farmer will surround his home with attractions, such as nature unfolds, and which her agencies will assist in doing,—something that shall be refining and elevating—something that will make home a sacred word, and an inspiration to lofty thought, then will the farm be sought as the nursery of happiness and contentment. The farmer will then feel a pride glowing in his heart, and a spirit of satisfaction will pervade his being and bless his toil. And all these attractions and beauties the child needs as aids in its upward growth and formation of character. If we would expand the mind and enrich the hearts of our children, we must adorn the way with such influences, sights and sounds, as will reveal the beauty and order of nature's kingdom, and inspire to noble action and effort. It is a sad mistake to suppose that a child has no conscious need, above being fed and clothed. They have minds, which, if not nourished by the rich treasures of truth, can promise but little of the great prosecuting activity of existence. They have thoughts in embryo, which, if not supplied with living draughts from the fountains of beauty and order, will shrivel into deformity—filling life's path with thorns and unseemly products. They have affections to be wrought upon—to be trained by association with elevating objects and pursuits for the good and true of life. And to the child, every object has its molding influence; the true, the good, the noble, leave irreversible impressions; birds, flowers, fruits, order, neatness, harmony—each and all have their lesson for childhood. Costly decorations and pompous lavishments, are not requisites, but simplicities; an unseen finger of beauty that shall touch the inner nature—awaken and draw forth its divinely bestowed power.

And these adornments, with which you may surround and sanctify

your homes, will breathe an influence upon the life of the child, which will strengthen with every advancing year, and bless every opening prospect of existence. But if there be no home attraction for the child—nothing to render real the ideal beauties of the soul—nothing to quicken and deepen the glowing affections of the heart, how can we expect to win them to rural pursuits, and render them content and happy? A farmer's life is a life of toil, and its ingatherings are necessarily slow. And this fact must be relieved by something more than broad acres of waving grain. To make the farm and its toil inviting, you must throw around it those joys and pleasures and enchantments, which may be afforded, and which relieve toil of its severity.

And this brings me back to the objection—that you have no taste for these things. And here is the great secret. Your toil is not a realized enjoyment. You repine over your lot in life, instead of recounting with gratitude its numerously bestowed blessings. Farming has become unpopular, because the farmer has taken so little pride in his calling. There are exceptions; but as a class, if they can scrape together sufficient to support the family and pay taxes, they look for nothing more. And as most farms are managed, how in the nature of things even so much can be done, is more than I can comprehend. Look at the fact as it is. How many farms within the limits of this society are here represented? Not one in ten—probably not one in twenty. No products from your fields—nothing from your stables—eight or a dozen cows, but nothing from your dairy. And all this, while there is not an article here on exhibition, and for which a premium will be awarded, but that an equal or better might have been brought.

The trouble is, you do not employ the means within your reach, and you are somewhat determined in the resolution that you will not. To till the soil upon educated principles is something that but few will have anything to do with. But to crown the interests of agriculture with success, the farm must be tilled physically, intellectually, and morally—the hand, the head and the heart, must be engaged, and toil in concert. Head-work and heart-work are as necessary on the farm, and as essential to success, as hand-work. We must have a heart-love for our work, or else we pursue it without ambition; and without intelligence we pursue it blindly.



A successful farmer must be a student, and practice upon what he learns. To this end, he must be somewhat acquainted with scientific facts. The science of chemistry is essential, in order that he may labor intelligently. You cannot raise a crop, nor employ a fertilizer, that does not involve chemical principles. The bread you eat, the butter your wife makes, the hot-bed in your garden—if you have one, and if you have none, it is time you had—all involve some principle in this science. It teaches the value, qualities, nature and application of manures—what will best suit one kind of soil, and what another kind; what crops will be best adapted to the soil of one field, and what to the soil of another. We hear bitter complaints about scanty crops, and that farm-work don't pay—but you cannot gather grapes from thorn-bushes, or figs from thistles; if you can, the roadside will be the best harvest field. Allow me, with kind intention, to ask, if you have ever made the subject of adaptation of certain soils and manures to certain crops, a subject of earnest inquiry and study. If you have not, do not complain of your land or meagre crops—they are not in fault.

An acquaintance with those physiological laws, upon which the life, health, and growth, of all animal and vegetable life depend, is essential to success. By this science we learn that like produces like; that the best produces the best in the vegetable kingdom, and that the soundest and most symmetrical produce the best and most valuable in the animal kingdom. And both observation and experience unite to teach us, that it is cheaper to raise a good crop, a good horse, or ox, or sheep, than a poor one.

There is one other "ology" to which I would direct attention. Entomology, or that science which opens to our wonder the insect world, is by no means unworthy the study of the farmer. How many crops, at first promising well, have been ruined by insects. Sometimes the fruits and crops of an entire region of country, are swept away, and no hand is intelligently raised to stay back the desolation. What startling revelations are presented to us through the microscope? It is said by those studied in these things, that in the compass of a mustard seed, there are eight millions of distinctly formed insects or animalculæ. Counting at the rate of one every second, it would require the service of twenty thousand men for forty-four years—twelve hours each day—to number the living



objects in a cubic inch of stagnant water. How unfathomable are the mysteries of creation by which we are surrounded, and upon which our very life and enjoyment depend! But this fact will give you some idea of the insect world, and I trust will be sufficient to show you that book-learning may not be out of place, even in the head of a farmer, and that it may be made of essential service in the work of raising and securing good crops. This book-learning, to which so many farmers object, is but the result of scientific investigation and practical experiment, all brought together, arranged, and sent out to you in the form of books, pamphlets and papers, that you may see and know, how and what others have done, and what you may do under like circumstances.

The idea is preposterous, and ruinous to every interest, that we must plod on through all our pursuits, in the old beaten track of past generations. Every advance we have, whether on the farm or in the work-shop, is the result of investigation, experiment and invention,—a seeking out of some new way, or some new help. The rearing of a fine horse, or a valuable yoke of oxen, or a wonderful calf, (as Mr. Cyrus Wheeler, of West Waterville, can demonstrate,) is not a matter of chance or accident, but of study and calculation. Those machines, by which you reduce the severity of toil and do your work better, are the products of study, genius and industry. You can have no good reason to expect that your stock will be better, or your crops more abundant next year, than they were last, if you pursue the same course. But if you would improve these, you must study how—indulge in some experiments, and draw conclusions from results. Resolve that you will do, and the battle is half fought.

But there are many others here to-day, besides the farmer, who have an interest in these exhibitions, and who may be benefited by them. The mechanical department of your society affords an opportunity, and extends an invitation to every branch of mechanical toil and industry, to be here and take part in these proceedings. Your company is desired, that you may receive new ideas, and gather up new suggestions; for anything and everything that inspires in you or others, thought or inventive genius, is of consequence, and productive of good to the world. Whatever your trade, its products are essential, and we wish to see them here, offered for exhibition.

If of their kind, they are superior in workmanship or utility, that superiority will commend itself, and secure a demand for the work of your hands. I would repeat what I said in an address last year: "Mechanics, don't be ashamed of your trade; but make something, and here exhibit its good qualities. If you can't make a railroad car, make a wheelbarrow, or a drag, or a harrow. If you can't make a mowing machine, a reaper, or a corn-sheller, make a scythe-snath, or ox-yoke, or hoe-handle. Make a sofa, chair, table, churn, or wash-stand, or even a jumper for the baby; or if you can't do any of these things, bring the baby without the jumper."

And this idea I would urge upon the farmer. Raise something—a colt, calf, or pig—a braid of corn, a sheaf of wheat, a bundle of flax, a measure of potatoes, a squash or pumpkin—anything valuable as a product,—bring it here and let it speak for itself, and encourage others to go and do likewise. And not only do this, but help the wife to bring something from the kitchen—a pot of pickles or a leg of ham, a jar of preserves or a bottle of ketchup, a box of butter, a string of dried apples, a loaf of old fashioned rye and Indian bread, or a pot of baked beans. All these things are helps to the interest of these occasions;—they go to make up the great total. And not only this, but a general interest is excited, and a healthy ambition leads on to new efforts and successes.

But let it not be supposed that the farmer and mechanic are the only ones to be profited by, or who should take part in these fairs. The operative, the merchant, the man of wealth, the clergyman, doctor, lawyer—every honest and industrious man, and well-wisher of society, has an interest here:—if this society declines through want of encouragement, all of us are losers—if prosperity attend it, all are thereby benefited. In this society, ladies and gentlemen, are involved the first and paramount interests of the county, and for this reason—in agriculture we have the basis of our prosperity. It is here that we quicken the pulse of industry, give new form to old ideas, develop the mechanical genius of our young men, and encourage thought, investigation, experiment—success.

And here I would say a few words to our young men, whether belonging to the farm or to the shop. Your success in life depends almost entirely with yourselves. Your career will be essentially what you determine it shall be. If you have no desire to rise above

the common level, you will not; but if you resolve to be something in the world in which you live, and be somebody among other men, you will—and neither poverty nor wealth can forbid. You can, however, hope for but little, unless you aim high and act accordingly; and your aim must be high, that your acts may be noble. Don't for a moment think that a man *is a man*, because he is a dandy; neither broadcloth, jewel-ornaments, nor self-conceitedness make a man. A man is a man, *because he is a man*, and nothing but his manliness can make him a man. Gather up knowledge, therefore, as the safest investment, as the surest capital,—as a bank where your drafts will be honored at sight,—an agent that will open broad the highway to success. Instead of wasting your spare hours and evenings in taverns, stores and shops, spend them at home, with books and facts, of art and science. Learn to think. And from your thoughts, act, remembering that he is noblest who most nobly does. There are those who would degrade labor—make it mean and low-born to earn “our daily bread” by “the sweat of the brow.” But it is only through the blessing of labor that we are what we are. He who despises labor, despises his birthright, tramples under foot the royalty of his nature, and becomes a slave to vanity and ignorance. Such possess but little of the true nobility of manhood.

I pity the imbecility and want of self-respect in those young men who turn their backs upon manly toil, and drift along life's uncertain current without any real object or aim in view. Such—and such there are—young men with stalwart frames and muscles like steel, who, if they can get a second-class clerkship in some candy-shop or beer-saloon, or third-rate milliner's store—talk and swell, and act, as though they were at the head of all human affairs, and that without them all things in heaven, on earth, and under the earth, would turn back again into chaos.” See, in your mind, such an one, as he stands in his accustomed place, and sells to that light tripping school miss a sugar heart—fit emblem of his own; or with what a patronizing air he serves out to that bloated reeling wreck of humanity, a glass of lager-bier; or with what a dignified suavity he deals out to that old lady, a piece of tape, a darning-needle, or a diaper-pin. And this is thought to be manly—something more dignifying and honorable than the labor of the farm or the dust of the shop. What concentrated folly!

But this idea—this debasement of the noble powers of mind and body—is not confined to our young men alone; some of our young women are exhibiting symptoms of a relaxed mentality. To milk the cows, or work over a churning of butter, to card, spin, and weave, to make up a batch of bread or a baking of pies, or to be of any substantial aid to the toiling mother,—why! what will that latest imported French dancing dandy, with his beautifully curled moustaches, and his borrowed opera-glass think, to find the subject of his last night's flirtation in the kitchen, with her cosmetic bloom all faded—her ringlets all done up in papers? Shame! shame! on all such false pride and bemeaning of one's self.

And parents, with us rests the responsibility of teaching the rising generation to shun all such degrading gentility. It is for us to impress—as one of the foundation principles of their life—as a controlling influence that should never be lost sight of—and as the highest reward of all effort—the great truth, that all productive labor—everything that adds comfort and convenience, that elevates the tone of social and domestic life, and increases virtue and piety, is honorable and praiseworthy. We must teach them to appreciate labor as one of the choicest of blessings, and that industry is one of life's truest virtues. By doing this, we shall break down the walls of that sham and despicable aristocracy which comes from the indolence, ignorance and caste of the old world, and open to them the broad highway of human activity, where the hand, the head and the heart may have full scope for exercise, and strive for the prize of true manly greatness.

In this connection, and in behalf of your honorable President, and the gentlemen of the Board of Trustees, I would return to the ladies an expression of thanks. And, ladies, this is no unmeaning tribute. *We are indebted to you* for the chief attractions in the exhibition room. Such quantities, varieties and excellencies of work—embracing utility and taste—as you have presented, are an honor to you, and of which this county may feel justly proud. They exhibit to us proofs of that industry and unflinching toil which make New England what she is, and which place our wives and daughters in the foremost rank of intelligence, virtue and refinement. And let these beautiful and useful examples of work be but the incentives to still greater effort.



Sir: I did intend to have offered a few reflections touching upon the athletic and equestrian exercises, now somewhat popular as a part of these occasions. One brief remark, however, must suffice. It is this—these exercises properly conducted, are useful, both as an amusement and a recreation; and excess guarded against, they may be an interesting and profitable feature of these exhibitions.

And now, sir, I must bring these remarks to a close; and yet all I have said is but a preface to the great subject as it unfolds before us. But in closing, let us for a moment turn our thoughts to the future. And that future, mysterious and unrevealed as it is, is ours—ours to embrace for noble aims and manly deeds—ours to impress with high and worthy thoughts—ours to mold into a more perfect life. The past gives us a key to the future. The crystal palaces of London and New York, do not belong to England, nor to the United States, but to the civilized world—to every department of industry, art, science and literature. And to all these they have given a new and mighty impulse, which, in results, reflects upon the future grand constructions and conditions, and mighty achievements. They have opened a broad and deep channel of intelligence to the world—they have united continents by a strong bond of reciprocal feeling. And, sir, neither you nor I, can estimate these results, in the elevating of the nations of earth. A practical beauty and sublimity is growing out of them, as seed sown on good ground, that foreshadows a new and bright link in the mental and moral destiny of the race.

Our worthiest toil is a toil that shall act upon and mold future interests for good. The establishing of this society was not for yesterday or to-day, nor for next year—but so long as seed time and harvest shall be. It is an institution fostering incentives to manliness, to vigorous toil, to enduring effort, to moral greatness. Here is engendered the true nobility of the American heart. Let its power and spirit work on in flowing tides, and swell out in harmonious notes, 'till from every hill top of New England—'till from the valleys of the Mississippi and the Ohio—'till from the deep gorges of the Rocky Mountains—'till from the golden plains of the Pacific, shall be heard the inspiring chant of "Peace—Unity—Plenty"—mingling with the anthem of a hundred million tongues—"We are free!—we are free!"



## FROM REPORTS OF COMMITTEES.

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TOWN TEAMS OF OXEN.

The Committee on Town Teams of Oxen report, that "there were seven teams presented for our inspection. One from Poland, by Thomas Cousens, ten pairs of which average in girth seven feet, three inches; one from Danville, of ten pairs, by Moses Fitz, average girth seven feet, one inch; one from Turner, by Phillips Bradford, average girth seven feet, two inches; one from Lewiston, by D. Holland, average girth seven feet, three and one-half inches; one from Auburn, by Mansfield Davis, average girth seven feet, one inch; one from Webster, by Wm. Moody, average girth six feet, eleven inches; and one from Greene, by Wm. M. Longley, average girth six feet, nine inches." They say that "the teams were all handsome, and showed clearly that the owners take some pains and some pride, and put more value upon such stock than upon either fancy, railroad, or factory stock."

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WORKING OXEN.

The Committee on Working Oxen report, that there were five pairs of oxen entered for premium, all of which did credit to their owners, and to Androscoggin county. First premium was awarded to Phillips Bradford of Turner; second premium, to Joseph Dill of Lewiston; third premium, to Wm. Moody of Webster.

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MATCHED OXEN.

The Committee on Matched Oxen report, that "there were fourteen pairs of oxen exhibited for examination, and all were fine specimens, showing a decided improvement in this class of stock over former years—being well matched, well formed, hard, active looking, and

apparently intelligent in their own order; and if they could not communicate by articulation, they did most assuredly communicate the fact, that they were well-fed and cared for."

"Hoping that the time is not far distant when the society's premiums on such stock will be higher and more numerous, and taking into consideration all the properties constituting a matched pair of oxen, such as bone and muscle, symmetry of parts, or proportions, color, hair and horns, and the apparent disposition, they award to Zenas Whitman of Auburn, the first premium; to Robert Martin of Danville, the second, and to J. H. Deering of Webster, the third."

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#### DRAUGHT OXEN.

The Committee say: "Whether or not, the perplexities of justly adjudicating upon the draft of oxen has been a perplexity to former committees, the present Committee feel embarrassment on several unsettled points. 1st. What are the precise requirements of each according to his size. 2d. If he fails to move the load, to which he is tied, how much does he lack. And a multitude of little points may be raised, which for want of demonstration may receive almost as many answers as there are persons to decide."

After giving details of the several trials, they say: "From examination of the exhibitions we award the first premium to Thomas Cousens of Poland; second, to I. G. Field of Lewiston; third, to George Bubier of Lewiston."

"After the exhibition of all the oxen entered as draught cattle, A. G. Thurlow of Poland, gave a splendid exhibition of strength and discipline in a pair of oxen, excluded as competitors in consequence of winning previous premiums."

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#### DRAUGHT STEERS.

The Committee on Draught Steers report, that there were entries made of five pairs of three years old steers and two pairs of two years old. The load upon the drag consisted of a single stone

weighing 3,867 pounds, (nearly two tons,) to be dragged upon the *sand* or *gravel*. And the Committee are of opinion, that it is load enough for a pair of well-trained oxen of good size..

The trial was well contested, and first premium awarded to John N. Davis of Lewiston, second premium to George Jones of Webster.

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#### STEERS AND STEER CALVES.

The Committee on Steers and Steer Calves report entries of twelve pairs, of which they speak well. They "have no hesitation in saying, that the lovers of good oxen need not for many years to come, go from the county of Androscoggin to find them."

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#### FARM STOCK.

The Committee report, that there were five entries made on Farm Stock. They award

To Augustus Sprague of Greene, the first premium, for his fine variety and quantity of Durham and grade Durham stock, (sixteen in number,) consisting of one large and finely made bull, four years old; five cows, one pair of oxen, heifers and calves.

To Benjamin P. Rackley of Greene, second premium, for his variety of Durham, Hereford and native stock. This stock appeared very well considering its proximity to large meadow country.

The third premium, to Milton Carville of Lewiston.

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#### COWS AND HEIFERS.

The Committee on Cows and Heifers, having attended to the duty assigned them, report:

There were a large number of competitors for this class of stock. The larger premiums were as follows:

A. Sprague of Greene, first and second premiums on Durham cows, full blood; first on three years old heifer, and first on two years old heifer.

Wm. M. Longley of Greene, first premium on one year old full blood Durham.

John Holland, jr., of Lewiston, first premium on Hereford cow.

J. D. Pettengill of Auburn, first premium on native cow.

Otis Preble of Wales, first premium on two years old native heifer.

A. C. Reed of Lewiston, first premium on one year old native heifer.

Isaiah Wentworth of Poland, on full blood Devons, a dozen or more of premiums. His statement is as follows :

“I find the Devons are more cheaply kept than other breeds, and fatten easily. They are very tough to stand cold winters. The steers match easily. Cows will not give so much milk as natives, but will make as much butter per cow as any breed in my knowledge. Experience has shown me that Devons can be kept a quarter cheaper than Durhams or native stock. I have taken one Durham and one native cow, the best I could find, and tied them in same stable and between two Devon cows ; fed all alike ; let each cow raise its calf until four months old. The Devon kept fat while the Durham grew poor. I would be glad to show any one who will call upon me, the difference. A cross of Devon and Durham makes the best farm stock for this State. Devon gives color and shape, Durham gives size. I have sold all my Durhams and natives, and now have thirty-five head of Devons, bulls, cows, heifers and calves. The Devons combine more good qualities than any other breed within my knowledge.

ISAIAH WENTWORTH.

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### BULLS AND BULL CALVES.

The Committee say, “that those of our citizens who have been pioneers in the improvement of breeds of neat stock, have embarked in an enterprise highly promotive of the interest of our agricultural community, and from which, they are beginning to reap golden harvests.

The origin of our society is so recent, and the time so limited in which our attention has been to any considerable degree turned in this direction, that there has not yet been ample opportunity for

determining what breeds, on the whole, possess the largest number of the most desirable characteristics.

Your Committee, however, are unanimous in the opinion, that taking into account, size, form, properties for the dairy, tendency to fatten, power of draught, and mildness of disposition, that the Durhams take the lead.

A cross of the Hereford will make them more hardy, diminish a very little the size, and will not unfavorably affect the form. The effect of the Devon would be similar, but in an increased degree.

There were fifteen entries for premiums, viz: Robert Martin of Danville, Jona. Mower of Turner, W. S. Parker of Greene, Franklin Whitman of Turner, Henry W. Sawtelle of Poland, Isaiah Wentworth of Poland, Phillips Bradford of Turner, Augustus Sprague of Greene, Dominicus J. Rowe of Danville, Aaron Daggett of Greene, Benjamin P. Rackley of Greene, Joel Wright, jr., of Greene, Asa C. Mitchell of Auburn, Peter Garcelon of Webster, and Sewall Moody of Webster, all of whom, if they do not receive premiums, are entitled to much credit for their efforts to improve our breed of stock."

Among the premiums are, first, to B. P. Rackley, for best Durham bull; to Robert Martin, for best grade Durham; to Isaiah Wentworth, for best Devons.

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#### SHEEP.

The Committee on Sheep award first premium to Jacob Parker of Greene, for Canadian buck, of long wool and moderately fine; the second premium, to A. Richmond of Greene, for a buck similar to above.

There were several other bucks presented; one by Wm. Garcelon of Lewiston, a yearling buck, full blood Merino, rather poor, but had very excellent wool. The Committee think very highly of this breed of sheep for wool, but when mutton can be sold at the present prices, a breed that will grow larger and fatten easier is preferable.

Mr. Leach of Danville, presented a buck of uncommon size, but had not a sufficient quantity of wool for the body. This buck was a great curiosity—his head being put on to the body wrong side up,



his nose pointing heavenward, and never ate a mouthful without lying down. Wm. N. Marrow of Lewiston, presented the best flock of sheep, six in number. They award him the first premium of \$2. The second premium, to Joel Moulton of Greene.

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### SWINE.

“Like other distinguished personages, the *swine* is known under a variety of titles. In all solemn, official papers, like the present, he is styled *swine*, a learned word of Latin derivation; in familiar parlance, however, he is known as *hog*, which is Welsh. When cold in death, he is still *hog*, but only so long as he retains his integrity, for when cut up by his murderers in barbarous imitation of the Harvard Professor, he becomes *pork*. But when addressed personally, his title is *chook*, which is said to be Persian.

Besides the pure hog proper, we have the *quahog*, which wears a shell instead of bristles, the *hogreeve* who holds office, the *hedg-hog*, *seahog*, &c. Of these, however, it is not necessary to speak, since none have been entered for a premium.

The genuine swine is unquestionably a noble animal, though greatly slandered. His family is of great antiquity. Created early in the forenoon of Friday of the first week of the world's existence, (Genesis, Chap. 1, v. 25,) his pedigree is more aristocratic than ours, since man did not make his appearance until late in the afternoon of the same day, (v. 27.) Accordingly, in the early ages, the swine appears to have been invested with a peculiar *odor of sanctity*—with something of that dignity that used to “hedge about the person of a king,” and the most rigid laws were enacted to prevent the destruction of the species.

Thus, even the Jews, whose privileges far exceeded those of any other people, were forbidden to eat pork, doubtless that the multiplication of the race might not be interfered with. After this honorable introduction upon the earth, and protection from the flood in one of the best corners of the ark, the hog continued for several thousand years to “increase, multiply and replenish the earth.” Unfortunately for him, however, the invention of pork-steaks about this time introduced a new era in the history of the hog. This delicious

luxury was discovered by a Roman priest, whose name has not come down to us. He had been broiling a piece of pork, to be offered to the god in whose temple he officiated, and seizing it by the thumb and forefinger for the purpose of conveying it to the altar, he was compelled to drop it, and instinctively placed the thumb and finger in his mouth. They happened to be covered with the juice of the steak, which he tasted, and lost all sense of pain in the exquisite enjoyment thus conveyed to the palate. Being a man of genius, he proceeded to place another slice on the coals, which, being cooled, he incontinently devoured, losing sight of his official duties, which required him to place the meat before the god.

For a long time he pursued this course, until his sleek and jolly appearance attracted attention, and he was watched and the secret discovered. He would have been put to death, but having persuaded the judges on his trial to eat a steak, he was therefore not only acquitted, but made High Priest, or Pontifex Maximus, as they called it, as a reward for the benefit he had conferred on mankind. Pork-steaks immediately became the rage, and broils were continually going on from that time all over the empire; for the Romans were a good deal quicker-witted than the Chinese, who always think it necessary to burn down a house every time they roast a pig, and they did not suppose that pork-steaks could be cooked only in temples. It was a blessed day for mankind, but a bad one for the swine, when the priest burned his fingers, for as soon as the news spread into Judea, all the Christians belonging to that nation determined to eat pork-steak, and for this purpose procured the repeal of the act prohibiting the same soon after the year one of the Christian era. \* Another evidence of the exalted character and great value of the swine, is the fact that he has found many close imitators in the human family, between whose tastes, habits and appearance and his own, no perceptible difference can be traced.

In stature the hog is short but portly. His weight at the present time rarely exceeds five hundred pounds, yet your Committee have seen *hogs-heads* of an enormous size; they are supposed to have once belonged to an ancient race of mammoth swine all extinct. In character, the hog is "*independent,*" particularly "*on ice;*" fixed in the maintenance of his opinion, and like old Hickory, "*hard to drive;*" of marked *individuality* even in early youth, as has been

found by those who have inadvertently "*taken the wrong pig by the ear.*" The voice of the hog is agreeable, especially to the owner, although according to modern notions, not strictly musical, when provoked or alarmed; at other times, it is highly suggestive of peace, happiness, contentment, indifference, clear conscience, and good living. The hog does not like to be cut up, and hence it is popular with him, as with us, "*to go the whole hog*" as long as he can, and finally will always "*root, rather than die.*" In politics, he inclines to "*free soil,*" never voting nor attending any caucus, but manifesting his preferences by "actions which speak louder than words." In practice he is a teetotaller, and hence is always able to get out of the gutter without assistance, which some of his biped companions are rarely able to accomplish.

With these introductory remarks, we leave the hog, *philosophically* considered, and proceed to state the result of our observations upon the individual swine introduced to us by our fellow citizens of the county, on the morning of Tuesday.

Your Committee propose the following awards, viz :

To Robert P. Briggs of Auburn, for the best boar, the first premium.

This boar is a full-blooded Suffolk, sixteen months old. This animal is so fine a specimen of that breed, and withal so cleanly, that we are inclined to hope that "the true proverb" touching his lady does not apply to his case, and that after so thorough a washing, he will not, like her, "return to" his "wallowing in the mire." The Suffolk is rather a small swine, but is valued for his omnivorous appetite, readily eating almost anything given him, the consequent rapidity of his fattening, and the superior quality of his pork. He was raised by Mr. Briggs, and has never had any corn nor meal.

Milton Carville of Lewiston, directed our attention to his Suffolk boar, seventeen months old. He is somewhat smaller than the one just noticed, and has run at large during the summer in the woods, picking up his own food. By reason of these hardships, his hide has become a trifle the worse for wear, and in that respect as well as in his general appearance, inferior to that gentlemanly brute. Your Committee, therefore, venture the suggestion, that while every thing like dandyism or dressiness should be discountenanced in a

boar, still a little more regard paid to his personal appearance by Mr. Carville's swine would make him a more general favorite with the polite public.

Last year he made his appearance as a pig, and received a premium.

We award Mr. Carville for the second best boar, the second premium.

Wm. M. Longley, Esq., of Greene, offered a sow of the mixed Suffolk, Berkshire and Newbury White, with a litter of nine pigs just a fortnight old. This affectionate and dignified matron, surrounded by her numerous family of fat, clean, healthy pigs, made a very fine appearance.

This cross comprises the ample sow of the Berkshire, with the peculiar good nature of the Newbury White, and the rapid growth and fine flavor of the Suffolk variety. Mr. L. has left this sow under his barn upon the waste of his barn and kitchen. If all "little pigs" were as fat and tempting as hers, the great moral truth that such "make the best of bacon" would at once become a self-evident proposition.

We award Mr. Longley for the best breeding sow, the first premium; and also for the litter of pigs not less than six.

No other premiums are awarded, because, although we observed several other swine around the enclosure just outside the fence, none besides those named were entered for our examination.

In taking leave of this seductive subject, to which we have devoted a vast deal of time and thought, and in which as men of *taste* we feel a vital interest, your Committee regret the scant exhibition of swine at our County Cattle Shows, and venture respectfully to suggest to their fellow citizens, the farmers of Androscoggin, that an increased care in the choice of their breeds, in the raising and fattening of their pigs, and in the curing of their bacon, would be amply rewarded in the augmented quantity, quality and price of their pork.

All which is respectfully submitted.

C. W. GODDARD, *Chairman.*

## POULTRY.

“Of geese, there were three entries.

To S. V. Shaw of Greene, who exhibited eleven geese, the Committee award the first premium. The flock consists of a goose, gander, and nine goslings five months old. They are a cross of the Bremen and India breed, large size and hardy. They were fed to grass, and would weigh on an average, eleven pounds when dressed.

To Jonathan Mitchell, Jr., of Lewiston, who exhibited ten geese, the second premium. These were natives, hatched in May, and made a fine appearance, having obtained their own living.

H. G. Rose of Greene, presented a lot of twenty, five months old, marked natives.

The only contestant for the premiums on turkeys was Azor Merrill of Lewiston, who offered nine in number. They were fed for two weeks on curd made of sour milk, and then got their own living until the middle of September. Since then they have been fed on boiled pumpkins. They would take a premium anywhere.

One entry of ducks was made by Israel Mitchell of Durham—seven in number,—and an unusually fine exhibition. They picked up their own living.

Of hens, but two entries were made.

To S. H. Read of Lewiston, the first premium. These were three males and fourteen females of the Poland and native mixed. They were hatched the 15th of June. They seldom want to set, and lay about all the time. Lady Topsey is the only one out of a litter of ten, raised two years since, that has desired to set. She covered twenty-one eggs, hatched out twenty chickens, three of which died by injuries—the remaining seventeen were on exhibition. They appear to be a well behaved family.

To O. P. Cole of Greene, who offered twelve hens, full blooded top-knots, the second premium.”

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PLOWS AND PLOWING.

“There were six entries for plowing, but only four competed for the premium.

The team of Mr. Haskell of Lisbon, consisted of two yoke of oxen,



girth six feet ten inches each, and plowed one-eighth of an acre in thirty-two minutes, with the Haskell plow. We award him the first premium.

The team of Mr. Field, two yoke of oxen, average girth seven feet one inch, plowed one-eighth of an acre in forty minutes, using the Haskell plow. To him we award the second premium.

The plowing by Mr. Whitman with two yoke, average girth six feet eleven and a half inches, plowed one-eighth of an acre in thirty-two minutes, using the Hersey plow. To him we award the third premium.

There were seven entries on plows—the Hersey plow, three of the Haskell plows, three of the French plows, and a subsoil and sod plow.

A plow entered by Jairus Haskell, your Committee are of the opinion, performed the best work with the lightest draft. To this we award the first premium.

The second premium, to the Hersey plow entered by Mr. Whitman.

The third premium, to plow entered by N. French.”

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#### FARM PRODUCTS.

The Committee on best and greatest variety of Agricultural Products raised on any one farm, report, that “they find only two entries for premium; one by S. V. Crush of Lewiston, the other by Reuben Stetson of Greene.

After carefully examining and comparing all the articles exhibited by the competitors, your Committee have come to the conclusion, that Mr. Stetson is entitled to the first premium, and Mr. Crush to the second.

After witnessing what we have of the agricultural products of Androscoggin county, we are fully of the opinion, that there is no need of going west for necessaries, solid comforts, or the luxuries of life. And we believe, too, that if the young men who have a desire to go west, will be content to labor as hard and live as prudently

here in Maine as they would have to in the west, they may on the average accumulate as much property and be as smart men and as good men here, as they can be in all the great west."

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### DAIRY PRODUCTS.

Among these were two excellent firkin-cheese, by Mrs. Stephen Davis of Lewiston, one of them stained; both well deserving a premium.

About fifty specimens of butter and cheese were presented of nearly equal quality.

The first premium on butter was awarded to Mrs. Charles R. Mitchell of Webster; the second, to Mrs. H. W. Sawtelle of Poland; the third, to Miss Mary J. Loring of Danville.

The first premium on butter made prior to July 1st, to Mrs. Sewall Moody of Webster, for a jar of packed butter; the second, to Mrs. Phillips Bradford of Turner; the third, to Mrs. Joel Moulton of Greene.

A few specimens of butter, made by girls under sixteen years of age, were presented. One jar, very fine, made by Miss Eldora F. Moody of Webster.

The first premium on cheese, to Mrs. Rufus Prince of Turner; the second, to Mrs. B. L. Townsend of Auburn, for two very fine cheeses, one of them stained; the third, to Mrs. G. W. Blossom of Turner, for two cheeses of excellent quality.

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### FRUIT.

The Committee on Fruit report, that although fruit is not the staff of life, it is one of the luxuries and necessities, the withholding of which would soon render man unhealthy. We should encourage its cultivation more extensively, not only apples, pears, plums, but also, the smaller varieties of fruit. We should select the best varieties, and pursue a more scientific mode of cultivation.

For premium on apples there were nine entries :

James Robinson of Durham, three varieties of winter apples.

Robert Martin of Danville, five varieties of winter apples. Very good.

Ira T. Waterman of Auburn, eleven varieties of winter apples, and is entitled to your first premium.

E. N. Nelson of Minot, twenty varieties of excellent growth for this year, and containing many of our best varieties, and is entitled to second premium.

Phineas Wright of Lewiston, seven varieties, and is entitled to third premium.

Reuben Stetson of Greene, twenty-three varieties, and is entitled to first premium on fall apples.

J. M. Richardson of Greene, nineteen varieties, some very good, some ordinary, and we award to him the second premium on fall apples.

Oliver Mower of Greene, seven varieties, very good.

There were but two varieties of pears, one by Stephen Stinchfield of Poland, some Bartlett pears, raised on the mountain ash stock, a fine specimen of what may be done. To him we award the second premium on pears.

Lewis Gilbert of Greene, Bartlett and Louise Bonne de Jersey pears grafted on the quince, the first premium.

On grapes there were five varieties entered :

G. W. Blossom, a sample of Isabella, grown in the open air, but not ripe.

Stephen Stinchfield, Isabella, open culture, not ripe.

John Coffin, West Gloucester, Northern Muscadine grape, open culture, not ripe.

E. P. Tobie of Lewiston, six varieties of grapes, viz: Isabella, Concord, Sweetwater, Northern Muscadine, Diana and Clinton. Mr. Tobie's grapes, though not so well grown as some others, were best ripened, and are entitled to the first premium.

## FLAX.

James Robinson, in his statement, says he grew one hundred and two pounds of straw, and three pecks of seed, on one twentieth of an acre, from three quarts of seed.

The Committee were pleased with even this small beginning to raise what should be one of the staple articles of production in this State. But instead of measuring the ground by twentieths, it should be by thousands of acres.

Not that we would have it raised to be manufactured upon the old fashioned treadmill principle, but would like to see some of the water now running idly away brought into use for that purpose.

AUGUSTUS SPRAGUE.

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## COMPOST MANURE.

The Committee remark at the beginning of their report, that they "are instructed to award premiums to those persons who have made their compost manure in accordance with agricultural chemistry; thereby requiring them, whether competent or not, to judge of things pertaining to that science.

The object of this report in part is, to show that it is indispensable to the practical farmer to have some knowledge of agricultural chemistry, the science of farming."

After somewhat extended observations intended to illustrate and enforce this point, they say, "there was but one entry for premium, and the following question arose in regard to it: has Mr. Gilbert made his compost as required by the Trustees, or, approached so nearly to it, as to entitle him to a premium? This question was fully discussed by the Committee, and decided by a majority, in the negative.

We find that his compost was made of equal parts of unfermented horse manure, and muck, which was made as fine as practicable. His muck was thrown from the pit last autumn, and like most other muck, contains acid, but doubtless a portion had escaped by exposure. We think he failed by not applying chloride of lime, or some other alkali, to his muck, to remove remaining acid, previous to compost-

ing. There should, also, have been an application of plaster of Paris, or charcoal dust, to fasten the ammonia and prevent its escape, and we believe his compost would have been greatly improved by irrigation from the drainage of the barn-yard, or some other liquid. We are fully of the opinion, that competitors must come up in some good degree, to the requirements of the Trustees, or not be entitled to a premium.

We are aware, however, that Mr. Gilbert is one of our most scientific farmers, that he makes much excellent manure, and receives ample returns."

It is fair to presume that Mr. Gilbert cheerfully acquiesced in *the decision of the majority*, as all good citizens who enjoy the benefits of a democratic form of government ever feel bound to do; but that majorities *do not always* adopt the wiser course, we have abundant evidence in all history from the days of Noah and Lot, downwards; and it is possible that the decision above may prove upon examination to be one of the frequent illustrations of the same fact to be met with during the present century.

This muck, it is said, contained more or less of acid, and needed some alkali to neutralize it. Very probably it was so, for such is usually the case. Horse manure, during fermentation, evolves ammonia, which is *an alkali* and more valuable to the farmer than either potash or soda; moreover, ammonia enters readily *into combination with acids*, and is then more firmly fixed or secured for the farmer's use than when simply *absorbed* (as a sponge holds water) by charcoal or other absorbant. When horse manure and muck are mixed in equal quantities, the amount of alkali (ammonia) furnished by the first is abundantly sufficient to correct whatever free acid there may be in the muck, and also to act upon and prepare the vegetable matter in it for immediate and efficient usefulness. Chemical science and experience bear a uniform testimony to the goodness of compost thus made—each corroborating the other.

The Committee remark: "We think he failed by not applying chloride of lime or some other alkali." How is this? Chloride of lime is not an alkali, nor can it under any circumstances be expected to act the part of one. It is an excellent disinfecting agent—readily neutralizing offensive effluvia. It will also discharge vegetable colors, and is used to bleach our cottons and linens. If applied to



growing plants, it will readily discharge vegetable life as well as color. It is true, that by long exposure to the air it decomposes spontaneously, and a muriate of lime remains which is not harmful to plants and under certain conditions may be used to advantage. This muriate of lime is one of the salts generated in preparing the "salt and lime mixture" used for preparing muck, but it is not this, but the free alkali (soda) evolved in the same process, which acts so beneficially upon the muck. (See page 172 of Report for 1857.)

It is very gratifying to find agriculturists awake to the importance of chemistry, and it is by no means pleasant to differ from those who honestly try to arrive at correct decisions; but we deem it a duty to utter a word of caution here. Agricultural chemistry is a science *not* to be fully mastered in a single month nor a single year, and there is danger lest "a little learning," *by its imperfection*, "prove a dangerous thing."

When a man "makes excellent manure," and from its use "receives ample returns," it is quite safe to assume that his compost was prepared in accordance with the principles of *true* chemical science, and to give little heed to "vain babblings and the oppositions of science *falsely so called*."

Mr. Gilbert's statement is appended :

*To the Committee on Compost Manure* :—I have composted thirty cart-loads of manure in the following manner, this season :

After I get done planting, say the first of June, I commence making my compost by moving from the further end of my manure shed all the manure, say five feet wide across the end; then let one hand take a six-tine fork and make fine one-half bushel of dung; place another hand at the muck heap, which is on the outside, piled against the wall of the manure shed, let them heave in at the window, or under the boarding, at some place prepared for the purpose, muck sufficient to cover the bottom, then let both hands throw the manure and muck together in equal quantities, as near as they can guess, until they get the strip sufficiently high. Put another hand at the muck, if needed, then take another strip across, and so on, till the manure saved from the leanto is used up. Then I commenced hauling my horse manure, thrown into an open shed the winter before, where sheep laid on it when they pleased, mix as

before, till all is used. I have also a vat under my sink-spout where I have made two cords by filling it with muck; also some two cords in the hog-yard, by putting in muck and turf; and about eight cart-loads in the shed where we took away the horse manure, which we filled with muck, the whole of the yard draining into it. We keep muck under the privy, and all other places where any thing may run to waste. After using this fertilizer for three years, I can recommend the same mode of preparation to others. My hen-roost is in the shed, and all their droppings are in the compost.

LEWIS GILBERT.

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### CROPS.

Tristram Hill raised fifteen and one-half bushels of Scotch Fyfe wheat on a dark colored loam which was in corn last year; plowed eight inches deep and sowed one and one-half bushels of seed, broadcast, on the 20th of May; the seed was soaked and dried in lime; harvested on the 20th of August when quite green.

Charles Maxwell of Poland, raised twelve and one-half bushels of Golden Straw wheat upon a sandy loam fifteen inches deep, resting on an open subsoil of yellow loam; land was in grass last year, and manured in the hill; plowed eight inches deep and harrowed; sowed the seed on the 26th of April, and harvested on the 25th of August, when fully ripe.

Zebina Briggs raised one hundred and sixty bushels of ears of corn on a stiff clayey soil one foot deep. Has been in pasture. Plowed eight inches and harrowed; twenty loads of manure, well rotted, was applied; planted on the 28th of May in hills three and one-half feet apart; hoed twice and cut up at the stalks when nearly ripe, on the 30th of September.

Peter Garcelon raised one hundred and fifty bushels of ears of corn on a fine soil, part of which is stony and a part clayey loam; broke up late last fall; plowed ten inches deep and applied forty loads of slaughter and hog manure with the addition of a load of sand to four loads of the manure; fourteen loads of the same manure were applied in the hills, and in each hill a tea spoonful of

mixture of plaster, lime and ashes; cultivated twice before hoeing the first time; hoed the second time, adding a small handful of lime, ashes and plaster in each hill; cut up at the roots and shocked it about the middle of October. Thinks it much better to cut up at the roots as the corn is much riper and harder, while too, the fodder is much better. Raised also on the same acre, twenty-six shocks of white beans.

F. S. Mitchell of Greene, raised one hundred and forty bushels of ears of corn on a fine light loam about two and one-half feet deep, of a dark color; the land was previously in grass; plowed ten inches deep and spread broadcast fifty loads of thirty bushels each; planted on the 20th of May, the rows three and one-half feet apart and the hills three feet apart; cultivated and hoed twice; top stalks cut when the corn was glazed.

Wm. Skelton raised one hundred baskets of five pecks each of sound Dutton corn, on a dark strong soil which was in grass for forty years; was never plowed before; plowed ten inches deep and harrowed, and spread three cords of barn-yard and stable manure, and three cords in the hill; planted the seed, which had been wet and rolled in plaster, on the 31st of May, in hills four feet each way; applied ashes as a top dressing; cut up at the roots and shocked it on the middle of September. Also, seven bushels of beans on the same acre.

Samuel Chadbourne of Greene, raised two hundred bushels of potatoes on a stony loam; in oats the previous year; plowed eight inches deep, and applied five and one-half cords of manure; cost of crop, twenty-two days' work.

Tristram Hill raised one hundred and eighty-eight bushels of sixty pounds each of long red potatoes, on a yellow loam, somewhat stony; in grass last year; plowed nine inches deep, and added six cords of stable manure; the seed was sprinkled with slacked lime, and a small handful was placed in each hill; cultivated and hoed once; sowed twelve bushels of seed on the 20th of May, and dug on the 18th of September.

F. S. Mitchell raised one hundred and fifteen bushels of long red and pink-eye potatoes mixed, on a light loam of a dark color, with a gravelly subsoil; the land was in pasture previously; plowed

shoal and harrowed, planting in hills the 1st of June, ten bushels of seed, and harvesting on the last of October.

Ebenezer Ham grew four hundred and sixty-five bushels of ruta bagas on three-fourths of an acre of sward land, turned over in May, and manured by spreading six cords of stable manure and harrowing in; it was then ridged and the rows sown three feet apart, 10th of June; thinned out and hoed. Had they not suffered severely from worms, he thinks there would have been upwards of one thousand bushels per acre.

John L. Davis raised three hundred bushels of purple top ruta bagas on half an acre of sandy loam; in grass previously, yielding half a ton to the acre; plowed ten inches deep and added three cords of long manure, applying it in the furrows, covering the manure three inches deep.

Samuel Chadbourne of Greene, raised two hundred and eighty-four bushels of ruta bagas on half an acre of stony loam; applied two and one-half cords of new manure; plowed ten inches deep. Mr. Chadbourne says: "My method of raising this vegetable is, first, to plow and harrow the ground well, then furrow it deep about three feet apart; next, to drop the manure in drills, cover my manure quite deep and sow on my seed, rake it in. After the plants are large enough, I hoe them, thinning them out so as to leave them about ten inches apart."

Jacob Golden raised one hundred and sixty-three bushels of carrots on thirty and one-half square rods of light sandy loam; plowed ten inches deep, and applied three cords of barn manure.

Jesse Davis grew one hundred and fifty bushels of orange carrots on one-fourth of an acre; plowed in about three and one-half cords long manure; land a sandy loam.

William R. Wright raised twenty-eight bushels of beets on one-sixteenth of an acre of clayey loam, on which turnips had been raised the previous year; worked ten inches deep; no manure applied, save a slight wash from the barn.

Sewell Carville grew twenty-two bushels of parsnips on one-sixteenth acre of gravelly soil; worked one foot deep; the land had

been cropped with carrots for three years; no manure applied except a coat of lime, about sixty bushels per acre.

Jacob Golden obtained the first premium on a crop of hay grown on one acre of sandy loam, free from stones; previously cultivated with corn and oats; cut two and one-fourth tons the first crop—one and one-fourth the second crop—in all, three and one-half tons.

Sewell Moody obtained the second premium on a crop of clover and herds-grass, grown on one acre of fine clayey loam, in wheat the previous year; first crop, two and one-half tons—second crop, one ton—in all, three and one-half tons.

E. Ham raised seven hundred heads of cabbage on land where corn was raised last season; planted in hills two feet apart; applied light dressing of well rotted manure in each hill; hoed three times.



## SAGADAHOC COUNTY SOCIETY.

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This Society held its Annual Exhibition at Topsham, Oct. 13th, 14th and 15th. The various classes of animals were well represented—the most noticeable feature in this department being the Devon stock, including both full blooded and grades; they are of recent introduction into this county, and not before exhibited. The specimens of products and manufactures were very creditable, and an increasing interest seems to be manifested.

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### HORSES.

The first premium on stallions was awarded to Dan Fulton of Bowdoinham, on a horse of Morgan, Messenger and French blood; four years old; fifteen and one-half hands high; weighing one thousand pounds; raised by himself at a cost of about \$100. He deems this breed one of the best for docility, endurance and general usefulness.

The second premium was awarded to Harvey McMannus of Brunswick, on a Morgan and Messenger horse; seven years old; raised by himself; very kind, docile and serviceable; does farm-work whenever occasion requires.

The first premium on breeding mares, awarded to Thomas Simpson of Brunswick, on one he brought from Franklin county; now eleven years old; a good traveler, and of kind disposition—breed not given.

The second, to Drummond Cutting of Phippsburg. No particulars given.

The first premium on three years old colt, to Joel Curtis of Bowdoinham. Its mother came from Prince Edward's Island while pregnant with this colt; is now three years old and weighs eleven hundred pounds.

For best two years old colt, to Alfred Raymond of Bowdoinham, on one of Morgan and Messenger blood; weight, seven hundred and seventy-five pounds; cost of raising, \$75; value, \$200; is intended to be kept entire.

Rufus Bartlett of Bath, received first premium on pair matched horses—Morgans.

T. J. Southard of Richmond, received second premium on a pair of Black Hawk breed, eight years old.

Foster Bradley of Topsham, obtained first premium on a family horse, nine years old—Morgan.

Wm. G. Gross of Brunswick, and R. P. Carr of Bowdoinham, obtained premiums on trotting horses—the last a Drew horse.

Those severally entered by D. S. Stanwood of Brunswick, Wm. W. Patten and David Works of Topsham, Robert Purington and J. K. Millay of Bowdoinham, were well spoken of by the Committee as family and trotting horses.

Wm. F. Crooker of Bath, received first premium for saddle horse. No particulars given as to breed, &c.

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#### BULLS.

The following premiums were awarded on grade Durham bulls:—The first, to George B. Sampson of Bowdoinham; age, two years; girth, six feet, six inches. The second, to J. W. Rackley of Topsham; two years old; girth, six feet; thirteen-sixteenths Durham blood. The third, to J. P. & M. M. Wilson of Bowdoinham. The fourth, to O. S. Mitchell of Topsham.

George Skolfield of Brunswick, obtained first premium on Devon bull.

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#### COWS.

George F. Fulton of Bowdoin, received first premium on grade Ayrshire cow; four years old; weight, nine hundred and fifty pounds. Deems this breed best for milking purposes, and says they thrive far better on poor pastures than Durhams.

Isaiah Jordan of Brunswick, obtained first and second premiums on two Devon cows, bred by I. Wentworth of Poland. He prefers them to all others for milk and for stock; says these give four gallons per day during June and July and average two gallons per day during the whole time in milk, and of superior quality.

Geo. Skolfield of Brunswick obtained premiums on a cow, heifer and heifer calf—all Devons. Prefers this breed for rapid growth and richness of milk.

On grade Durham cows, J. W. Rackley received first and John Graves the second premium, both of Topsham. Of the last, Mr. G. says she gives twelve quarts on an average and sixteen per day in June and July.

Cyrus Flagg of Topsham, received first premium for a native heifer; three years old; cost to raise, \$30; value, \$75. When a calf, was allowed to suck three days, then had two quarts new milk night and morning, and skimmed milk at noon; by-and-by some scalded meal added until fall; kept first winter on best of hay, and two last on poor swale hay and corn fodder; keeps fat easily, and her milk is rich and abundant.

The first premium on milch cows was awarded to Wesley Patten of Bowdoinham, on a Durham grade cow, eight years old; in July, gave sixteen quarts of strained milk per day and made eighteen and one-half pounds of butter in ten days; in Sept., gave fourteen quarts per day and made fifteen pounds of butter in ten days.

The premium on cows yielding greatest actual profits, was awarded for two, with the following statement:

“The animals on which I ask a premium for the greatest profit, are two cows—native breed—raised by myself; their keeping has been common fare on a farm; ages, eight and nine years. I prefer these for milk and work, as they have performed the work on my farm, in the place of oxen, for the five years last past, and have furnished me with milk for eleven months in the year which is of a good quality. In summer, in the best of feed in June and July, they give about sixteen quarts a day each. I consider the work they do for me in the place of oxen, an improvement, as I do not discover that it injures them for milk or breeding, and they perform the labor equally as well as oxen, and are kind and docile.

THOMAS ALEXANDER of Harpswell.

October 14th, 1857.”

## WORKING OXEN, STEERS AND BEEVES.

These appear to have been exhibited in very considerable numbers; and judging from the reports and statements, of fine quality. These show that they embraced grades of Devon, Hereford and Durham, as well as natives, and most exhibitors expressed strong preference for the grades. Numerous premiums were awarded.

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 SHEEP.

Of these, the Committee say there were eleven entries, and all good animals.

To Stephen P. Wilson of Bowdoin, Robert Tate and Isaac E. Mallet, were awarded premiums on grade Leicesters, which they commend for large size, good mutton, quantity and fair quality of wool, and hardihood.

To John F. Gray of Bowdoinham, and Hiram Henry of Topsham, for grade Cotswolds. "Prefer these for meat rather than wool, though they shear large fleeces, but rather coarse."

To Collamore Mallet of Topsham, for native buck, which he "thinks about as profitable as any in this cold climate."

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 SWINE.

First premium was awarded to Gustavus Smith of Richmond, for best boar, of Newbury White, White Chester, and French extraction; bred by Aaron Hoag of Gardiner. He says that seven of a previous litter, slaughtered at eight months old, weighed two thousand two hundred and eighty-six pounds—that they are remarkably peaceable and quiet, and take on flesh and fat with great rapidity.

To J. E. & H. Dow of Bath, for Suffolk boar.

To Daniel Fuller, for White Chester and French boar.

To J. E. & H. Dow, for best breeding sow, grade Suffolk; also to same, for best litter fourteen pigs, half Suffolk.

To Wesley Patten of Bowdoinham, first premium for grade Suffolk breeding sow.

## POULTRY.

Foster Bradley of Topsham received the first, and Daniel Edgcomb of Lisbon the second premium on turkeys.

F. Bradley received first, and J. H. Melcher second premium on geese.

A. F. Snow of Brunswick received first premium on fowls (Dominique.) Isaiah Jordan of Brunswick received the second.

The first premium on ducks was awarded to G. O. Rogers of Topsham; second, to J. H. Melcher of Topsham.

Mr. Rogers states that one of his old ducks laid one hundred eggs this season; and last year laid more than that number.

## PLOWING MATCH.

The report states this to have been well contested, and the work creditable.

First premium to Dan Fulton of Bowdoinham.

Second do., to Pelatiah H. Thompson.

Third do., to J. P. Tibbetts of Topsham.

And on single teams—first premium to Charles T. Patten of Topsham.

## NAVAL ARCHITECTURE.

This is a somewhat novel feature in the mechanical department of our exhibitions, but it is one eminently worthy of the attention of societies on the shores of this greatest of shipbuilding States.

The first premium on model of a freighting ship was awarded to E. P. Mallet of Bath; second do., to Messrs. Campbell & Curtis of Bath.

Honorable mention is made of a collection of models shown by T. J. Southard of Richmond (not offered for premium); also by Campbell & Curtis and James Pennell.

They commend to the shipbuilding community a steering apparatus invented by Joseph H. Purington.



## FRUITS.

First premium awarded to Abraham Preble of Bowdoinham, for best collection of apples.

Second do., for do., to Nahum Perkins of Topsham.

For best dish, to N. J. Crawford.

For best bushel of apples, to Wm. S. Skolfield.

For best grapes, to E. C. Hyde of Bath.

For second best do., to N. Perkins of Topsham.

## DAIRY.

Mrs. R. P. Fay of Topsham, obtained the first premium on the greatest produce of butter, made within the limits of the Society. Keeps four cows on common pasture; considers high land the best for grazing; churns the cream and strippings together; thinks that churning the cream alone will give more butter, but not so nice; washes and dresses the butter by hand; packs it down without sugar or saltpetre; cows average one hundred pounds per year.

Mrs. Hiram Kendall of Topsham, obtained the first premium on butter made in September; made from cream and strippings churned together; pastures the cows in summer, feeds them on hay and carrots in the winter; prefers carrots to turnips for butter.

## CROPS.

William Alexander of Harpswell, obtained the first premium on a crop of wheat, grown on a loam mixed with small gravel, of a dark color; plowed in April; harrowed twice; land in corn the previous year; seed was soaked in pickle and rolled in lime; seventeen and one-half bushels per acre.

John H. Whitehouse obtained the second premium on a crop of Canada Fyfe wheat; one-half bushel of seed used on one and one-fourth acres; soil a light sandy loam, rather elevated; planted to corn in 1855, when twenty loads of manure were applied before planting; planted to corn in 1856; manured with twelve loads, putting it in the hill; crop, nineteen bushels to the acre.

A. S. Perkins of Topsham, applied for premium on a crop of bald wheat, grown on a dark clay loam, with a stony subsoil, where potatoes were raised the previous year; plowed ten inches deep and applied ten cords of barn and slaughter-house manure to the acre; soaked the seed in beef brine and sowed broadcast two bushels; yield, twenty-three bushels per acre.

Joseph Hall of Bowdoinham, applied for premium on crops grown on one acre and sixty rods.

Expense :		100 bush. ears of corn,	\$50 00
Plowing 10 inches deep,	\$6 00	10 bushels of beans,	20 00
60 loads of manure,	60 00	Pumpkins,	34 00
Working the land,	20 00	Corn fodder,	10 00
Harvesting,	5 00	Betterment of land,	20 00
			<hr/>
			134 00
		Expense,	91 00
	<hr/>		<hr/>
	\$91 00	Profit,	\$43 00

The above was raised on old worn-out land which had been in grass for many years.

James F. Mustard raised corn at the rate of one hundred and eighty-six bushels of ears per acre, on land which was in grass the previous year; plowed in the fall ten inches deep, and applied twelve cords of manure; hoed three times and added three bushels of leached ashes the first of June; cut up the stalks.

C. Flagg of Topsham, obtained the first premium on corn; grew it on a dark colored sandy soil, free from stones; had not been plowed previously for fifteen years; plowed eight inches deep, and sowed the corn in hills three feet apart each way; the seed was early Canada and King Philip, mixed together; land was dressed lightly with horse manure; top stalks cut when the corn was just past the milk; cost of crop, \$40; yield, seventy-five bushels.

James D. Fisher of Bowdoinham, obtained the second premium on corn grown on a gravelly loam with a stony subsoil; the land was planted to corn the previous year; ten loads of barn-yard manure were plowed in, and sixteen loads of manure applied afterwards; the corn was of the King Philip variety, and planted in hills three and a half feet between the rows and two and a half feet between the

hills; harvested by cutting at the root immediately after the corn was glazed; think this is a saving of labor and fodder; one hundred and thirteen bushels of ears, forty-three pounds per bushel; five tons of fodder.

John Clifford of West Bath, obtained the third premium on one hundred and twenty-eight bushels of ears grown on one acre of yellow gravelly soil, on a hard gravelly subsoil; the land was in grass last year; plowed ten inches deep, and manured with ten cords of compost made of muck, rockweed and barnyard manure; the rows were four feet, and the hills three feet apart; hoed twice, and dressed with half a pint of ashes to the hill.

Daniel Edgcomb of Lisbon, obtained the fourth premium on a crop of "improved Canada corn" grown on a light sandy loam; was in corn last year, and was manured with twenty loads of thirty-five bushels each, spread broadcast; plowed ten inches in depth; spread, this year, twenty loads more and plowed in; the seed was soaked in copperas water and dried in plaster; planted on the 22d of May; cut up at the roots; prefers this manner of harvesting; one hundred and thirty-six and a half bushels of ears per acre; cost of crop, \$39.

William Alexander obtained the first premium on a crop of rye, grown on half an acre of land where wheat and potatoes were raised the previous year; manure was then applied, composed of stable manure and seaweed; no manure added the present year; yield at the rate of thirty bushels per acre.

B. M. and E. W. Brown of West Bath, obtained premium on a heap of compost made of four tons of worthless straw and hay, useful for no other purpose, several loads of chaff and other waste substances, worthless except for compost, two cords of rockweed; it was saturated with a lye made as follows: ten bushels of hen manure and night soil, with the water from the barn, and six bushels of dry ashes. "It gives," say they, "fourteen loads of manure, worth \$2 a load, while the expense was \$13.13—thus giving \$14.87 as the price of the hay, &c., which, except the rockweed, could not have been used for anything else. We will here state that we have no crops grown so well as those on this compost. Most of these materials were dry twenty-five days before. We think great ad-

vantage is derived from this process of changing dry substance into rich materials in a few days.”

	<i>Cost.</i>	
Six day's labor, . . . . .		\$7 50
Ashes, . . . . .		75
Oxen one day, . . . . .		1 25
In wetting, half day's work, . . . . .		63
Night soil, . . . . .		2 00
Hen manure, . . . . .		1 00
		<hr/>
		\$13 13

## KENNEBEC COUNTY SOCIETY.

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This Society now embraces two hundred and ninety-six members, thirty-four new ones having been added during the past year. Its Annual Exhibition was held at Readfield Corner, on the 13th, 14th and 15th days of October, 1857.

The Secretary says: "The first and second days the weather was fine, and the exhibition of neat stock was excellent—probably never excelled by any county show in the State. The horse exhibition was good. The show of agricultural implements was very meagre. Exhibition of dairy products was superior to any we have had for many years. In household manufactures, the *ladies* brought forth their handiwork in rich profusion.

On the third day of our exhibition we were visited by a rain storm which prevented many from attending. The consequence was quite a falling off in our funds from what we had anticipated. Rev. C. H. Webster delivered our annual address, which is being published in pamphlet form by the Androscoggin, Franklin Co., and our Society. We have rented fifteen acres of land for ten years, and enclosed it with a good substantial high fence, and have a trotting course half mile in length. There has been built during the year a building expressly for the use of the Society, forty by eighty feet, one and a half stories high, owned by twenty-eight persons who give the use of it to the Society. The apple crop within our limits has been almost an entire failure. Other crops, particularly hay and Indian corn, have been good."

Some of the premiums on stock were awarded as follows:

**COWS AND HEIFERS.** Durham cows, J. Wadsworth, East Livermore, first and second premiums.

Durham heifers, J. Wadsworth, first and second premiums.

Yearling do., do., same.



Herefords, two years old heifers, first, J. H. Underwood, Fayette.

Jersey cows, first, P. H. Holmes, Winthrop.

Yearling heifers, same.

Grade cows, first, R. W. Smart, Vienna; second, O. Billings, Fayette.

Two years old heifers, first, J. H. Underwood; second, Gilman Hawes, Readfield.

Yearling heifers, first, J. R. Marston, Mt. Vernon; second, J. H. Underwood.

Heifer calves, first, George Fifield, Manchester.

The first premium for milch cows was awarded to A. F. Stanley. His statement regarding the cow is as follows:

“My cow was six years old last spring; I bought her the 9th of May, 1856; we have made from her since I owned her, up to the 1st day of October, two hundred and eighty-four pounds of butter, and one hundred and eighty-four pounds of cheese; the butter at twenty cents per pound, worth \$46.80; the cheese at eleven cents per pound, \$20.24; milk sold, \$17.50; milk used in family, \$30; calf sold the spring I bought her, \$1.50; calf which I own now, and for which I was offered \$15 at eight weeks old, \$10; new milk and skimmed milk given to pigs, \$12—making in all, \$138.04.

The greatest quantity of milk given by her any one day, seventeen quarts. I dried her nineteen days before her calving. Sixty days before her calving she gave between six and seven quarts a day; thirty days, between five and six; twenty days, between three and four. When her calf was fifty-eight days old, she had made fifty-eight pounds seven ounces butter, and I gave the calf four quarts a day, new milk, until four weeks old. She made an average of one pound one ounce of butter for every day from the 12th of March, when she calved, up to the 1st of October, deducting forty-two days in July and August, during which time we made ninety pounds of cheese, (one hundred and sixty pounds in one hundred and forty-eight days.) When I tested her milk in April, seven and seven-eighths quarts made a pound of butter; and she made twelve pounds per week.”

A. F. STANLEY.

**BULLS AND BULL CALVES.** Durham bulls, first, J. H. Underwood; second, J. Wadsworth.

Herefords, first, J. H. Underwood.

Devons, first, H. N. Hunt, Readfield.

Jerseys, first, P. H. Holmes, Winthrop.

Grade bulls, first, B. F. Carr, East Winthrop; second, B. Porter, Mt. Vernon.

Yearlings, first, R. W. Smart; second, G. S. Worcester, Mt. Vernon.

Bull calves, first, S. G. Fogg, Readfield; second, O. H. Packard, Manchester.

**SHEEP, SWINE AND POULTRY.** Buck, first, S. H. Richardson.

Ewes, first, Stephen Ladd, Mt. Vernon; second, G. Hawes, Readfield.

Pigs, first, Henry Dudley, Readfield; second, Samuel Jackson, Winthrop.

Boar, first, Oliver Bean, Readfield.

Sow, first, J. O. Craig, Readfield.

Turkeys, first, Benj. Brown, Readfield; second, John Dudley, Readfield.

Hens, S. W. Jennings, North Wayne.

**HORSES.** Stallions, first, E. L. Wells, Mt. Vernon; second, E. Brown, East Livermore; third, N. H. Leadbetter, Winthrop.

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#### FROM THE REPORT ON TOWN TEAMS.

Your Committee entered the field not unmindful of the distinction conferred upon them, and when their eyes swept over those extended lines of the bovine race, arrayed before them,—not in battle, but in peace,—with full liberty to manipulate with their hands their soft and velvet sides, yet had no hope of ever masticating with our jaws their luxurious meat. On such an occasion, who could help feeling patriotic, oxy, and exalted. There they stood, chewing their cuds, with horns erect, sides extended, and taking a sort of noonday siesta, unconscious that the avarice of man would spill their blood. Two hundred oxen spread out before us, to be

passed upon for beauty, size and worth—what a task! and yet our courage did not fail us, for we had read in the Holy Book that, in olden time, individuals kept greater herds, and that Job once possessed five hundred yoke of oxen, and that King Uzziah, in the low country and in the plains, kept much cattle. So we commenced, thinking to make short work by striking along the whole line at once, as did Napoleon at Waterloo; at any rate, we adopted the order of Lord Wellington to his guards—we “up and at ’em.”

At the butt end of a long line, we found a yoke of oxen owned by J. B. Swanton, Esq.; threw a line around them and found that they girthed only seven feet and eight inches—five years old. These were a pair of monarchs that we admired—not of men, but of the rugged hill sides of our State. We passed on, and found that seventeen pairs of this string measured from seven feet to seven feet eight inches, the remainder running down to six feet six inches; numbering in all, nearly one hundred oxen, well shaped, matched and trained. This team, you will not be surprised to learn, belonged to Readfield—a town that, for the last quarter of a century, has seldom been absent from the show, and has become so accustomed to carrying off the prize, that she remains unmoved “when her blushing honors are fast upon her.” By a decisive vote of the Committee, Readfield is to receive the first reward.

We next turned our attention to Fayette, that little town just over yonder, reposing among the hills, and which never dishonors a draft when made upon her for oxen. We hardly know how to speak in her praise, but as good wine needs no cheer, we only point you to her cattle. At the risk of traveling out of our legitimate path and forestalling the chairman on matched oxen, we will just hint that one pair of four years old oxen in this team, owned by W. F. Hilton, stand unequalled—combining discipline, solidity and comparison, girthing seven feet six inches. This town numbered twenty-four pairs, ten of which exceeded in girth any team on the ground; it was only the lack of numbers that threw her behind Readfield. We award her the second premium.

Mt. Vernon presented twenty-two pairs, nine of which girthed seven feet and over. They were hardy, respectable cattle, but nothing in comparison to what the town might have presented. She is entitled to the third premium.

For the want of a team on which to bestow the fourth, we recommend that it be equally divided among the towns which formerly met with us,—Wayne, Winthrop, and East Livermore,—for keeping their noble animals at home.

JOHN MAY, *Chairman.*

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#### FROM THE REPORT ON TOWN STEER TEAMS.

There were thirty-seven pairs of three years old steers entered as teams from different towns, the most of which were well matched, well made up, looking bright and active, bidding fair to make a good show at some future day in the ox line. One pair, owned by John Jacobs of Mt. Vernon, measuring seven feet in girth, well matched, we think must have descended from Jacob's breed, of old, being speckled, grizzled or gray. They were what we call buttenders to any steer team.

Mt. Vernon came forward with thirteen pairs. Your Committee unanimously agreed to award her the first premium for best team. Fayette, twelve pairs, nearly as good as Mt. Vernon, to which we award the second premium. Readfield had some very good steers, twelve pairs, and is entitled to the third premium.

CHARLES KENT, *Chairman.*

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The statements accompanying the prize awards, in some cases, give the pedigrees and the opinion of their owners as to their particular merits, and as the various breeds have been more fully proved within the limits of this Society than in any other in the State, it may be well to add that the weight of testimony seems to be nearly as follows: Jerseys are particularly commended for milk and butter—the milk being richer than that of any other breed; Ayrshires for dairy purposes—giving good milk, and a good quantity,—also serviceable for labor, and are hardy. The Durhams, for docility, size and early maturity, are profitable with suitable care and treatment; and grades are often valuable as dairy cows and laboring oxen. The Herefords prove hardy, docile, of large size, good for labor and beef,

are cheaply kept and profitable—particularly valuable for oxen and beef. The Devons are admired for beautiful color and richness of milk, rather than great quantity of it. They prove very hardy, active and serviceable; are very cheaply and easily kept; make choice beef, and are useful and valuable for the general purposes of our farmers.

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### CROPS.

As the report on crops includes the pith and substance of the statements of competitors, it is given in full, and the statements themselves omitted.

*To the Trustees of Kennebec County Agricultural Society :*

The Committee appointed by you to award the Society's premiums on crops, feel somewhat ashamed to report such a "beggarly account" of awards as the facts in the case compel them to do at the present time. For all the premiums which you offered to encourage competition in the raising of different crops, statements were received from only three individuals, and of course, the competition was narrowed down to a small compass. The crops for which the premiums were asked, were as few as were the competitors, viz:—barley, ruta bagas, and carrots. No entries, or statements, came before us for your premiums on the more important crops of corn, wheat, or rye, &c., &c. What has become of the thrifty and energetic farmers within the jurisdiction of this Society, who were wont to enter the lists in friendly contests for the premiums on these staple crops?

The records of this Society can demonstrate, that in former times its members were not a whit behind the chiefest farmers in the Union, in the amount of crop per acre of these articles, which they could rear and harvest from their farms; and it does not speak well for the reputation of their successors, to find the field abandoned, either from want of abundant harvest, or through apathy in the members.

**BARLEY.** The premiums on barley we award as follows: To S. N. Watson of North Fayette, the first premium; and to William Cochran of Readfield, the second premium.



Mr. Watson raised his crop on a yellow loam, of a medium texture, light and friable, about eighteen or twenty inches in depth, with a hard and gravelly subsoil. It has been under the plow about six years, and had received about five cords of manure per year, for three years previous, and planted to ruta bagas and carrots. It was planted in the spring of 1857, about eight inches in depth, and well harrowed. On the 8th of May, about three bushels of barley, of the six rowed variety, were sown per acre. It was harvested on the 30th of July, when the straw was quite green. From half an acre, twenty bushels were obtained, weighing forty-nine pounds per bushel, and one and a half tons of straw in excellent condition for fodder.

Mr. Cochran grew his crop on ground which was broken up in the spring of 1856, and planted to potatoes, with a light manuring in the hill. After the potatoes were harvested in the fall, the ground was again plowed. In the spring of the present year, (1857,) five cart loads of manure from the barn were hauled on; the ground cross-plowed, harrowed, and sown to barley, of the two rowed variety, on the last day of May. From the half acre he harvested fifteen and a half bushels of good, plump barley.

**CARROTS.** We awarded the first premium on carrots to S. N. Watson of North Fayette, and the second to John B. Stain of Mt. Vernon. Mr. Watson's crop was raised on soil similar to that on which he grew his barley. He dressed it with ten cords to the acre of old barn-yard manure, and the ground well pulverized by the plow and harrow. On the 15th of June, he planted carrots, of the Orange variety, in drills two feet apart and one foot in the drill. They were hoed three times. On the 15th of October he harvested from one-eighth of an acre, ninety-seven bushels.

Mr. Stain states that the ground on which he sowed his carrots was rich by previous culture, was plowed and well pulverized by the plow, and thrown into ridges two feet apart. The carrots were sown on the first of June; the weeds were kept down by the hoe. From one-eighth of an acre he harvested eighty-five bushels of carrots, and ten bushels of mangold wurtzels.

**RUTA BAGAS.** There was but one competitor for the premium on ruta bagas. We award the first premium to S. N. Watson of North

Fayette. This crop was raised on similar soil to that on which he grew his carrots, and was managed very much in the same manner. The variety sown was the purple top, on the 15th of June, hoed three times and harvested on the 30th day of October. From one-eighth of an acre he gathered eighty bushels.

E. HOLMES, *Chairman.*

Winthrop, Dec. 23, 1857.

## NORTH KENNEBEC SOCIETY.

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Of this the Secretary reports as follows :

This Society now embraces two hundred and eighty members. Its annual exhibition was held at Waterville on the 15th, 16th and 17th days of September. The attendance of members and farmers in the vicinity was not so numerous as last year, and consequently receipts less. There was a fine exhibition of horses and colts—the Messenger breed predominating; the high price horses have borne for the last few years, has awakened an increased interest in this department. The show of neat stock, especially of oxen and cows, was remarkably fine, although not quite as numerous as at some former shows. The Durhams are largely in the ascendency and are the most popular breed in this part of the State. There have been in years past some very fine animals of that breed introduced here which has had a very beneficial influence on the stock-growing interest. The Ayrshires and Devons have been tried to some extent, and although the farmers give the Devons credit of being the *most profitable* animals to be kept on the farm, yet they are not large enough to satisfy them. Our farmers want oxen as large as small mountains; and therefore go for the largest without much regard to the cost. The show of agricultural implements was small. Dairy products were poorly represented on account of the warm weather at the time of the show. Winter wheat wherever sown in this vicinity has done well. Spring wheat has been for the last two seasons almost an entire failure, and will not be sown to any extent for years to come. There has been with us a fair crop of corn, full an average; it is, indeed, the safest crop our farmers can raise. There was a good yield of potatoes and root crops, generally. Potatoes rotted badly before harvesting, but since then there has not been much complaint. Ten years ago our farmers did not raise to any extent any root crops beside potatoes. At this time no one thinks he is

entitled to be called a farmer unless he raises some hundred bushels of beets, carrots, turnips, &c. The hay crop has been abundant and was generally well secured. The price is some two to three dollars less per ton than last year, and this will exert a beneficial influence by inducing the farmers to keep more and better animals, and thereby enrich their farms. The high price of stock has taken off a large proportion of the best animals for several years past. The consequence is, there is a scarcity of milch cows, dairy products are high and likely to be so, the hay has been sold from the farms, and new methods have to be resorted to to keep up the fertility of the soil.

The competition for premiums on crops is small, our farmers being slow to move out of the old fashioned way of management, and guessing at the results of all their experiments. They will not be at the trouble to keep account with their crops for the small premiums which our society are able to make.

Our society has got somewhat into debt in purchasing and fitting up their show grounds, and will not for some time be able to offer large premiums.

Our expenses have been some more than formerly—the Trustees having adopted the plan of furnishing dinners for the several Committees on the days of the shows; this gave them much less trouble in filling up the Committees, but was quite an item of expense. I think it a very good plan.

Our show was holden two weeks earlier than usual, the weather was extremely warm, farmers being busy, and the attendance lighter than at any former exhibition, therefore the receipts were less; but I think the interest in agricultural matters decidedly on the increase.

The subjects of draining, mixing of soils, the conversion of the muck of our swamps and low lands into fertilizers, are agitating the minds of our farmers generally; improved implements are sought for; better modes of culture enquired for; and there seems to be an increasing interest in the subject of agriculture generally.

Respectfully yours,

JOSEPH PERCIVAL, *Secretary.*

## STATEMENTS AND SCRAPS GATHERED FROM STATEMENTS.

The oxen which received first premium for "fat and fancy oxen," were grade Durhams. The exhibitor says he prefers these, because the Durham blood gives size, docility and symmetry, and the native blood furnishes activity and hardiness.

Charles Drummond, who obtained premium on grade Durhams for working oxen, says substantially the same, viz: that an infusion of short-horn blood makes oxen of fine form, square and handsome; are more active than pure short-horn, and more quiet, docile and easy to fatten than natives.

Mr. Paine obtained first premium on dairy cow, and the Secretary's notes on the margin of his statement, that though large, it is fully reliable. It is as follows:

WINSLOW, September, 1857.

Native cow, "Fidie," eight years old, owned by B. C. Paine; calved April 27th; raised calf; gave her new milk till June 1st. Had then made thirty-three pounds of butter. Made one hundred and forty-nine pounds of butter in June, July and August; skimmed the night's milk next morning, for calf, till June 20th; used and sold one hundred and eighty-four quarts of milk (milk measure) in June, July and August—(butter weighed, when ready to lay down for winter.) Weight of milk in June, July and August, four thousand sixty-five pounds— $44\frac{17}{32}$  pounds per day. The last ten days in June, made twenty-five pounds of butter from all the milk. Cow kept in small pasture; gave her mowed grass till July 20th, then gave her corn fodder at night—one-twelfth acre in forty days; no meal, grain or roots of any kind.

B. C. PAINE.

The second premium on dairy cows was awarded to Wm. Hodgkins, for a grade Durham, seven years old. Of her, he says:

"She is better adapted for milk and butter than for stock, although her progeny inherit her dairy qualities in a good degree. She has never given a large quantity of milk, but from half her milk in May last, twenty-seven and a half pounds of butter was made; from three-fourths of her milk in June, forty-four pounds was made; and from the whole, except one quart per day used in my family, in July,



fifty and one-fourth pounds, and in August, thirty-nine and three-fourths pounds, and the first ten days of September her milk produced twelve and one-half pounds. My manner of feeding is on grass only, in summer, and hay, with plenty of carrots and beets, in winter; have never fed on grain or meal."

WM. HODGKINS.

Waterville, Sept. 15, 1857.

The first premium on cow, best for all purposes, was awarded to Homer Percival, on a grade Durham, 7 years old, which gave an average of forty-nine pounds milk daily during June and July. Her feed in winter, good hay thrice daily and one-half peck carrots per day.

**SHEEP.** Joseph Percival, (the secretary,) obtained the first premium on long woolled sheep upon a flock of "Leicester ewes and lambs; age varying from six months to three years. I prefer this breed for mutton, which is becoming more and more a choice dish with the epicure; they come earlier to maturity and are of a larger size than any other breed, frequently weighing three hundred pounds when well fattened; bred and raised by myself; gave them good pasturing in summer and hay, straw and roots in winter; their lambs come strong and healthy; frequently have twins. My ewes, eighteen out of thirty, had two, and one three lambs, and they average four pounds well washed wool, and it was sold for thirty-seven one-half cents, while the finer grades of wool was selling for forty to forty-five cents."

**DAIRY.** The first prize on June butter was awarded to Mrs. Warren, of Winslow. Statement as follows:

"Our dairy consists of four cows. I keep my cows in winter on hay and corn meal, and good pasturage in summer; consider high moist land the best for pasturage. We set our milk in cool cellars; always take the cream from the milk before it changes or sours; churn the cream, that being less labor and gives equally as much butter and of as good quality, especially when the cream is taken from the milk before souring; in warm weather we churn every fourth day; in cool weather once a week. We work the butter-milk from the butter without washing; never put water into the

butter. We don't know that we have made any new discoveries in regard to preservation; we always keep ours in a dry cool place and exclude the air entirely from it by putting a bag of fine salt over the jar. We sometimes feed roots to our cows; find it to increase the quantity, but deteriorates the quality, we think."

MRS. AVIS WARREN.

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### CROPS.

INDIAN CORN. The statement of the competitor who obtained the first premium did not come to hand, or has been mislaid.

Clark Drummond, of Winslow, obtained second premium on his crop of one-hundred and seventy-four bushels of ears, (shelled eighty-seven bushels,) grown on an acre of dark yellow, sandy loam, overlying a fine sand sub-soil. The soil contains limestone and slatestones; last year it produced eighty-five bushels of shelled corn; plowed eight inches, and cultivated thoroughly; used seven cords compost, seven-eighths swamp muck put in the hog-pen the year before, in the hills; planted 18th of May; seed, the Dutton corn soaked twenty-four hours in warm water, and rolled in plaster; hills three and one-half feet apart; used horse-hoe twice between the rows, and hand-hoed twice.

B. W. Burbank obtained third premium on crop of one-hundred and sixty-three bushels of ears per acre, of eight and twelve rowed corn; thinks it better to mix the two than to plant separate, and deems it very important to hoe *well* the second time; soil sandy overlying a clay sub-soil, he says:

"I planted one acre and seventy-three rods of land to corn, and harvested two-hundred and thirty-eight bushels of ears. It was pasture land; plowed in September, (1855,) and sowed to winter wheat. It winter killed badly, and a small crop was realized in 1856. In May, 1857, a light dressing of coarse manure was spread on the stubble, then plowed with two horses, about six inches deep, then harrowed and furrowed out. The twelve first rows were manured with hog manure in the hill. Then came a compost of bog muck and slaughter-house manure, in the hill; two parts muck and one part slaughter-house manure, mixed well together. The hog

manure was covered about one inch deep before dropping the corn; the corn was dropped on the muck before covering; the difference between the two was not much in the growth of the corn; if any, it was in favor the muck."

WINTER WHEAT. The first premium was awarded to Sidney Howard, of Winslow. His statement is as follows:

"My soil is a dark colored sandy loam; lies a little inclining to the east, and does not need draining. It is fine, light and friable when dried in the sun; is twelve to fifteen inches deep. The sub-soil is open and porous. I have raised seven crops of winter wheat, and three crops of corn, in the last ten years, from the same acre of land; have manured the corn in the hill with common barn-yard manure. The wheat on which I ask a premium was manured, two-fifths acre with one hundred and fifty pounds of guano, and the remainder with two cords of compost, made of muck and common barn manure—all harrowed in with the sod in the furrows. The first of the season, that manured with compost appeared the best, but at harvest could perceive no difference. The variety is known here as the Banner or Kloss Blue Stem. Sowed broadcast one and a half bushels of seed the last days of August; had no after dressing or previous preparation. Harvested in July immediately after the kernel began to harden. The amount produced was twenty-four bushels plump, handsome, clean wheat, weighing sixty-four pounds per bushel; amount of straw estimated at one ton; whole expense, charging half manure to this crop, was \$21.75; the value of the crop \$65.00—leaving the net profit \$43.25, exclusive of interest on land."

SIDNEY HOWARD.

WINSLOW, December, 1857.

Clark Drummond of Winslow received second premium on twenty-one and one-half bushels of Blue Stem winter wheat, grown on an acre of sandy intervale; planted to corn in 1855, which was manured in the hill; sowed to barley in 1856; stubble plowed in eight inches in August; and sowed one and one-half bushels, broadcast, September 1st, on the furrows, and cultivated it in. On half acre, put one hundred and fifty-eight pounds of guano; on the other half,

fifteen bushels good wood ashes. Could perceive no difference in the yield between the guano and the ashes. Whole expense \$22; value \$54, and straw \$4.

POTATOES. Mr. Drummond also grew one hundred and six bushels seedling potatoes on half an acre of sandy loam, plowed up from grass, with four cords of horse manure and straw, worth \$5, top dressed with five bushels wood ashes, worth \$1; cultivated and hoed once; whole cost \$10; value \$30.

TURNIPS. R. R. Drummond of Winslow, grew at the rate of nine hundred and four bushels of ruta bagas per acre, (two hundred and twenty-six bushels on one-fourth of an acre,) on a fine light soil which was in corn last year, with light dressing; plowed in fall; harrowed in on two-thirds of it a cord of unfermented manure, and fifteen bushels of ashes on the other third; hoed twice, and thinned out. Total cost of crop \$10.35; value, 226 baskets, at 20 cents, \$45.20.

## SOUTH KENNEBEC SOCIETY.

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Of this active and efficient Society the Secretary says :

“It now embraces about three hundred members. Its annual exhibition was held at Gardiner, on the 23d, 24th and 25th days of September, 1857. We have abundant reason to be encouraged to continue our efforts for the benefit of agriculture, horticulture and the mechanic arts. An increased interest is being exerted by the farmers in our vicinity generally, in introducing a better class of farm stock, and the practice of better modes of culture ; greater care in husbanding manures, and more attention to their application to the soil, thereby deriving a greater profit to themselves and conferring a corresponding benefit on the community generally. The mechanics and manufacturers of our neighborhood came forward with samples of their machines and goods, thereby contributing much to the interest of the fair ; adding to their own profits by a more general introduction to the consumers of their various articles.”

JAMES M. CARPENTER, *Secretary.*

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### FROM REPORTS OF COMMITTEES.

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The Committee on Bulls, Heifers and Cows, say :

“There were of bulls thirteen entries. The Committee award to Asa Bartlett of Augusta, the first premium for his Durham bull, a fine animal, (bred by Obadiah Whittier, Vienna.)

Of the grades there were four two years old and upwards. To William Rollins, 2d of Pittston, the first premium for his grade Durham, and to James Capen of Gardiner, the second for his grade Hereford. To Lot Goddard of West Gardiner, first premium for



his one year old grade Devon, and to Gilmore Blin of Dresden, second premium for his grade Durham, one year old.

Of bull calves there were three entries. To Stephen Weston of Litchfield, the Committee award the first premium; to Jno. F. Bragdon of Pittston, second premium; both grade Durhams, the last weighing 585 pounds.

There was a bull on the ground, exhibited by Thomas M'Grath, who, having purchased him while young, did not know his blood. Consequently he was classed native, although Mr. M. calls him English, and says he was imported from Halifax. The Committee were unanimous in the opinion, that he was the best bull on the ground, accordingly we award to him the first premium.

There were of cows and heifers twenty-six entries. The Committee award to Henry Butman of Gardiner, the first premium for his pure Durham cow. Mr. B. gave a good statement of her excellent qualities, among which was her quiet and docile disposition. To Seth G. Moore of Gardiner, the first premium for his grade Durham, giving two hundred and eighty-six pounds milk in one week, and twelve and one-half pounds butter per week in June; and to Daniel Russell of Hallowell, the second premium for his grade Hereford, yielding eight pounds of butter per week for the last nineteen weeks, commencing May 10th, besides furnishing a family of six, with cream and milk. To S. W. Bates of Gardiner, for native cow, first premium, and to William F. Burr, the second premium. To Stephen Weston of Litchfield, the first premium for his grade Ayrshire heifer, one year old, and to D. Russell, the second, average fifteen quarts milk per day in June, July and August; forty-two to forty-seven pounds per day, last week in May; twenty-eight pounds per day now, (20th of September.)

The Committee award to Aaron Hoag of Gardiner, the premium for the three best cows on one farm, and exhibited at the fair.

Thus having closed my report, and as there appears time, I will offer the following:

Of the cows, and the bulls, and the heifers, so rare,  
 That grace with their presence our Annual Fair,  
 In numbers though meagre, in quality fine,  
 Deserve from the muse a favorable line—  
 The pure Durham bull that Asa brought in,  
 Who having no rivals, must certainly win;

And Thomas Magrath, with his stone grey bull,  
 The four dollar prize will easily pull.  
 Of the grades, Mr. Rollin's Durham stands high,  
 Mr. Capen's grade Hereford is also close by,  
 And Lot with his beautiful Devon so red  
 Of the one year old grades must stand at the head ;  
 And Bailey's and Blin's if you're fond of puffing,  
 Will pass in a crowd with a little good stuffing ;  
 And Weston's bull calf looked so noble, I vow,  
 As it stood by the side of that little old cow !  
 But Bragdon and Moore, without any mistake,  
*More brag* for true beauty might honestly make.  
 But the muse cannot stop to mention by name  
 All the cows that now entered the contest for fame,  
 Or refer to their qualities, so rich and so rare,  
 That render them worthy the husbandman's care.  
 But the heifers so pretty are worthy a lay,  
 Those entered by Russell, by Jewett, and Gay,  
 And Weston's neat pair, so equal, so white,  
 You'd think each standing in the other's best light.  
 And now as our labors so nearly are ended,  
 These various items so poorly are blended—  
 Ladies and Gentlemen, here's hoping we all  
 May meet here again in good humor next Fall ;  
 That samples of stock, of every good grade,  
 On every hand may be amply displayed ;  
 That these halls may be filled, in every part,  
 With the products of Labor, of Genius and Art,  
 As in past, so in future may our Fairs still be  
 Right worthy our country—the land of the free.

AARON HOAG, *Chairman.*

Mr. Hoag of Gardiner, states, regarding his three cows, that one is eleven years old, the second four, and the third three years old. The oldest one girths a little over six feet ; the second, of four years, six feet four inches ; the three years old, six feet three inches. These cows are all grade Ayrshires ; considers this breed superior for milk, labor and breeding ; made from the old cow nine pounds of butter per week, during May, on hay alone ; milked at night, skimmed it in the morning for calf, and skimmed morning's milk at night ; and in that manner obtained nine pounds of butter per week. The old cow of eleven years was purchased eight years ago, and since that date has had seven calves, and during all the time has,

with the exception of six weeks, never given less than two or three quarts per day. The one of four years has had two calves, and the third has had one calf, and will have another in January, 1858. These cows of three and four years old, were raised by the present owner. They were taken from the cows at one day old, and fed from the pail on new milk until about two weeks old, then fed upon skimmed milk thickened with meal; "*wcaned*" from this method of taking food at three months, and then fed on hay and grass, with roots in the winter. Considers the Ayrshires very good workers. The oxen usually measure seven feet in girth, and will keep in better condition with harder labor than other breeds, on the same food. The cattle of this breed seem to be more intelligent than other oxen and are "broken in" much easier.

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#### HORSES.

Some of the premiums on horses are to Samuel Whitmore, 2d of Bowdoinham, for the best stallion, a diploma.

To S. C. Harley of Litchfield, for a stallion, a diploma.

Second premium for stallion, to Ivory Wakefield of West Gardiner.

First premium for stallion, three years old, to Mr. Hatten of Litchfield.

Second premium for stallion, three years old, to Isaac Farr of West Gardiner.

A diploma to Samuel Whitmore, 2d, for the best breeding mare.

First premium for breeding mare, to Stephen Lord of Hallowell, Norman French, imported from Havre, France; weight of mare twelve hundred and forty-four—colt, four hundred and six pounds.

Second premium for breeding mare, to J. H. Bragdon of Pittston.

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#### SHEEP.

The Committee on Sheep report:

That only two of the whole number of farmers and graziers within the limits of the Society presented claims for the premiums offered

on this animal so indispensable to the necessities of all civilized communities. We could find an apology for this in the fact of the stormy morning; but on referring to the list of entries we find the name of but one other farmer who had made preparation to contribute to this part of the exhibition.

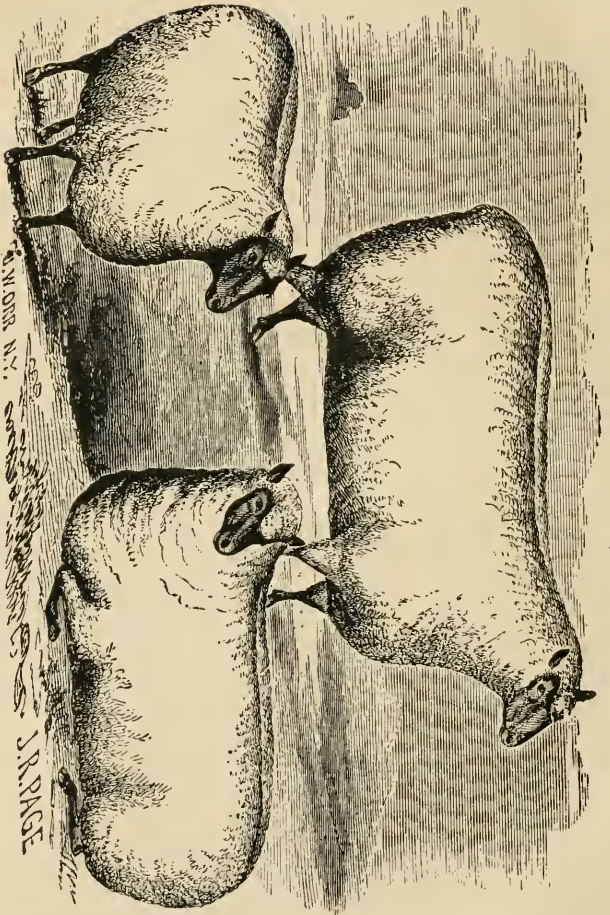
It seems almost an impossibility to account for the apparent want of interest in this branch of husbandry, on any principle, by which intelligent men are usually actuated in the prosecution of their business. This want of interest is not shown, alone, in the business of the exhibitions in this Society, and other societies in this and adjoining counties; but in the actual diminutions of the flocks in the State. It would seem that the sure profits of a good flock of sheep, when well cared for, would be sufficient to overpower the hatred any man could entertain against an animal so useful, innocent and happy; though it should equal that of eccentric John Randolph, when he said he "would go a mile, any time, to kick a sheep."

It may be said without fear of contradiction, that sheep, for a series of years have paid for their food and care better than any other stock.

The few farmers in this section who have had the perseverance to keep "the even tenor of their way," and keep up their flocks through a few years of low prices, have realized as much from their flocks, while the low prices continued, as from other stock requiring the same amount of food and care, and they are now receiving an annual profit, equal to the value of the fleece; the increase in numbers, sold for the meat paying all the cost of keeping. The farmers in Vermont and New Hampshire, who have pursued a straight forward course in sheep keeping, have almost without exception, made themselves independent. They say, and it may be instructive to us, that in seasons of short crops of hay, they can reduce their stock to their fodder without loss, if the stock consists of sheep principally, and that it cannot be done when other stock is kept, to the exclusion of sheep. Some of them, a few years ago, were of opinion, that it cost them but twenty-five cents to raise a lamb, and they were sure of receiving that or more for the pelt, if they were under the necessity of killing in the fall, and giving away, or throwing away the carcass.

Sheep keeping may be prosecuted without the fear of diminution





### THREE SOUTHDOWN EWES,

Bred by Jonas Webb of Babrahans, England. Imported in the year 1856 by J. C. Taylor, Esq. of Holmdel, Monmouth Co., N. J. Winners of the 1st prize at the New Jersey State Agricultural Society's Show in 1857; and also 1st prize at the Monmouth County Show in the same year.





of the demand. "As long as children are born naked," and call for meat as soon as their teeth are cut, will there be a demand for sheep.

We make these remarks in the hope, that if any of the indifference, or neglect, so obvious in this department of farm establishments and agricultural exhibitions, is attributable to a John Randolph feeling, that pecuniary interest will be consulted, and a more kindly feeling cultivated towards the animal to which we are so largely indebted for the real comforts of life, warm clothing, and palatable and nutritious food.

Our active labors on the Committee were shorter than our report is. There was no competition. The sheep presented by Mr. L. Lancaster of Farmingdale, and George Williamson, Esq. of Pittston, came under different entries. No time was required to compare; the only question for our decision was whether to bestow premiums or withhold them, and this was decided in favor of the exhibitors. We accordingly awarded to D. Lancaster premiums on all his entries, viz. :

For Spanish Merinos, first premium on buck; second, do. do.; the premium on six ewes; do. do. six ewe lambs; and on buck lambs; and also on six grade ewe lambs.

To George Williamson, first premium on grade buck; second do. do.; and the premium on grade buck lamb.

Mr. Lancaster's sheep are a choice flock, and it may well be doubted that any flock of equal number within the limits of the Society has given so large an income to the owner for the last five years.

Mr. Williamson's grade bucks are also valuable animals, with large well rounded carcasses, making them valuable for meat; and with merino blood enough to give fair weight and quality to their fleeces.

NATHAN FOSTER.

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#### SWINE.

First premium for best boar, to Aaron Hoag of South Gardiner. Mr. Hoag says of this, that it is a grade Newbury White, crossed with White Chester and French—half Newbury White, one-fourth

White Chester, and one-fourth French. He prefers them for their quiet and gentle disposition, their beautiful symmetry, and uncommon propensity to take on flesh. This cross remains still unequalled in the county or State. Here I renew the challenge made last year, and offer, that if any one will produce a better breed than this cross, combining as many good qualities—to be decided by a Committee consisting of two judges chosen from any county in the State, (except the county in which the parties live,) and they choose the third—I will pay the sum of twenty-five dollars to the Society to which the winner is a member, or in case I win he shall pay the same to the South Kennebec Agricultural Society.

Second premium, on same, to L. G. Hurlburt of Gardiner, on one sired by Mr. Hoag's boar—the mother unknown.

First premium on breeding sow, also to Mr. Hurlburt, on one of Tuscarora breed, of enormous size.

Second premium, to Mr. Hoag, for grade Newbury White, &c. The other premiums were awarded for same breeds.

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### REPORT ON CROPS.

The Committee of the South Kennebec Agricultural Society on Root and Grain Crops, have examined the claims presented, and award as follows, viz :

On wheat, to Gilmore Blin, Dresden, first premium,	\$8 00
“ corn, to J. M. Carpenter, Pittston, first premium,	10 00
“ “ to T. J. Twycross, Dresden, second premium,	8 00
“ “ to David Brown, Richmond, (gratuity,)	5 00
“ potatoes, to T. J. Twycross, first premium,	5 00
“ barley, to J. M. Carpenter, second premium,	4 00
“ oats, to T. J. Twycross, first premium,	5 00
“ beets, to Aaron Hoag, Gardiner, first premium,	4 00

We deem it proper to remark, that there were several entries of claims for premiums on crops, which the claimants failed to substantiate by statements of the mode of culture, amount and cost of crop, &c., as required by the statute. This may be accounted for, in part, at least, by the severe storm on the day of our meeting.

Still we believe there is not that readiness, on the part of cultivators, to avail themselves of the medium afforded by the agricultural societies, to make known the details and results of their experiments in the production of crops, for the benefit of "their craft" and for the public good, which there should be. The right knowledge and practice in cultivation, with the means farmers now possess, would much increase the productions of the State; and, if the term *cultivation*, as used above, may be so extended as to include the preservation and application of manures, it is safe to say, that the whole agricultural production of the State would be doubled upon the acres now under cultivation, in five years; for besides the loss—waste, it may be termed—by shallow plowing, half tilling and "slipshod" cultivation in general, there is an annual loss of more than one-half of the manure made by the stock upon the farms in this State. A few farmers do better; many do much worse than this general average. To remedy these evils, we would urge upon those farmers who, from superior advantages or other causes, occupy the front ranks in the advancing force, to communicate to their fellows in arms, the secrets of their success, by detailing the manœuvres which have led them to it. And further, we will venture so far "out of the record" as to suggest to the Trustees to offer premiums for essays on the best method of preserving the manures made upon the farm—the essays to be detailed descriptions of the fixtures, conveniences and *practice* of the applicants for the premiums.

These remarks have been elicited by general observation—not by any want of knowledge, or skill in practice, discoverable in the statements of the claimants whose comparative merits we have been called upon to decide.

The season taken into account, the amount of the crops for which the premiums were claimed, was very creditable to the competitors. The three corn crops, reckoning Mr. Carpenter's mixed crop at its value, all in corn, average very nearly sixty-five bushels to the acre; good crops for a good season,—and in the opinion of the Committee, near the maximum of what the farmers of New England should aspire to. Manuring to increase the corn crop above sixty or seventy bushels to the acre, (except upon very porous soils, in which the manure is soon lost,) is often attended by the loss of the following grain crop, from "lodging," and often an injury to the following

crops of grass, from the same cause. Could the average be brought up to sixty bushels per acre, it is believed it would nearly double the amount of corn raised in the State, in good seasons. To bring the average per acre to the most profitable point, and to a level near that point, is the object to be aimed at; then, the number of acres may be extended. An increase of crops will give an increase of stock; increase of stock, an increase of manure; an increase of manure, an increase of crops. Repeated *revolutions* of the kind are needed to place Maine as an agricultural State in the position which she is adapted, by her natural advantages, to occupy.

We close our labors and our report, by inviting all competitors in coming time, to be more definite in stating the amount of manure used, than simply to give the number of loads.

NATHAN FOSTER.

Gardiner, Dec. 1, 1857.

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#### FROM STATEMENTS ON CROPS.

WHEAT. Gilmore Blin of Dresden, obtained first premium on wheat, and made the following statement:

Sowed one acre May 1st, on dry rocky land which produced corn the previous year; manured the land for corn by applying thirteen common cart loads (forty bushels per load) of barn-yard manure per acre, in hills. The wheat on this land grew well, but was badly injured by the weevil. Next sowed on the 13th of May, on one and one-half acres wet, stony land, canting to the east. This land was manured for potatoes in 1856, by applying ten cart loads of manure per acre. Next year sowed 26th of May, on three-fourths acre of very wet land, manured in 1856 like the last named piece. The wheat on this piece was much injured by rains and did not grow large, but the kernel was good. Next sowed on 5th of June, on three-fourths acre of wet land, where potatoes and turnips had been produced the previous year; manured then (1856) with twelve loads of barn-yard manure per acre. Put no manure on any of the above mentioned pieces this year, nor was the land ever underdrained. The depth of soil is fourteen inches, with hard, gravelly substratum. The soil is yellow, works light and easily when dry.



There are many stones upon the land, varying in size, and most of them are granite. Plowed eight inches deep this year; harrowed once before and once after sowing, then rolled with large roller. Sowed the seed broadcast, with no previous preparation.

The piece sown May 1st, was harvested August 22d.

“ “ 13th, “ “ 31st.

“ “ 26th, “ September 8th.

“ June 5th, “ “ 17th.

All these four acres were harvested while the kernel was a little soft. Have never known the Java wheat attacked by rust.

*Schedule of Cost and Return.*

Plowing 4 acres, . . . .	\$10 00
Harrowing same twice, . . . .	2 00
Sowing and rolling, . . . .	2 00
Seed, (8 bushels,) at \$3.00, . . . .	24 00
Harvesting, . . . .	10 00
Threshing and winnowing, . . . .	10 00
	<hr/>
Total expense, . . . .	\$58 00
Value of crop, (wheat,) 54 $\frac{3}{4}$ bushels, at \$2.50, . . . .	\$126 87
Straw, 5 tons, at \$3.00, . . . .	15 00
	<hr/>
Value of whole crop, . . . .	141 87
Cost, . . . .	58 00
	<hr/>
Profit, . . . .	\$83 87

INDIAN CORN. *Statement of J. M. Carpenter.*—The crop of corn for which I ask a premium was raised on one acre of land. The soil is a sandy loam. In the spring of 1856, the sod was broken to the depth of eight inches, planted with potatoes, with the application of a small quantity of plaster in the hills. In May, 1857, the ground was plowed eight inches deep, harrowed and furrowed—the rows about three and a half feet apart—and the manure placed about three feet apart in the rows. Six cords of old barn-yard manure were used; and at the time of the first hoeing, six bushels of unleached ashes were put around the corn. It was planted May 19th and 22d. The seed was of the eight, ten and twelve rowed varieties,

with four or five kernels to the hill; and also about six beans, with a pumpkin seed to about one quarter. It was hoed twice without raising the earth much around the hills, having first passed the cultivator between the rows. The stalks were cut the first of September, and the corn was harvested the first of October. We had fifty-six and a half bushels of corn, seven and a half bushels of beans, one and a half cords of pumpkins.

DR.	<i>One acre corn.</i>	CR.
To plowing, harrowing and		By 56½ bush. corn, \$1, \$56 50
furlowing,	\$3 50	“ 7½ bush. beans, \$1½, 11 25
“ hauling manure and		“ 1½ cords pumpkins, 6 00
planting,	4 50	“ fodder, 10 00
“ seed and ashes,	1 50	
“ hoeing first and sec-		
ond time,	5 00	
“ cutting stalks and har-		
vesting,	7 00	
“ six cords manure,	12 00	
	<hr/> \$33 50	
Profit,	50 25	
	<hr/> \$83 75	<hr/> \$83 75

Pittston, November, 1857.

T. J. Twycross of Dresden, obtained second premium on a crop of Indian corn, raised on a clayey loam, which, when dry, is extremely light and friable. The subsoil is about eighteen inches from the surface and is of a clay formation. The soil is light in color and free from stones. Grass had been sown on this land for a few years previous to this crop. The land was plowed about seven inches deep, and four cords of coarse manure from the barn and hog-yard were applied. On the 25th and 26th of May, sowed the piece with common eight to twelve-rowed corn, in hills about three feet each way. From six to eight quarts of seed were applied to the acre—the seed having undergone no previous preparation. The land was cultivated and hoed twice, and just before hoeing, five bushels of leached ashes were applied. On the 1st of October, while the corn was quite hard, the stalks were cut up at the roots and left in the shock three weeks, in the field. The yield of the

piece was one hundred and twenty bushels of ears, making sixty bushels of shelled corn of sixty pounds each. The weight of the stalks must have been about two tons.

<i>Cost.</i>		<i>Return.</i>	
Preparing land and planting,	\$4 00	Value of corn and stalks,	\$73 00
Manure,	6 00	Cost,	18 00
Hoeing, &c.,	4 00		
Ashes,	1 00		
Harvesting,	3 00		
	\$18 00	Profit on one acre,	\$55 00

David Brown of Richmond, applied for premium on Indian corn grown on a red sandy loam which is quite light and fine. The soil is of a reddish color and has not a single stone upon it; the subsoil is eighteen inches below the surface; the previous crop was grass. The land was plowed ten inches deep and twelve loads of manure applied in the hills; on May 25th the seed was sown in hills about three or four feet apart each way; three or four kernels were applied in each hill; the ground was harrowed and hoed twice, with no subsequent application of manure except about six bushels of ashes; on September 10th, the ears were broken off by hand; the yield was about one hundred and twenty-five bushels of ears, at a value of \$62.00. Thinks that the sowing should always be light, and that nothing should be planted with the corn; the grass and weeds should be kept clear in the latter part of the season as well as in the first; the top stalks should be left on until the corn is fully ripe, that the nutriment may all go into the ears—thus the kernel will be several pounds heavier per bushel; three or four stalks in a hill are better than more.

Plowing,	\$2 00	Value of crop,	\$62 00
Harrowing,	1 25	Cost,	16 75
Labor and manure,	4 00		
Hoeing and ashes,	4 50		
Harvesting,	5 00		
	\$16 75	Profit on $\frac{2}{3}$ of an acre,	\$45 25

Messrs. A. & W. True of Litchfield, grew a good crop of corn and applied for a premium, but their statement was received after

the Committee met to make awards. It appears that they raised eighty-seven bushels by measure or ninety by weight, of shelled corn per acre, from a stiff loam, resting on an impervious subsoil, two to two and one-half feet below the surface; in 1855, corn was grown upon it, in 1856 wheat without manuring. Plowed eight inches and applied eight cords barn manure and two cords hog manure, the whole worth \$20; planted 23d and 25th May, King Philip or Brown corn; hills three feet, rows three and one-half feet apart; cultivated and hoed twice, and applied top dressing of lime and ashes after first hoeing; top stalks cut 15th September.

<i>Cost.</i>		<i>Return.</i>	
Plowing \$2, harrowing 1,	\$3 00	Value of corn,	\$90 00
Manure \$20, carting it 6,	26 00	Fodder,	(?)
Furrowing \$1, hoeing 8,	9 00	Manure left in the soil,	(?)
Top dressing,	2 00		
Cutting stalks and har-			
vesting,	12 00		
	<hr/>		
	\$52 00		

POTATOES. T. J. Twycross obtained first premium on a crop of potatoes grown on one acre of a light friable loam of a yellow color. The subsoil is clay and is two feet below the surface of the soil. The ground is free from stone, and produced grass, potatoes and oats, the previous year. Plowed the present season about six inches deep and applied four cords of old manure. The seed was Bearce, seedlings and orange yellow. Each potato was cut into four pieces, planted in hills, three feet between rows and two feet between hills. Twelve bushels of seed were used and no subsequent cultivation except plowed and hoed once. On the 15th of October dug one hundred and fifty bushels, free from rot.

<i>Cost.</i>		<i>Return.</i>	
Plowing,	\$3 00	150 bushels,	112 50
Planting,	1 50		26 50
Manure,	8 00		
Hoeing,	2 00		
Harvesting,	3 00		
Seed,	9 00		
	<hr/>		
	\$26 50	Profit on one acre,	\$86 00

J. Hutchins, for R. H. Gardiner, grew one-hundred and fifty-five bushels potatoes, on a clayey loam, per acre, plowed up from grass, eight inches deep, and adding four cords horse manure; cultivated and hoed twice; at first hoeing gave a handful ashes to each hill; hills three feet apart. (His application was not made in season, and so failed of first premium.)

OATS. Thomas J. Twycross of Dresden, obtained premium on a crop of oats grown on an acre of clay loam, which is light and pliable. The subsoil is eighteen inches below the surface and is of a clayey character. The ground is of light color; is free from stone and produced the previous year corn and potatoes. The soil was plowed to the depth of seven inches, and five bushels of oats were sown; no manure being applied to the land. At the middle of August, when the straw was nearly ripe, the oats were harvested.

<i>Cost of crop.</i>		<i>Value of crop.</i>	
Plowing, &c.,	\$3 50	50 bushels of oats,	\$25 00
Seed,	2 50	1½ ton straw,	10 00
Harvesting,	1 50		<hr/>
Thrashing,	3 50		\$35 00
			11 00
	<hr/>		<hr/>
	\$11 00	Profit,	\$24 00

MANGOLDS. Aaron Hoag of Gardiner, obtained premium on a crop of mangold wurtzel beets, grown on one-fourth acre of clay loam, of which the greater part is light and easily worked. The soil is of a yellow color, and is generally free from stone. The subsoil is clay, and is eighteen inches below the surface of the soil. Corn was raised on the land the previous year. The soil this year was plowed to the depth of seven inches, and harrowed well. About six loads of manure (cords) and seventy-five pounds superphosphate of lime were added. On the first week in June, sowed four pounds of seed, without any previous preparation, in drills, by machine, eighteen inches apart. On the last of October, harvested the crop, which yielded eight hundred and thirty-two bushels, (sixty-five pounds per bushel.) Consider the leaves as fodder, worth half the cost of cultivation. Think this beet is the most profitable crop that can be grown. Boil them, and adding a little meal, mash them up for sheep and swine. At present, feeding four hogs upon them, and never saw hogs do so well.



## FRANKLIN COUNTY SOCIETY.

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The Secretary of this Society makes the following communication :

FARMINGTON FALLS, December, 1857.

DEAR SIR:—I have the honor herewith to transmit to you, all reports, statements, certificates, and other papers, which have come into my hands, together with my annual report. The reports of our Committees are so meagre and imperfect, that they are nearly or quite worthless to the community, and are valuable to the contributor only, as indicating to whom belongs the premiums.

Such reports should be regarded as discreditable to the Committees, as an inexcusable disregard of the great interests of agriculture, which their appointments were designed to promote. In this respect, they have not met the demands of the law. The certificates and statements of contributors and claimants for premiums, were the *merest blanks* in the world, with one or two exceptions. Horace B. Prescott of New Sharon, and Charles K. Adams of Wilton, accompanied their contributions with certificates, according to law. These were the only ones. In most cases, no statements were attached to the articles or animals, nor furnished to the Committees. The controlling desire was, *to get a premium*, no matter how. The great interests of the Society are totally disregarded. There were some fine stallions exhibited for premiums, with no statements, of pedigree, blood, speed, or anything of interest. The Committee on Horses, impressed with their duty, refused to give any premiums, or make any report. Served the contributors right. Dr. Nehemiah H. Clark was chairman of this Committee. He understands his duty, and ought to be at the head of this Committee for life.

There should be a law imposing penalties upon Committees who

fail to make full and complete reports of all "matters and things that may be given them in charge."

Our Society has now voted to permanently locate, and put up suitable fences, yards, stalls and buildings. After these things shall be done, if we do not make a better showing in your reports of the "Transactions of Agricultural Societies," I beg the State will withhold its bounty from the "Franklin County Agricultural Society."

Very respectfully,

Your most ob't serv't,

A. B. FARWELL.

The report referred to above, is as follows :

"This Society now embraces two hundred and thirty-two members. Its annual exhibition was held at Farmington on the 8th and 9th days of October. The exhibition of animals was not equal to last year, owing, probably, to the fact that the show was so far from the centre of the Society. There were presented for premiums, twelve pairs of draft oxen, twelve pairs of beef oxen, twenty pairs of working oxen, and thirty-three pairs in town teams—total oxen, seventy-seven pairs. There were presented for premiums, twenty-six pairs three years old, twelve pairs two years old, and ten pairs one year old—total steers, forty-eight pairs. There were presented for premiums, seven stock, and six milch cows—total cows, thirteen. There were presented for premiums, thirty-three heifers. There were eighteen ewes and six bucks presented, of superior blood, but as no certificate accompanied them, I am unable to give you the true name of any of them, or from whence they were imported. There were no swine presented, as the Trustees did not encourage the *cultivation and propagation of hogs* by offering a premium. There were two graded bulls that were fair, and one full blood Durham, yearling bull, presented by D. Macomber of Wilton, that was very fine. Not much of an exhibition of horses—two "Eaton" and one "Black Hawk" stallions. James F. Butler's "Eaton" stallion is probably as fine a horse as there is in Maine, and as handsome a horse as walks the earth. His stock cannot be too extensively introduced. This Society is most unquestionably exerting a very salutary influence upon the farmer and stock grower of our county, but its influence is not half so beneficial as it would be if it would

cease to *itinerate*, and permanently locate somewhere, that it may fix up its grounds, buildings, &c., *and be somebody*. I am convinced that we can never flourish until our Society is located at some central point. The past season has been unprecedentedly destructive to potatoes and wheat in this county. Corn did well; other crops, fair.”

A. B. FARWELL.

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### REPORT ON CROPS.

The Committee on Crops, having attended to the duty assigned them, report :

Entries for premiums were made as follows :

Hiram Russ,	one acre of oats.
“ “	half “ “
J. M. Mosher,	one “ corn.
“ “	“ “ wheat.
Alvin Moor,	“ “ “
Moses Craig,	“ “ corn.
“ “	half “ potatoes.
Oliver Gould,	one “ corn.
Horace B. Prescott,	“ “ barley.
“ “	“ “ oats.

Horace B. Prescott of New Sharon, is the only person claiming premium who has furnished the Committee with the certificates required by law; and to him we award the first premium on oats—and also on barley.

To those who have made their entries for premiums without the proper accompanying certificates, we award the privilege of trying again.

J. W. DYER, *per order*.

November 25, 1857.

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### FROM STATEMENTS.

H. B. Prescott's crop of barley was twenty-three bushels per acre, grown on a fine and friable loam of dark color; last year broke up the sward; applied ten loads (of forty bushels each) manure,

and planted with corn and potatoes. This year, spread and plowed in twelve loads of new manure; sowed 27th of May two bushels of seed per acre, broadcast; cut 15th of August; damaged by lodging, "perhaps a third"—and he remarks, that barley has yielded less in his neighborhood the present year than usual.

He also grew sixty bushels of oats on an acre of high intervale soil, broken up a year before and planted with corn, applying twenty-five loads of manure. Plowed this year ten inches deep, and harrowed well—applying no manure; sowed 12th of May, three and a half bushels of seed; cut August 22d, when rather more than half turned. The crop was somewhat injured by being lodged.

## NORTH FRANKLIN SOCIETY.

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The Secretary of this Society writes as follows :

“This Society now embraces two hundred and forty members. It has been in operation six years. Its Annual Exhibition was held at Strong, on the 6th and 7th days of October. The show of stock was very large and fine. Of oxen there were about ninety yokes on the ground, and many of them noble animals. The number of colts and horses was large, and many fine specimens were noticed among them. Of sheep the show was good. Much attention has been given to this branch of stock raising by this Society and by individuals in this vicinity, and wool-growing is now considered the most reliable resource of our farmers.

Since the organization of this Society, there has been a very decided improvement in the quality of the stock raised by our farmers. Considerable pains is now taken to procure good animals of neat stock, and of sheep in particular, to produce from, and with good success. On crops, too, we have made decided advance; in a word, every branch of agriculture and many of mechanics, have received benefit from the operations of our Society.”

M. W. DUTTON, *Secretary.*

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### STATEMENTS ON CROPS.

From these it appears that J. F. Whittier grew one hundred and sixty-five baskets of ears of corn on two acres of sandy intervale, without manure; plowed six inches deep; fourteen baskets shelled out nine bushels corn.

Enoch Craig grew fifty-seven bushels of ears of sound corn on one-half acre of moist, rocky, sward land; plowed in May, and having eight loads manure added.



J. N. Hinkley grew fifty-five bushels of ears of good corn, ten bushels of soft, two and one-half bushels of beans and a cord of pumpkins, on half an acre of moist yellowish loam; had been in grass for eight years; seven cords of manure harrowed in, and a half shovel full of fine old manure added to each hill.

E. B. Hunt grew one hundred and twenty-five bushels of ears of Dutton corn on one acre and sixty rods of dry sandy ridge; plowed in fall and cross-plowed in spring; twenty-five loads of green manure plowed in; a shovel full of old manure in each hill; four loads of pumpkins and four bushels of beans also taken from same lot.

R. W. Libby grew one hundred and twenty-five bushels of ears of good corn per acre on a sandy loam; plowed eight inches, turning in ten cords per acre of green manure and using six cords of compost of muck and yard manure in the hills, which were two feet apart and the rows three and one-half feet apart; left four stalks in each hill; cut up at the roots soon after becoming hard, which he deems much the best way; cost of crop, about \$25; value, \$60.

R. W. Libby raised twenty bushels of rye per acre, on a yellowish gravelly loam; plowed in fall of 1855, and sown to oats and peas in 1856; in fall plowed in the stubble and a very light dressing of manure; plowed deep as the plow would go, say nine to ten inches, and sowed rye last of April; cut it last August; cost, \$12; value, \$25.

Timothy F. Perkins says of his rye crop: "The crop of rye which I enter for premium, was raised on pumple stone land. It was planted to potatoes last year, with a shovel full of muck in the hill; the muck was hauled out in June, and mixed with lime before it was used. I sowed about the first of May, five pecks to the acre, and raised sixteen bushels to the acre."

R. S. York raised forty-three bushels, of thirty-five pounds each, of oats per acre, on light soil, lying on a hard and gravelly subsoil; in grass last year; plowed six inches deep; four bushels seed sowed May 10th; expense of crop, \$8; value, at forty cents, \$17.20.

*Statement of Gilbert Voter, 2d.* "The soil on which my barley grew, is a red gravelly sandy loam; coarse, and not very

stony; plowed in the spring of 1856, and planted to potatoes; raised a good crop, depth of plowing, eight inches; amount of manure per acre, eight cords—spread on and plowed in the same spring (1856). Last spring plowed the same ground the 1st of June; sowed the barley 10th of June; sowed five and one-half bushels on one and one-half acre of land; raised fifty-two bushels of good barley.

Expense: Plowing, . . . . .	\$4 00
Mowing, raking and hauling, . . . . .	5 00
Seed, . . . . .	5 50
	<hr/>
	\$14 50

Raised 52 bushels barley, worth 75c. per bushel, \$39 00.

From the land on which my oats grew, I took off two crops of rye, one in 1855 and one in 1856; light top dressing in 1856; plowed last May, eight inches deep; raised on one acre forty bushels of good oats; sowed 16th of May; harvested in September; the soil is as above stated.

Expense: 4 bushels oats, worth 50c. per bushel, . . . . .	\$2 00
Plowing, . . . . . ; . . . . .	2 00
Harvesting, . . . . .	3 00
	<hr/>
	\$7 00

40 bushels of oats, worth 40c. per bushel, . . \$16 00.

Planted my potatoes on one acre of burnt land, the first of June; land burnt in May, 1857; used eight bushels of seed; dug good sized hill, dropped the seed in and covered two inches deep; did not hoe them; harvested in October; red loamy soil, deep and somewhat stony.

Expense: Eight bushels seed, 50c. per bushel, . . . . .	\$4 00
Planting, . . . . .	8 00
Harvesting, . . . . .	6 00
	<hr/>
	\$18 00

Raised 250 bushels, worth 25c. per bushel, . . \$62 50.

Also raised from two and one-half bushels of potatoes—the seedling (so called)—seventy-five bushels.

I had thirteen thousand eight hundred bundles of wheat; threshed out two thousand bundles which measured up sixty-three bushels of good wheat; so it will overrun what I have stated, or certainly hold out good thirty bushels to the thousand; and so there would be four hundred and fourteen bushels. This is as near and as correct as I can state.

I cannot have all my wheat threshed till winter, as my threshing machine is gone from home and will not return till first of January."

G. VOTER, 2D.

Madrid, November 25, 1857.

*Statement of S. Whitney on Ruta Bagas.*

"I raised one hundred and twenty-five bushels of ruta baga turnips on one quarter of an acre of land; said land was broken up and sown with wheat in 1856, the stubble being plowed under in the fall; plowed again in May, 1857, and pulverized well with the harrow; then furrowed with a plow in rows two and a half or three feet apart; then manured with well rotted manure from the yard the whole length of the row, which being covered, the seed was sown thereon in drills, and covered, by drawing a light brush lengthwise; planted the 19th or 20th of June; used horse cultivator between rows, and hoed once. Soil stony and moist.

SEWALL WHITNEY.

Freeman, December 1, 1857.

*Statement of R. W. Libby on Compost.*

"Compost manure No. 1, was prepared as follows, viz: by mixing swamp muck, yard manure and leached ashes together; amount, ten cords; had about two cords of leached ashes dropped in a pile—then hauled my muck, about five cords, and manure, about three cords, and mixed with my ashes; this was done in June; and in September I had it all spaded over, and it was well pulverized and rotten; cost about \$10, or \$1 per cord.

Compost heap No. 2, was prepared as follows: I hauled to my hog-yard occasionally through the summer, seed hay, straw and swamp muck, and poured on our soap suds and the suds and slops from the sink, all passed to the yard by a gutter, which kept it moist; and this compost heap was handled over quite frequently

during the summer, by my hogs, which proves the old adage to be false, that a hog is good for nothing but to eat and sleep; the way I managed to get them to work was to pay them for it; I frequently would take a crowbar and make holes in the compost and put in corn, and then let them "root hog or die"; I made in this way about five cords of excellent manure at a small expense, and think it much better than to throw the slops and suds into the door-yard and street."

R. W. LIBBY.

*Statements on Planting Shade Trees.*

"I have transplanted, the past season, one-hundred and forty-nine shade trees, of fifteen different varieties, one-hundred and twenty-seven of which are now alive and doing well. The trees varied from one to six inches in diameter. Of those I lost, all but two were small evergreens and planted with but little care. In selecting trees to transplant, I take those that have short bodies and growing in open land, without any regard to the kind of soil. When I dig up the tree I am very careful to cut around at some distance from the trunk and to keep as much of the soil on the roots as possible; also to handle careful and avoid bruising as much as possible. Before planting, I trim the tops close, but do not the body. I dig the holes to set in very large, and fill around the roots with soil well pulverized and wet thoroughly when working it in among the roots—being very careful to have them in the same position as that in which they originally grew."

SEWARD DILL.

Phillips, October 6th, 1857.

*Statement on Shade Trees, &c.*

"My manner of taking up and setting out: First, mark the tree, that it may be set the same way to the sun that it grew; second, cut around the tree with an axe at a proper distance from the tree, being careful to keep all the soil on to prevent the roots from drying up, &c.; and before setting out, be careful to cut all the roots up instead of down, as is the usual way of trimming; cut the top to compare with the bottom, leaving the stump some ten feet; dig the hole large over and be careful not to set too deep. Maples should

be planted as near the top of the ground as may be; soil should be dry and warm; be careful to mix the soil with the small roots, fibres, &c. This last spring I set out eighty-nine maples and all of them lived and did well; one elm, one mountain ash and thirteen evergreens, such as spruce, hemlock and fir, of which eight lived. One-hundred and four trees set, and ninety-nine alive, October 6, 1857.

The above mode of transplanting I observed in setting out sixty maples and two mountain ash, this last spring. Lost but two maples and one ash, leaving fifty-nine trees alive, October 6, 1857."

JOHN R. TRUE.

Freeman, October 6th, 1857.



## SOMERSET CENTRAL SOCIETY.

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This Society, incorporated in 1838, slumbered for several years, but has awaked to increased activity, having, during the past year, offered a liberal list of premiums, enclosed grounds, and in other ways prepared itself for increased usefulness. The returns are not such as to afford much material for publication. The Secretary says : " This being our first Exhibition for some years, we labored under many disadvantages. Still we were enabled to get up a good show both as to quality and quantity of stock, including both cattle and horses. There were also many excellent specimens of sheep and swine. The action of our Society is already apparent in the spirit of emulation among our farmers to improve their stock and modes of cultivation. The statements and reports herewith sent are meagre in the extreme, but we hope in this, and also in other respects to improve greatly hereafter. There were liberal premiums offered for crops and general farm management, but they were not competed for. We think they will be another year."

## WEST SOMERSET SOCIETY.

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This Society held its Annual Exhibition at Madison Bridge, 7th and 8th of October. The Show seems to have been a good one, and the Society appears to be active and useful in its sphere; but the returns afford slight material for publication. Our most definite and interesting information regarding it is embraced in the following communication from the Secretary:

“Of neat stock, two hundred and twenty-nine head were entered for premium, mostly of Durham grade cattle. Several good lots of sheep were entered—embracing fifty or sixty head of French and Spanish Merino, of excellent quality; also, grades of these with our native breeds.”

## NORTH SOMERSET SOCIETY.

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This is one of the most recently formed of our Agricultural Societies, having been incorporated in 1856. From the statements which were returned, it would appear that the larger part of the neat stock were grade Durhams; in fact, *no others* are alluded to in any statements received. These, by some, are preferred for beef and for docility; by others they are stated to be hardier and better adapted to our climate than others; but these latter do not say better than *what others*, and it is not easy to determine what their standard of comparison is for admitting the excellence of the Durhams, (or, more properly, Short Horns,) for docility and for early maturity in a climate and with treatment adapted to them, the almost universal testimony of all in our State, who have proved other breeds, goes to show that Devons, Herefords, Ayrshires, and some others, are hardier, better adapted to our rigorous winters and more easily and cheaply kept than Durhams, and thus, on the whole, decidedly preferable, while at the same time it is equally true that a cross of the Short Horn upon our native stock gives a decided advance in many respects.

From the statements on crops we gather the following :

J. S. McIntire raised two hundred and seventeen bushels of "long red peach blow" potatoes, on one acre of light loam about two feet in depth. Land was in grass the previous year. Plowed ten inches deep, and applied fifteen loads of green manure, worth \$1 per load. Used fourteen bushels of seed per acre.

John Grey of Embden, raised one hundred and fifty bushels of potatoes on one acre of light sandy land.

J. L. McIntire raised fifty-eight bushels of oats on one acre of light sandy loam. Plowed ten inches deep; and seven bushels of seed used per acre. Also, eleven bushels of peas on half an acre.

Ansel Holway raised forty-two bushels of English oats on one acre of land which was in grass last year. Plowed ten inches deep, and used three and a half bushels of seed.

H. McIntire raised forty bushels of oats on one acre of yellow loam; plowed eight inches deep, and used six bushels of seed; land in potatoes last year.

Allen Heald raised twenty-five bushels of blood beets on five square rods. Raised on one-fourth of an acre, one hundred bushels of ruta bagas. Soil, a light sandy loam.

Ansel Holway raised one hundred and eight bushels of turnips on one-fourth of an acre of gravelly soil.

Eastman Hawthorne raised twenty-nine bushels of two-rowed barley on one acre of light yellow loam, two feet deep; broken up the previous year, and no manure applied; sowed two bushels of seed per acre.

Ansel Holway applied for premium on twenty-six and one-half bushels of bald wheat, raised on one acre of yellow loam, which was in corn last year. Sowed one and a half bushels of seed on the 27th of May, and harvested on the 1st of September.

Zenas F. Hawthorne raised seventeen and one-half bushels of spring wheat on one acre of light yellow loam. The land was in oats the last year. Applied eight cart-loads of manure before plowing, and ten loads of compost manure was placed in the hill. Sowed the 25th of May, and harvested on the 1st of September.

H. McIntire raised one hundred and seventy-five bushels of ears of Indian corn on one acre of yellow loam, in grass the year before. Plowed eight inches deep, and applied fifteen loads of barn-yard manure, and also hog manure, in the hill. Cut up the stalks at the roots.

J. L. McIntire applied for premium on the greatest variety of crops raised on one-fourth of an acre. Raised twenty bushels of carrots, nine bushels of beets, ten bushels of onions, seventy heads of cabbages, twelve bushels of turnips, one bushel of top onion seed, fourteen bushels of potatoes, thirty bushels of ears of corn, one pound of carrot seed, one pound of beet seed, one bed of cucumbers, sage bed and flower bed, and other fixings natural to a garden.

## EAST SOMERSET SOCIETY.

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This Society held its Annual Exhibition at Hartland, on the 14th and 15th days of October, 1857.

The Secretary says: "The exhibition of stock was larger than usual, and the members of the Society, as well as the community generally, manifested more than their usual degree of interest. Under the fostering care of the Society the breeds of animals have been improved, and live stock generally, has been bred and reared with more care and attention. The soil is better cultivated and yields a more abundant harvest. The adaptation of the various crops and fertilizers to the different kinds of soil is better understood, and a higher state of general agricultural intelligence is apparent under the influence of the Society. The exhibition of manufactured articles, although not large, was yet very respectable, and reflected much credit upon the ladies, who were present to aid and encourage us. The dairy products exhibited, were large and of an excellent quality, fully equal, it is believed, to any of the kind offered for premiums in the State. On the whole, we are encouraged, and are now making arrangements for a much more extended sphere of operation."

WM. FOLSOM, *Secretary.*

The reports of Committees and statements of competitors on neat stock, seem to bear out fully the remarks of the Secretary as to improvement, all the premiums on bulls being given either to Herefords or Devons, both of which breeds are described by the exhibitors as being hardy, docile, and good for all purposes to the Maine farmer. Many of the oxen seem to be partly of Durham blood. Of horses, the "Black Hawk," "Tiger," "Prince Albert" and "Morgan," are specially commended in the statements of different competitors.



Of sheep, the fine woolled varieties seem to be in greatest favor. Ellis Fish of St. Albans, who exhibited a flock, says: "I prefer fine wool because I can grow it cheaper, pound per pound, than coarse wool; it costs less hay and grass than coarse, and brings more money when sold. I keep my sheep on straw in winter; in March commence giving hay, and in April feed out some provender; have the lambs drop in May."

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#### STATEMENTS ON CROPS.

**INDIAN CORN.** Phillip Hubbard of Hartland, obtained first premium on corn, grown on one acre of mowing land from which eight crops of hay had been taken; broken in fall previous ten inches deep; in spring cultivated with an ox cultivator, five to seven inches deep; manured with nine cords old compost and three bushels of plaster, put in the hills; soil a slaty loam; hills four by three and one-half feet; hoed twice; at first hoeing applied fifteen bushels of ashes. Yield of the acre, one hundred and twenty-eight bushels of sound ears of corn, eleven bushels of inferior corn, seven bushels of beans, and five cart loads of pumpkins.

Seth Webb of St. Albans, obtained second premium on corn grown on one acre of clayey loam, broken in fall; fifteen cords of stable manure, plowed in, and twelve cords used in the hill. Crop, one hundred and twenty-six bushels of ears. No other particulars stated.

Calvin Blake obtained third premium on one hundred and twenty-five bushels of ears of corn, weighing forty-three pounds per bushel, grown on one acre of yellowish gravelly soil, two feet deep; plowed ten inches; twelve loads of green manure, turned under, and eight loads old manure spread and cultivated in; twelve bushels of ashes and four of plaster used as top-dressing after planting; planted 20th May; harvested last of September, cut up at the roots. Expense, fifty-five dollars; estimated value, one hundred and twenty-five dollars.

J. P. Roberts obtained fourth premium on one hundred and twenty-four bushels of ears. He says, "ground plowed in the spring, green manure on a part, all manured in the hill." No other items stated.

**WHEAT.** Phillip Hubbard obtained first premium on twenty-two and one-half bushels of Scotch Fife wheat, grown on an acre of slaty loam; previous condition good, having been in corn last year; sowed one and one-half bushels of seed, June 1st; plowed four days before planting, then harrowed well. After sowing harrowed again and rolled it thoroughly.

William M. Palmer of Palmyra, obtained second premium on nineteen bushels, grown on land in corn last year, with four loads of new manure applied last spring.

Warren Fuller grew twelve and three-fourths bushels per acre on slaty soil, in corn and potatoes last year.

**BARLEY.** Phillip Hubbard grew twenty-seven and one-half bushels barley on one acre of slaty soil, in fair condition, having been in potatoes the previous year, and in spring, before sowing in May, had twenty-one loads of manure plowed in.

**BEETS.** W. W. Watson grew forty bushels "sweet blood beets," on one-sixteenth of an acre; soil, slaty loam; two loads of manure applied.

**CARROTS.** William M. Palmer of Palmyra, obtained first premium on best crop, grown on one-sixteenth of an acre, viz.: ninety-seven bushels; soil, hard and stony; bore carrots last year, also; the present year applied four loads old yard manure.

J. P. Roberts, second premium on seventy bushels on one-sixteenth of an acre; "ground prepared by spreading the manure and plowing in." Kind of soil and kind and amount of manure not given, nor any other particulars.

Ephraim Bachelder grew fifty-five bushels on one-sixteenth of an acre, on old garden soil.

James Fuller of Hartland, grew one hundred and thirteen bushels on one-eighth of an acre, in corn last year; eight loads manure applied in May; plowed eight inches deep; sowed 29th May four ounces of seed in drills, eighteen inches asunder; kept well cleaned and dug November 3d.

Estimated cost for labor,	.	.	.	.	\$6 50
"    "    Manure,	.	.	.	.	6 00
					<hr/>
					\$12 50
Estimated <i>value</i> of 113 bushels, 2s.	.	.	.	.	\$37 67

If the soil of Somerset produces carrots at so good a profit as appears from the above, it is respectfully suggested whether it might not be better to offer premiums in future for the best crop on an acre, or certainly not less than half an acre, rather than on a sixteenth. How can farmers otherwise obtain from their soil an equivalent for eight hundred to fifteen hundred bushels of carrots per acre?

**POTATOES.** First premium awarded to F. R. Dinsmore of Hartland, on "one-half acre worn out mowing, half of it planted to potatoes, the year before; the other half yarded with five head of cattle, three months; five loads dressing put on old part, thirteen bushels seed used; planted 20th May; soil dark, rocky loam; close rocky subsoil; hoed twice; dug in October; yield, one hundred and six bushels."

J. P. Roberts obtained second premium on one hundred bushels, on one-half acre; "sound and did not rot; manured in hill;" no other items stated.

Phillip Hubbard, third premium for two hundred and seventy-five bushels on one acre and a half of old poor sward land, plowed in November last; planted twenty-five bushels seed May 11th; hoed once; no manure except a little plaster in the hills; crop free from rot.

Seth Webb, fourth premium on one-half acre, yielding eighty-seven bushels, planted 8th May, on clayey loam; used one-half bushel of plaster.

**RUTABAGAS.** Ellis Fisk of St. Albans, obtained premium on English turnips, grown on a yellowish gravelly soil; plowed eight inches deep and manured at the rate of six cords of barn yard manure per acre; sown broadcast the last of July; crop, fifty bushels on one-sixteenth of an acre.

Thomas Fuller obtained premium on one hundred and ten bushels of rutabagas grown on one-eighth of an acre of old mowing land, broken the middle of May and manured with four loads green manure; sown June 1st, in rows two feet asunder; thinned and hoed twice.

W. W. Watson grew rutabagas on a slaty loam, at the rate of five hundred and sixty bushels per acre; land manured at the rate of thirty loads per acre.

A. Stinchfield obtained fourth premium on same, grown at the rate of five hundred bushels per acre; character of soil and treatment not given.

ONIONS. F. R. Dinsmore obtained first premium on onions, grown on a dark colored rocky soil which produced potatoes last year; sowed May 1st; crop, seven bushels to the square rod.

J. P. Roberts, second premium on six bushels per square rod; says, "planted on the old piece; spread the manure and watered with a preparation of hen manure;" amount of manure and mode of preparation not stated.

Ellis Fisk, third premium on three bushels per square rod.

# PISCATAQUIS CENTRAL SOCIETY.

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This Society held its Show and Fair at Dover, 7th and 8th of October, 1857, which was successful and satisfactory. An address was delivered by Rev. Mr. OSGOOD, as follows :

## AN ADDRESS

Delivered before the Piscataquis Central Agricultural and Horticultural Society, at Dover, October 7th, 1857, by Rev. H. P. OSGOOD.

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*Gentlemen* :—There have been expended much pompous rhetoric and empty declamation laudatory of *labor*, by persons, possessing little sympathy with the industrial pursuits they have professed to honor, and whose apparent interest has often been elicited by a prudent deference to personal aggrandizement.

You are assembled here for the worthy purpose of showing your appreciation of labor, and expressing your regard for some of the important interests of life. You are not enacting the part of demagogues, seeking by fawning sycophancy and fulsome adulation, popular applause; nor do your support, your position in society, your weight of character, and influence, depend upon popular caprice, or arise from any adventitious circumstances, factitious distinctions, conventional rules, or any ephemeral conditions and relations. You are connected with, and seek to promote, some of the staple and fundamental interests of the world; and by the steady pursuit of a laborious, but honorable calling, contributing to human happiness, and the permanency and prosperity of society. The great interests you represent are founded in nature, based upon eternal principles, and cannot be materially affected by political changes, commercial revulsions, and social revolutions; but amid all vicissitudes and conflicts must abide unshaken, and are therefore eminently



safe to be trusted, and highly worthy to be industriously and intelligently pursued. In furtherance of these interests by an intelligent application of labor thereto, you are united in an associational capacity; and in societary relations you seek to stimulate enterprise in the development of your resources, and, by laudable emulation, to enhance the common fund of knowledge.

Experience shows that all great interests, while fostered by individual enterprise, and often in the privacy of retirement, are best represented to the world by means of associated effort, and by a free interchange of individual views, contributing the results of isolated labor and experience to the general stock of intelligence.

It is not strange that, while all other interests have found so useful auxiliaries in social combinations and societary arrangements, and seek expression and efficiency in clubs, meetings and assemblies, this staple interest of the world should endeavor to profit by agencies of so well established utility.

Gentlemen, I am present, by invitation, to address you upon the great interest of labor, and especially that department of labor with which you are more intimately connected. You may demand to know by what service I have earned my title to expound a subject of this magnitude, and wherein to discriminate between my professions in its behalf and those of the demagogue to whom I adverted in the outset. I claim no peculiar qualifications for this task, and I confess it is with extreme diffidence that I have consented to address you upon a subject to which some one of your own profession (for your pursuit is eminently entitled to the distinction of a profession) is far more adequate to do justice. But I represent a working profession, and have known from my youth up what the word labor means; and though my habits of life, professional interests, associations in society, and ordinary standards of comparison, may have slightly differed from your own; yet I confess to an interest, constantly increasing, in yours as a specific pursuit. And having for years, in my pastoral intercourse, and in my travels in almost every section of the state, been on terms of intimate social relationship with farmers, and the recipient of their bounteous hospitality and social cheer, I feel at home in their presence, and I invite you to come into "a warm, good natured, country kitchen fireside relation" with me, and permit me to speak my mind freely

in such language as I can readily command, upon such topics as I may, from my point of observation think worthy to select from the broad field into which I am invited.

But allow me to say, that in my remarks I shall be more general than specific, and may say less that is suggested by a consideration of the particular department of labor in which you are interested, than of labor as a common duty and common interest. What I say under this latter specification, may be comprised within a term which, from my professional habits of thought is readily suggested, and which I will designate, *THE GOSPEL OF LABOR*.

A preacher of righteousness of old very pertinently said, "In all labor there is profit." In that word labor dwells in secret sanctity the explanation of the manner in which the universe was reared, heaven's dome lit up with an infinitude of suns and worlds, the fabric of creation endowed with those unceasing activities by which countless globes retain their allotted spheres, roll on in their bounden duty of harmony and order, and our earth is peopled with myriad existences, and teems with life and animated being. That is the secret of the mighty revolutions, evinced by geological developments, that have been silently but irresistibly wrought in the earth, since first the voice of omnific energy called it from chaos, moulded it into shape and beauty, and bade it go its ceaseless round. Who, indeed, can conceive the labor requisite to unfold this vast expanse, the energy exerted in upholding worlds and systems in their appropriate orbits, and enforcing upon every particle of matter throughout the limitless range of the universe, obedience to the omnipresent will? When Solomon has declared, "All things are full of labor; man cannot utter it," we may well despair of attaining, with our present limited capacities, an adequate conception of it.

Labor is a word familiar to prophets, and wise men and dignitaries of old, however disagreeable it may sound to ears polite, and be contemptuously spurned as unnecessary to our modern vocabulary. And one of the wisest of them all, who declared that in all labor there is profit, said, "Seest thou a man diligent in his business, he shall stand before kings; he shall not stand before mean men."

I speak now of bodily labor. It is conducive to health. Indolence is the exuberant source of many real and imaginary diseases; and none enjoy better health than they who are earnestly engaged

in moderate labor. The physical powers acquire strength and facility of action and adaptation by exercise. The limbs of the body have been forcibly compared to the hinges of a door; if they are used constantly they will move easy, but if allowed to remain unemployed they will contract a rust and at length become useless.

It is conducive to wealth. Labor is the best foundation of property. Agriculture and manufactures demand the labor of the hands as well as the contrivance of the head; and most of our opulent citizens have risen to independence by beginning with manual labor and careful savings.

Corporal labor is conducive to cheerfulness of mind. Good spirits are the usual concomitants of good health; and good health is not to be insured without necessary exercise.

It is conducive to reputation. Indolence enervates the mind, and exposes the slothful man to contempt; while industry is always held in honor by the wise and good.

Labor is conducive to good morals. The ancients represented labor as a guardian of the temple of virtue. Nothing is more injurious to moral principle than indolence, especially in the young whose minds are flexible and whose moral habits are not firmly fixed. For a young man to be idle and at the same time virtuous, is a moral impossibility. No excellence of education, no truth of principle, no force of habit, can stand against the seductions of ease, the temptations of indolence. But if young persons are fully employed in occupations that are useful and honorable, and which engage their whole time and attention, habits of virtue, industry and peace, will be gradually and insensibly formed—or if they are already begun, they will be improved, confirmed, and riveted for life.

“In the sweat of thy brow shalt thou eat bread,” is no curse upon man in general, as human nature is at present situated. There is a labor which grinds, oppresses and overwhelms. But such labor is not generally necessary in that wise economy which enjoins healthful activity and well-directed energies upon all, and in which every one is culpable who shirks his duties and responsibilities, and must inevitably reap, sooner or later, the just retribution of his indolence.

In general, the virtue of character is proportioned to its activity and unremitting industry in some honorable and useful employment. Some men are ashamed to labor; such men ought to be ashamed to

breathe. It is not our employment, but the fidelity, zeal and perseverance we bring to it, which is the subject of praise or censure.

“Honor and shame from no conditions rise,  
Act well your part, there all the honor lies.”

Honesty and fidelity, capacity and efficiency, dignify the humblest station, and success in labor is certain if it is pursued with alacrity and temperance; while prodigality and intemperance degrade the noblest station, and are the harbinger of failure in any undertaking.

Mental labor is no less profitable than physical labor; indeed, it must precede it as a safe guide, or go hand in hand with it, in order to such an intelligent and practical application of the latter as shall be efficient in worthy results, and elevate it above brute force, or the operation of blind working automata, to the dignity of an intellectual pursuit. The ignorant who have become rich, sometimes look with contempt on men of reading and science, deeming no employment useful which is not directly conducive to wealth. But the industrious student, who treasures up principles of practical wisdom, may be the most valuable member of society.

Mental labor enriches the understanding with valuable *knowledge*. Nature has so set in motion our desire of knowledge that it stimulates us to inquiry, and arouses our mental powers into activity, as hunger urges us to seek food. The world of cause and effect around us, is a constant incentive to intellectual effort; and whoever allows himself to become indifferent to the appeals of nature, and neglects the vast sources of wisdom that lie constantly about us,—an inspiration and perpetual delight,—sadly perverts his intellectual powers, dwarfs his mental capacities, and reaps corruption, inanity and death, as the reward of his stupid inactivity and stolid indolence.

The various branches of science and literature are the means of gratifying this mental appetite. By proper study, the inquirer becomes acquainted with the phenomena of the natural world, their existence, properties and designs. He scans the inanimate, vegetable, animal and rational creations, tracing effects to their causes, and making the improvements of all ages add to the progress of the present. While he knows there is a labor that is little better than laborious idleness, he intends that his mind shall be furnished with rich and practical knowledge.

Mental labor enlarges the comprehension of the mind. The



senses, the judgment, the imagination, the memory, the power of combining and discriminating, all improve by judicious exercise. A rich store of useful ideas results from intellectual activity, as certainly as affluence follows skillful industry. Comprehension of mind connected with disciplined powers of generalization, enables us to take the best advantage of the complicated events of life. It spreads out existence over previous ages, and by careful discrimination and correct analysis, we may cull from the immense wealth of the past to enrich the present, and to store the future with the treasured opulence of all generations.

Intellectual labor leads to useful discoveries. It has been observed to the credit of agricultural industry, that the king is served by the field. It is equally true that the artist, manufacturer and merchant are served by the philosopher. Science gives birth to art. The acting members of the community have been compared to the hands; the thinking and inquisitive, to the head by which the hands are unconsciously governed; and neither can say to the other I have no need of thee. With more propriety, however, may it be asserted that the active and thinking members are joint members of the same body, and should be allowed their due exercise, and be well developed to practical uses, in each individual, in order to perfect manhood and womanhood, and to the elevation and perfection of human society. "It is the mind that makes the body rich;" the intellect that dignifies, and gives practicality and efficiency to physical effort; and very pertinently may be quoted the words of Solomon, whose precepts are rich in practical directions adapted to ennoble labor: "Lay fast hold of instruction; keep her, for she is thy life."

Mental and physical labor are intimately co-related and must co-exist in every well developed and symmetrical human being.

Nature, throughout her departments, is eminently suggestive of the necessity of industry. All her utterances are of persevering, useful activity. She is no idler. She never stagnates; never loiters on her way. In simplicity and purity, she fulfills her destiny. Uttering no voices of fear or doubt, musical with praise, she discharges her present, active duties in passive obedience to the Infinite behest. Her agencies never slumber nor sleep; her forces never rest.

What does all this useful activity in all the works of nature mean? Does it not utter the voice of rebuke and condemnation to the idler?



Does it not censure fashionable folly and selfish indulgence? The man who opens his sensuous eyes on this magnificent habitation, in which he is lord over all and discovers no duties calling on him to be discharged, must be stupid, indeed. The idle man, violating that eternal law of God that demands labor as a recompense for the boon of existence, disqualifies himself for the highest and best enjoyments of his being. The active laborer only knows what real enjoyment is; and experiences the rest and refreshment—that true repose, that come of harmony with nature and God,

“Weariness

Can snore upon the flint, when restive sloth  
Finds the down pillow hard.”

I know it is not fashionable in these days to regard labor as an indispensable requisite to all true enjoyment. Those who obtain wealth by reckless adventure, financial legerdemain, political chicanery, or the various corrupt and fraudulent measures by which avarice seeks to arise to opulence; and spend it in riotous living, and selfish extravagance and folly, have introduced new and unchristian ideas in regard to labor; have established a new code of ethics concerning the principles by which man should be controlled in his relations to his fellow man. Justice weeps over the aggressions of pampered might and desolation treads hard upon the heels of oppression. God's law, written in the nature and constitution of man, as well as in the sacred code, is, “In the sweat of thy brow shalt thou eat bread,” and whoever eats the bread of idleness, extortion or oppression, cannot feast his soul upon the bread of life. The shortsighted views of ignorant and perverted man can never change the eternal truths of God, and every step that mortals take in contravention of those laws of Divine ordaining, will trench just so far upon their highest welfare, and incur the righteous retributions of heaven.

Useful labor is the great hymn of praise, continually arising from all creatures and things. It is the great, divine worship ascending up from all the active, useful instrumentalities in the universe. And shall man alone refuse to join in it? Shall he alone make a discordant note? It is by trial, effort and struggle, that man progresses both naturally and spiritually. Bodily labor and mental exercise are the very life of his being—the very steps in the ladder

by which it is wisely ordained that he shall make his ascent toward heaven, that kingdom of useful activities. Let him then stand boldly and bravely up to his duties. He who will not labor in some useful employment, is a traitor to God and man and has no right on this earth.

Idleness, fashion, extravagance, dissipation—are they not crimes against the Most High? And will not the Righteous Judge of all earth deal with this criminality as he always has done in past ages?

In the eye of heaven, man's exaltation is measured by his real usefulness. And in true labor—a judicious exercise and application of the various powers of his being to useful purposes—is man attaining to the perfection of true manhood, and exalting himself, through higher and still higher conditions, toward the Infinite Perfection.

“ We must be here to work ;  
 And men who work can only work for men,  
 And not to work in vain must comprehend  
 Humanity, and so work humanly,  
 And raise men's bodies still by raising souls,  
 As God did first.”

\* \* \* \* \*

In the department of labor which you represent, there is an ample sphere for active, useful industry. To dress and keep this fair garden, beautiful as Eden of old, that it may yield its increase, and be comely and attractive to the eye, and thus be fruitful in uses of comfort and convenience and minister gratification to the sense of the beautiful, is a work that admits of no idleness.

It does not comport with my design to give a history of agriculture, or to dwell at length upon its advantages. “ This art is the basis of all other arts, and in all countries co-eval with the first dawn of civilization. Without agriculture, mankind would be savages, thinly scattered through interminable forests, with no other habitations than caverns, hollow trees or huts, more rude and inconvenient than the most ordinary hovel or cattle-shed of the modern cultivator. It is the most universal as well as the most ancient of the arts, and requires the greatest number of operators, employing three-fourths of the population of almost every civilized community. Agriculture is not only indispensable to national prosperity, but is eminently conducive to the welfare of those who are engaged in it.

It above all labor gives health to the body, energy to the mind, is favorable to virtuous and temperate habits, and to knowledge, and purity of moral character; which are the pillars of good government and the true support of national independence."

Agriculture lies at the foundation of all other interests, inasmuch as we are mainly indebted to it for our daily bread. Let agricultural labor cease, and the few that could remain alive on the spontaneous products of the earth, would soon relapse into a state of barbarism, with all the severities and discomforts of savage life. While all the industrial interests are interlinked and mutually dependent, agriculture, supplying the requisites to life, could be less safely dispensed with than any other.

We are selfishly prone to cherish individual and isolated interests to an extent that makes us forget our common relations and common dependence; and especially do we often seem unmindful of the fact that our support—the essentials to our daily life—must come from the bosom of the earth. This it must be that leads to that habit which turns over a fine day in summer to the special benefit of farmers, with the expressions so common: "This is a fine day for farmers; this will make the farmer rejoice;" just as if a day of sunshine and shower, so grateful to vegetative life, should inure to the exclusive interest of the farmer, as if secured by letters patent from heaven. Rather should we, in a correct view of that wise economy of nature in which all interests are indissolubly linked and from which none can be safely severed, regard every day good for the farmer as equally good for us, and hail with gratitude every genial and propitious influence of sun or rain by which the farmer's prospects are improved and his heart made glad. We can only live and develop our plans of usefulness or prosecute our schemes of ambition as the labors of the farmer are blessed of God; as he is successful by an intelligent application of the arts adapted to the cultivation of the soil, in producing in abundance the fruits of the earth.

There is a prevalent and it is to be feared, increasing disinclination to labor, notwithstanding labor is the divinely appointed means of living, and has the sanction of the great and good of all ages. Many have in some way acquired the notion that labor is a curse; a curse above idleness, and the fruits of idleness, which are wicked-

ness, mendicity, pauperism, and a train of ills which never wait on industry, nor follow in the steps of effort. Especially is farm labor looked upon as an undignified employment by many who do not hesitate to accept as an alternative all the degrading concomitants of indolence; while wise men of other pursuits, especially those burdened with the cares and anxieties of mercantile life, with an oppressive sense of its insecurity and hazards, look forward to a quiet rural home and its beautiful surroundings, and the comfortable sense of independence which it inspires, as the hight of their worldly aspirations.

While many other modes of life are precarious, depending upon contingencies, and liable to be effected by varying circumstances, accidents and conditions, no secondary cause stands between the husbandman and his Maker. The labor of the garden and the farm cannot be affected by commercial disasters nor financial panics, but depends for ample returns of subsistence and comfort, on the regular succession of the seasons, and the timely fall of the rain, and the genial warmth of the sun, and the sure productiveness of the soil, and the certain operation of those laws of nature which are nothing less than the varied exertions of omnipresent energy. While other classes are harrassed by anxiety, and often oppressed with an appalling sense of instability and insecurity, the man who depends upon the bounty of his generous foster-mother earth, upon the vine which his right hand has planted, and the branch which he has made strong for himself, can ever cherish an agreeable feeling of independence, confidently relying upon the fulfillment of the promise of seed time and harvest, dwelling in peace under his own vine and fig tree, fascinated with none of the fictitious pleasures, annoyed by none of the unnatural wants, fashionable follies, and tyrannical vices of more busy and splendid life.

Why then should there be such discontent, and uneasy casting about for more lucrative as well as more questionable modes of life, rather than a steady pursuit of honest business, whose returns, though limited, are sure? Whence this spirit of unhallowed ambition and reckless adventure—these prevalent scenes of wild disorder, where so many quit their spheres and rush into pursuits for which they have not been qualified by suitable discipline, and where commercial embarrassments and financial ruin follow hard on fashionable

folly, luxurious excesses, splendid dissipation and princely extravagance?

While this evil may in part be attributed to an inherent tendency, and radical perversity of the human heart, allow me to suggest, but in no censorious spirit, that the blame in part also lies at the door of farmers themselves. Farmers have not always, hitherto, brought to their work such a spirit of intelligent inquiry as would inspire it with interest, and raise it above mere drudgery to the dignity of an intellectual pursuit. The exercise of the mind and of the body must go on conjointly, in order that the latter may be exhilarated to a timely activity. The body without the spirit is dead; and any service not vitalized with spirit and enthusiasm soon becomes monotonous and degenerates into a dull performance. We all know how irksome a task any duty becomes, not entered into with interest and alacrity. Your work has not usually presented those incitements to intellectual activity, and furnished those mental stimulants necessary to the enterprising and adventurous spirit, ever thirsting for knowledge, seeking new experiences, anxious to repeat life in entertaining and novel forms, and revolting against a treadmill service, an irksome round of physical drudgery.

One great reason, no doubt, that we are all so discontented with our lot is, that we have not duly exercised our powers, have not filled up the measure of our capacities, and have dwarfed our minds to the scant measure of some routine service which becomes monotonous, while the nobler faculties of our nature are never appealed to, never aroused into activity, and never thrill with pleasurable emotions. Consequently thousands dying of inanition, start off in mad pursuit of they know not what, and rush precipitately into intemperate indulgences and reckless excesses.

You have not entertained so high a regard for education as would tend to make your pursuit more attractive; farm labor which should inspire enthusiasm and stimulate enterprise, has been bereft of its legitimate interest, been bald of novelty; and many of intellect and capacity, who have aspired to knowledge, have united their energies and talents to other departments of labor. You have yourselves virtually implied a disparagement of your calling, by almost invariably delegating to professional men the authority to represent your interests in legislative capacities, and also by educating your sons



for professions, but treating those devoted to the farm as if it were an axiom, that a *little* learning is a dangerous thing, and *much* learning will make them mad. An improvement is, however, taking place in this respect, and farming is fast arising to the dignity of a science in which the brain, as well as the body, can find healthful exercise, and the mind enjoy pleasant recreation.

No department of activity presents ampler scope for mental exercise, and it is to be hoped it will be found sufficiently inviting to retain in its interest, many young men who are now filling up and overstocking some of the professions, to live a life of dependence and anxiety, their capabilities half developed, their powers of usefulness untried, content to sustain about the same relation to the interests of society and the noble purposes of life, as do barnacles to the utility and value of the ship, to the hull of which they are attached.

There have been within a few years, many improvements in agricultural implements and appliances, and many valuable additions made to the stock of knowledge. Every farmer who desires to pursue his work intelligently and profitably, will of course avail himself of these improvements, and emulate the spirit of enterprise which is now happily inspiring to endeavor an achievement in this department of industry.

While I would not recommend you to follow every vagary—to pursue every fanciful and Utopian scheme, yet I would have you foster a spirit of inquiry in regard to the best methods of labor, the capacities of soils, the best fertilizers, the adaptation of different crops to different soils, the utility of subsoiling, underdraining, and so on, through the whole range of farm, garden, cattle and dairy husbandry. I would encourage you to bring to your labor cultivated minds, both as a means of utility and profit, and an inexhaustible source of happiness.

All investigation is rewarded with ultimate success, if not in the particular department in which it is applied, yet it will be efficient in results somewhere; though you miss the object at which you aim, you will perhaps, attain some other object of more value. Earnest application, firm and resolute endeavor, always meet their reward. The alchemists essayed to discover the art of transmuting base metals into gold. They failed in this, but their researches led to the discovery of the science of chemistry, of incalculably more value

than would have been the discovery of the philosopher's stone. You should conduct your researches in that spirit of hope and enterprise implied in the following lines :

“Though, here, true Love! thou never wilt be found,  
 Yet I'm resolved to search for thee ;  
 The search itself rewards the pains—  
 So though the chemist his great secret miss,  
 (For neither it in art of nature is,)  
 Yet things well worth his toils he gains ;  
 And does his charge and labor pay  
 With good unsought experiments by the way.”

It is a trite but true remark, that he is a public benefactor who causes two blades of grass to grow where but one grew before. Everything done by invention,—an intelligent application of labor under the direction of science, or a skillful adaptation of means to ends,—to develop the capacity of soils, and to increase the quantity raised upon a given surface, by a given amount of labor, is certainly a public benefit. And how much more honorable and noble it is to be a producer in some department of labor—to add something to the common heritage, than to be a lazy consumer of the products of other men's toils.

I will suggest, in passing, that careless and superficial cultivation is an evil among farmers that is a prolific source of much hard labor, bitter disappointment, and not unfrequently of severe poverty. Agriculture means *earth-working*; and one, to be entitled to the distinction of agriculturist, must do his work thoroughly. The statistics of the products of small farms, under thorough cultivation, both in this country and Europe, will convince anybody that a “little farm well tilled” is much more profitable than a large farm under careless and defective cultivation, growing up to weeds and brambles.

The importance of thorough tillage was well understood in the days of ancient Rome, and is finely illustrated by the following apologue :

“A vine-dresser had two daughters and a vineyard; when his oldest daughter was married, he gave her a third of his vineyard for a portion, notwithstanding which he had the same quantity of fruit as formerly; when his youngest daughter was married, he gave

her half of what remained; still the produce of his vineyard was undiminished. This result was the consequence of his bestowing as much labor on the third part left after his daughters had received their portions, as he had been accustomed to give to the whole vineyard."

A further means of securing an interest in farm labor, and of promoting contentment in rural occupations, may be found in providing home comforts, and in beautifying home surroundings. The department of taste has been too much neglected among farmers as something that "would not pay," and not unfrequently have they been obliged to *pay* dearly for the neglect, not only in dreariness and monotony, but in the discontent of their children and their early departure to more congenial employment and the more exciting scenes of city life; and often in their seeking haunts of intemperance, and those scenes of revelry and exhilarating mirth which are the usual accessories of the initiatory departments of dissipation. No expenditure within the limits of enlightened economy, can be unwise, whose object is to cultivate and refine the taste. I am a rigid utilitarian, but am yet to be convinced that a potato patch in a front yard is more profitable than a grass plat, or raising cabbages therein a wiser economy than cultivating dahlias. A cultivated taste is everywhere in the presence of beauty and is ministered to by every object of nature. Dr. Channing said, that but a very small part of the world could be converted into food and raiment and the gratification of the senses, but the whole creation may be made to minister to a sense of the beautiful. Merely to eat and drink is a very small part of our business here, and we do wisely to labor to other purposes and to other ends. We should not live merely to eat and drink and to pursue sensuous ideals, but we should eat and drink to live and fulfill our high destiny; and in extracting pleasure from every legitimate source, we are not only fulfilling the dictates of a sound philosophy but complying with the precepts of a true religion.

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The ladies, I know, will second my appeal in behalf of the cultivation of the beautiful in our hearts and homes, and lead in every enterprise whose object is the perfection of taste, and the realization of the ideal in the actual.

God has blended the beautiful with the useful everywhere.

Beauty and strength were in the sanctuary of old, and we are not informed that the beauty detracted in the least degree from the strength. We cannot err in copying the divine example. The Psalmist had an appreciative sense of the beautiful, and prays, let the beauty of the Lord be upon us, and the more modern poet has said, "a thing of beauty is a joy forever." The cultivation of this sense together with that regard for our environments which it will stimulate, must be eminently conducive to contentment, temperance and peace.

" There 's beauty all around our paths,  
If but our watchful eyes  
Will trace it 'midst familiar things,  
And in its lowly guise."

Another poet asks :

" Why thus longing, thus forever sighing  
For the far off, the unattained and dim,  
When the beautiful is all around thee lying,  
Offering up its low, perpetual hymn?"

The answer is obvious. The perception by which the beautiful in nature and art is apprehended, needs cultivation. Let it be properly developed, and the whole creation becomes a living panorama of beauty, and a perpetual psalm of thanksgiving and praise.

The farmer especially should be at home with nature, and, surrounded as he constantly is with her exhibitions of beauty and grandeur, should be inspired with freshness of soul, newness and energy of being, and enjoy real pleasure amid the placid, tranquilizing and healthful scenes of rural life. Let him particularly direct his attention to neatness, and have a care both on the score of health and profit, to consign to the compost heap all cast-off and decaying animal and vegetable matter which so often disfigures farm yards, and fills the air with pestilential miasma which must be inhaled as a perpetual poison at every breath. In the farm economy as well as the economy of grace, it is profitable to heed the divine precept, "Gather up the fragments, that nothing be lost." Nature never allows any thing to run to waste. She is never prodigal of her energies. All her forces are active ones. And in the exuberance of her strength, and the opulence of her resources, she has nothing to divert from purposes of use or pleasure. Her motto is, "*Utile dulci*"—Mingle the useful with the agreeable.



Agriculture demands attention, at this time, as one of the most remunerative pursuits in the realm of industry. The statistics of breadstuffs and provisions in the United States and Europe, show that for ten years agriculture has not kept pace with the increase of population and the demand for food.

In the United States, calculating the increase of agricultural produce as it should be, commensurate with the increase of population, we find a deficiency as far back as 1850, compared with that of 1840, of fifteen per cent. in the produce of wheat, thirty-three per cent. in that of potatoes, and ten per cent. in that of cattle. While agriculture has thus been declining, the exportation of breadstuffs more than doubled from 1840 to 1850, and has nearly doubled in the last seven years. In view of these statistics, we need not wonder at the high prices of bread and provisions. The only wonder is, that they did not go up sooner, and have not reached a higher point. It is difficult to conjecture how much of this deficiency in the supply of food is owing to the disease in the potato, and how much to the disproportionate increase of manufactures and commerce. No doubt it is largely to be attributed to the destruction of the potato harvest.

Many causes might be assigned, and prolific among them is, that reckless haste to be rich which diverts labor from this department of industry into other channels, and that disinclination to work and patiently await the avails of labor, which culminates in speculating manias and financial disasters.

There is now evidently in this country a large disproportion between labor applied to agriculture and that employed in manufactures and commerce, together with that idly awaiting some lucky turn, some prosperous and happy hit, or the results of some hazardous ventures and bold speculations in the shape of immense fortunes.

Owing to various causes, there is a fair prospect of large shipments of bread to Great Britain, which will materially help the shipping interests, and the agricultural interests of the western States, and contribute relief to the great industrial interests of the country. Notwithstanding such a decline in prices as will bring bread within reach of the poor, yet with the large foreign demand, agriculture will continue to be a remunerative employment.

In the present times, though it may not promise large gains, yet



it is one of the safest interests to be trusted. And while the western States pour out their opulence of bread to feed Europe and bring back money and manufactures in exchange, we ought to raise our own bread out of our own soil, and retain for our home wants, and to increase our wealth, the three millions of dollars which we annually send out of our State for bread. While we should not squander our strength and resources in fruitless attempts to rival tropical climates, we should always raise enough for our own use of every thing indigenous to our climate and soil, and such exotics as there is a reasonable chance of being successful with. It is easier to raise enough for one's own consumption than to pay out money for it. The farmer should divide his land between several species of bread-stuffs—then if one fails, he has amply sufficient left for all his wants. Every farmer should raise enough for his own use of the largest practicable variety. Solomon, who well understood the requisites to success in all departments of human interest, gives a direction which, as pertinent to this topic, may be remembered with profit:

“In the morning sow thy seed, and in the evening withhold not thy hand, for thou knowest not whether shall prosper this or that, or whether both shall be alike good.”

Here I will suggest, at the risk of being tedious, that corn, which is a pretty sure crop in nearly all localities in this State, ought to enter more largely than it does into table uses. I know of no greater luxury among the cereals than corn bread properly made. It is also healthful and nutritious. It ought to be more largely substituted for wheat, especially if wheat cannot be successfully raised among us, and we are obliged to send our money abroad for it.

The subject of fruit raising is especially important, and is, I am happy to know, commanding increased attention. The apple is a more valuable fruit than the orange, and like it, is becoming an article of commerce. A western paper has a short article upon the value of fruit, which is in the main adapted to this latitude, and as it well expresses what I would like to say on this topic, you will permit me to read it:

“FRUIT INSTEAD OF MEDICINE. There is no doubt but that the free use of good fruit is highly conducive to health, and, indeed, almost indispensable to it. Much of the sickness in the western

country is occasioned by the want of it. It is the great scarcity of good fruit that creates such a demand for physic in our western country. The various fevers and bilious disorders prevalent in the summer season, are more owing to the want of it than to any other cause. And not until fruit is generally cultivated, and used as an article of diet, shall we be rid of those disorders, which are sapping the life fountains of thousands of our farmers annually. And if the fruit were administered, in many cases, as an article of medicine, instead of the physician's prescription, we have no doubt that it would be far better for the patient.

Nature, in this, as in all other respects, has bountifully supplied us with varieties, which, if properly cared for, will enable us to enjoy a succession throughout the year. But fruit is not only a necessary of life—it is one of its great luxuries. What is more enticing to the palate than luscious fruit? And as an article of diet, nothing equals it. It is easily raised, costs but little, promotes health, and is liked by everybody. Most people content themselves by cultivating but two or three varieties. This should not be so. Fruit is more needed throughout the summer season than almost any other part of the year. And the varieties which ripen at this time are least cultivated. The farmer cannot take a step which will add more to his own joys, and to those of his own family, than by having such a succession as will furnish him with fruit the entire year.

First on the list in spring time, comes the delicious strawberry. But a little spot of ground is required for its cultivation for the use of the family. Its healthful qualities are well known. Cities well supplied with it are remarkably exempt from disease while the strawberry season lasts. We have accounts of wonderful cures, effected in ancient times, by its use. There are many varieties, but it is not our purpose to note the best of these at this time.

Next in order comes the raspberry—a most excellent fruit, and indispensable to every family. Then comes the blackberry, the cherry, currants and gooseberries. Then comes the apricot, the peach, the nectarine, and the plum. Apples and pears also commence ripening early in summer, and the winter varieties, if properly stored, may be kept till the appearance of fruit next season. Who will not have this succession? How much it would add to home happiness." [Valley Farmer, St. Louis.]

*Farmers of Piscataquis*,—You have a noble heritage in this beautiful valley, rich in all the resources of comfort, contentment and peace. No substantial blessing is withheld. Other counties may in some respects present superior advantages, but it is more than probable that the excess of advantages over your own, in those places pointed out as possessing “superior attractions,” and as desirable to emigrate to, is cancelled by disadvantages that detract much from the pleasure of life. Nature is impartial in the diffusion of her favors. Her law of compensation is enforced throughout the universe, and by it, where she withholds of one blessing she gives of another. And it is better, when, in a spirit of discontent, you compute the blessings withholden, to balance the account by blessings given; and when contemplating a beautiful prospect afar off, it is well, under the application of the rule which the poet has immortalized:

“’Tis distance lends enchantment to the view,”

to make such abatements from the pictures of fancy, the reports of rumor, or the representations of selfish and partizan interests, as shall make them square with the details of sober fact. Experience usually confirms the homely truth, that blessings “far-fetched are dear bought,” and will dispose one to develop the resources at hand, and to avail one’s self of the present opportunity and the present hour.

“The Present, the Present is all thou hast  
For thy sure possessing;  
Like the patriarch’s angel, hold it fast  
Till it gives its blessing,”

and not indolently await the vicissitudes and fortuitous events of time, nor vagrantly wander afar off, for an improvement of your condition and prospects.

While rumor has been busy with reports of fortunes made in a single hour in the western country, some of you may have been impatient at your slow gains, and the tardy revolutions of the wheel of fortune. But the western bubble has burst. Fortunes made on paper, representing no real wealth, with no substantial interests underlying it, have suddenly vanished—dissipated into thin air, and a commercial panic has seized with terror the business interests of nearly the whole community. The wild and visionary schemes of

profligate speculators and reckless adventurers have resulted, as usual, in disaster and financial tribulation. You are no doubt satisfied to have remained at home, in the steady prosecution of honest industry, rather than to have polluted yourselves with the vice so prevalent in all classes of community, that of financial gambling, and dabbling in fancy stocks, with the danger of reaping the fearful retribution. With no failure in the substantial resources of the country, rich in all the elements of true wealth, a fearful lack of moral integrity, and increase of profligacy in the business world, have been hurrying us on to ruin. Somewhat remote from the great business centers, the temptations to this sort of stock-gambling are here comparatively few, and the great blow which threatens the peace of the country will fall upon you harmless. You ought to rejoice in your godly heritage—that your lines have fallen to you in so pleasant places; and to cherish an honest pride in being a farmer, a farmer's wife, son, or daughter, in the beautiful valley of the Piscataquis. And above all, you ought respectively to earn your title to this honorable distinction, by an intelligent pursuit of your great interests, by frugal living, by multiplying the substantial comforts of life, and by paying for it the real price of labor, which above wealth or any social advantage, is knowledge and virtue.

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Some of the premiums awarded, are as follows :

**HORSES.** For best stock horse, to Americus Crockett of Guilford, on a fine Messenger horse, eight years old; second best, to L. S. Crafts of Monson, on a Morgan, seven years old.

Best carriage horse and best saddle horse, to E. G. Thompson of Foxcroft.

Best pair matched horses, to W. N. Thompson of Sangerville.

Best trotting horse, to Daniel Wyman, jr., for one of "French Tiger" blood.

**BULLS.** Best Durham bull, to Nathaniel Fish; second best do., to G. Brown.

Best Hereford bull, to P. M. Jeffrods.

**COWS.** Best milch cow, to Thomas Proctor, for a grade Durham; second best do., to Nathaniel Fish.

**OXEN AND STEERS.** The Committee on Oxen and Steers report the exhibition in this department to be very good. "The great number of fine animals on the ground, imposed a hard task in drawing comparisons where so many possessed points of high merit. But two town teams were entered—Foxcroft only competing for the *cash* and the *honors*, with her two teams.

Ye noble bullocks of Dover, Sangerville, Atkinson, Guilford, and the entire circuit, where were ye that ye did not come forth and contend, and not let the little town of Foxcroft so easily triumph over you and your inattentive owners, and thus bear away the palm?

We award to Foxcroft, on town teams, the first and second premiums.

Seven pairs of oxen were entered for work. On the first class, seven feet oxen, and over, we award the first premium to Leonard Robinson of Foxcroft; second do., to Seth Brawn of Foxcroft. On oxen under seven feet, we award first premium to Jacob Leeman of Abbot; second do., to W. S. Mayhew of Foxcroft. On oxen under six feet, we award first premium to Jacob Leeman. The oxen exhibited by L. Robinson appeared as all good oxen should—well disciplined and ready—a model for good work.

Several fine pairs of three years old steers were exhibited.

On trained steers by boys under sixteen years old, first premium to Charles W. Wharff of Guilford—'Nash's Progressive Farmer'; second do., to Walter S. Wharff of Guilford—'Waring's Elements of Agriculture.' We also award a copy of 'Waring's Elements of Agriculture' to Leonard D. Washburn of Foxcroft, aged thirteen, for his good show of a pair of yearlings."

**SHEEP AND SWINE.** First premium to A. J. Chase, on long wool English buck, (Leicester.)

First premium to Calvin Chamberlain, for breeding sow and pigs, (grade Suffolk.) Second premium for same, to Jacob Leeman, (grade Newbury White); some of her pigs have weighed five hundred pounds at twenty to twenty-two months.

**DAIRY PRODUCTS.** The show of these seems to have been good, and the statements are full and numerous but contain little of novelty or special interest.

First premium on September butter, to Mrs. S. Crockett of



Dover; second do., to Mrs. Walter G. Jewett of Sangerville; third do., to Mrs. Charles Loring of Guilford.

First premium on cheese, to Mrs. Samuel Greeley of Foxcroft; second do., to Mrs. Ira Rowe of South Dover; third do., to Mrs. Charles Loring of Guilford.

**IMPLEMENTS.** The Committee remark, that there were plows and cultivators presented by Chandlers, Brown & Co. of Foxcroft, which would have been entitled to premiums had not the Society conferred the same last year.

Mr. Place of Charleston, exhibited a fine specimen of a spring tooth horse rake; but not being manufactured in the county, it could not compete with others made in the county.

Some Berwick Frye plows were put on show by Sawyer & Woodbury of Dover; the same that took the highest premium at the late State Fair at Bangor. These plows need no recommendation from your Committee, as many of them have been proved by the farmers in the county.

The Committee also remark, that the farmer's boiler, for which they awarded a premium, should be used by every farmer in the county, as with it the greatest quantity can be cooked at the least expense—takes but very little fuel, and can be used out or in doors as convenience or circumstances may require.

Mr. Chamberlain who received premium on horse cart and hand cultivator, makes the following statement:

“The horse cart was built by my own hands, and is my only attempt at making wheels. The result is so satisfactory, that I may be indulged in saying a few words on even so small and common a matter. Six years ago, in fitting up for the management of a few acres of land, I spent the cold part of the winter in making a set of tools. This cart, a field roller and some other articles, have stood a pretty severe test in the service of a village neighborhood ever since. I procured a pair of cast iron hubs at the village foundry, and bought a chance to saw out a set of spokes from a lot of oak. I had some red heart beech plank, that had been several years sawed, from which I made the felloes. The spokes were made without shoulders, and driven to the bottom of the mortice, using in the setting, a mixture of oil and hydraulic cement. The bands were put on without nails;

and now at the end of the sixth season, are as tight and perfect as at first. The large timbers in the cart body are of cedar. All the joints in the cart were painted when put together, and the cart has had no repair. The proportion is that approved of by best English farmers—height of wheel four and a half feet, length of body inside, five feet eight inches.

The hand cultivator, or wheel hoe, is one of a set, working different widths, such as I made two years since for root cultivation in small lots where a horse could not be worked. This implement, as we have seen it at the stores, is a rude affair, working on a wooden axle, and has but little service in it. Mine, though made with iron axle, are cheap enough, costing inside of two dollars—much easier worked and far more durable. The cutter is made by a common blacksmith working under my direction—cut out of an old circular saw, and is hard as steel can well be made. I find these tools a great help in destroying weeds where the land is well cleared of stones; one man doing as much as eight or ten with hand hoes.”

C. CHAMBERLAIN.

Foxcroft, October, 1857.

Of Davis' platform bee hive, the Committee on Honey speak as follows:

“The advantages of this arrangement over ordinary hives are quite numerous. The bee hives are placed, as many as are desired, upon a platform covered with wire cloth, (fine mesh,) so that the air passes freely through the hives up into the honey boxes, and out at the back side. In the winter the honey boxes are taken off and the air chamber kept on, by which all the damp air passes off, so that it does not congeal and make frost or ice over in cold weather, or among the bees; and, during soft weather (that often follows in winter) melts and runs down and destroys them, as is the case frequently with the common hive. Another advantage in this arrangement is, that the bees can pass from their own hive into the adjoining empty one, and thus prevent coming out to swarm. It is also constructed so as to prevent the different swarms from robbing each other. Your Committee, notwithstanding many, so called, improvements of late have been introduced in the form of bee hives, are of opinion this surpasses all former inventions of the kind.”

*Statement of B. F. Wilbur*, the Secretary of the Society, who introduced this hive into the county :

“The platform bee hive which is hereby placed on show, was made by my son, B. F. Wilbur, Jr., at my request—was manufactured in Monson, and has never before been offered to the Society for premium. This hive has been used to a limited extent in this county the past season, and highly approved by those who understandingly and properly managed with it. The advantages of it are many, and it cannot but be liked by every bee keeper who is thoroughly conversant with the habits and wants of the honey bee. I make the statement without the fear of contradiction from any experienced, intelligent, practical apiarist, here or elsewhere, that, without the platform, such as the one here presented; or something very like it, bees cannot be safely and successfully cultivated.”

B. F. WILBUR.

Monson, October 8, 1857.

CROPS. The Committee say, that it is much to be regretted that so few entries are made for premium crops in this fertile and thriving county. Premiums were awarded—

To Geo. A. Childs, on twenty-nine and one-third bushels of wheat per acre.

To Jacob Leeman, on one hundred and fifty-two bushels of ears of corn per acre.

To Charles Loring of Guilford, on thirty-eight bushels of barley per acre.

To Seth Lee of Atkinson, on seventeen and one-fourth bushels of beans per acre.

*Statement of George A. Child on Wheat.* The crop of wheat for which I ask a premium, was a yield of thirty-three bushels on one and one-eighth acres, or a fraction over twenty-nine bushels per acre. The field was run out grass land, and was broken up in November, 1854, with four oxen; in 1855 was sowed to oats; crop very light; plowed in the spring of 1856, and seven-eighths of an acre planted to corn, beans and pumpkins; well manured; eleven loads long manure spread on and ten loads of compost, made of swamp muck and hog manure, put in the hill; crop, twenty bushels shelled corn, four and one-half bushels beans and ten loads pump-

kins; one-fourth acre was planted to ruta bagas; turnip ground was manured with seven loads green cow manure only in the drill; crop one hundred and fifteen bushels. Last spring the whole, one and one-fourth acres, was plowed, harrowed, and sowed with two bushels of the bald spring wheat; seed sowed the 8th of June; harvested in September; crop thirty-three bushels of good plump wheat; the soil a gravelly loam.

GEORGE A. CHILD.

Monson, December, 1857.

*Statement of Jacob Leeman on Corn.* The character of the soil upon which my corn grew, is a fine gravelly loam of a deep or dark brown color. The state and cultivation of the land were thus: One-half of the ground was manured highly in 1856, and the other half was plowed in September, 1855, and ten loads cow manure put on and harrowed in. The said ground was plowed and harrowed thoroughly last spring and marked off in rows four feet apart, and ten loads of hog manure, in which some hen manure was mixed, was dropped in the hills three feet apart; planted the last days of May; two bushels plaster per acre was used and three barrels of ashes; hoed three times; depth of plowing eight or nine inches; value of manure used \$17; the kind of seed was the large eight-rowed variety; harvested in October; cut up at the roots and shocked; the yield one hundred and fifty-two bushels of ears of corn, four bushels of beans and two loads of pumpkins.

JACOB LEEMAN.

Abbot, December, 1857.

*Statement of Mr. Loring on Barley.* I have raised the past season thirty-eight bushels of good barley on one acre of land; it was reduced mowing ground, cutting less than half a ton per acre. The previous cultivation was as follows: I broke half an acre in the fall of 1855, the other half in the spring of 1856; spread and plowed in eight cords of green stable manure on that which I broke in the spring; the other part I harrowed in; I then furrowed and put six cords of old cow-yard dung and hog manure in the hill, and planted corn. Last spring I plowed, and last of May sowed three bushels of the two-rowed variety of barley; harvested the last

of August. My crop was injured ten or twelve bushels by lodging. One-half of the piece was a stony loam, the other sandy loam or river land.

CHARLES LORING.

Guilford, Dec. 25, 1857.

*Statement of Seth Lee on Beans.* I raised the past season seventeen and one-fourth bushels of good beans on one acre of land. The soil is gravelly loam; had been mowed for hay the past five years. Plowed 25th of May six inches deep; no barn-yard manure applied; planted 1st day of June with one bushel and two quarts of yellow-eyed variety of beans; put one bushel of plaster mixed with two bushels of ashes in the hills; cultivated and hoed twice; harvested about the 12th of September by pulling up and stacking; left to dry in the field some fifteen days. Whole expense about \$12.

SETH LEE.

Atkinson, Dec. 30, 1857.



## NORTH PENOBSCOT SOCIETY.

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Of this, the Secretary, P. M. Clark of Springfield, writes thus :

“This Society now embraces one hundred and ninety-four members—nineteen new ones having been added during the past year. Its Annual Exhibition was held at Lincoln Village, on the 7th and 8th days of October. The exhibition was attended by a very large proportion of the citizens of the vicinity. Much enthusiasm was manifested, and a general sentiment prevailed that in future the Society should receive more attention and support. The exhibition of stock was good and quite extensive. A number of our citizens have commenced raising improved stock, in which we think the community will take much interest. In the evening of the 7th, the farmers held an impromptu debating club, during which many interesting speeches were made, all in favor of developing the resources of our own country, instead of selling out and going west, and all earnestly advising our young men to remain in the east, instead of seeking for more rapid and uncertain wealth in the western States.

The past season with us was very wet, increasing very much the expense of cultivating root crops, but giving good crops of grass, and almost all kinds of grain. I think it materially injured the corn crop; and many fields of roots were much injured by weeds that could not be subdued, the continued wet weather preventing.

Hay was generally secured in fair order. Hay caps are coming into use considerably, and are liked by all who use them. Potatoes suffered from rust, but the crop was better than the average of the past few years.

Some farmers lost portions of their crops by the fall rains. Fruit crops light. On the whole, the season has been more productive than the average of the past ten years. Grazing was good, and the stock came to the barn in good condition.”

The statements give an impression corresponding with the remarks of the Secretary as above given.

Among the horses are noticed a pair of draft horses, shown by George W. Severance, weighing twenty-three hundred pounds, and also a pair weighing twenty-six hundred pounds, one of which hauled forty-eight hundred pounds on a dray, and the pair drew five and one-half tons for several rods without trouble.

Jacob Heath showed a full-blood Hereford bull, which he says he finds of good disposition and docile, and gets large and handsome stock. He also showed a bull half Devon and half Durham; prefers this cross for beauty, for size and for beef.

The statements on premium butter show that the best exhibited was made *without washing*, (as is customary with most of our butter-makers,) which injures the flavor. Mrs. B. Lovejoy's method of preserving June butter, is as follows :

“The butter on which I drew a premium was made in June, but instead of packing it at once, I made a pickle of rock-salt, loaf sugar and saltpetre; made my butter into pound balls and kept it in the pickle till September, when I took it from the pickle, removed all moisture from it with the hand, and enclosed it in airtight stone pots. I find this method the best for keeping butter so that it may retain its original flavor and sweetness.

Lincoln, Nov. 7, 1857.

## WEST PENOBSCOT SOCIETY.

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This flourishing Society held its Show and Fair at East Corinth, on the 25th of September.

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### STOCK.

*Statement of I. W. Case of Kenduskeag, on Durham Stock.*

I offer for exhibition and premium,

One full blood Durham bull, "Boxer," two years old.

One full blood Durham bull calf, "Uncas," nearly five months old.

The pedigree of "Boxer," as recorded in the American Herd Book, is as follows:

"*Boxer*. Roan color. Bred by J. & E. Wardsworth, Livermore Falls, Me. Calved May 6th, 1855. Got by Bay State (237). Dam Lily, by Comet (358).

g. dam Lucy, by Rough and Ready (930).

g. g. d. Mrs. Lathrop, by North American (116).

g. g. g. d. Lily, by Grafton (1623).

g. g. g. g. d. Young Lilac, by Sampson (5074).

g. g. g. g. g. d. Lilac 2d, by Frederick (2038).

g. g. g. g. g. g. d. Lilac, by Young Denton (963).

g. g. g. g. g. g. g. d. Arabella, by North Star (460).

g. g. g. g. g. g. g. g. d. Aurora, by Comet (155).

g. g. g. g. g. g. g. g. g. d. —, by Henry (301).

g. g. g. g. g. g. g. g. g. g. d. —, by Danby (190)."

I purchased him of Messrs. Wardsworth, his breeders, in the spring of 1856, when eleven and a half months old. He was kept that season on grass pasture only, and was wintered on hay, without

provender of any kind. He was allowed to serve twelve cows while a yearling. This season he was kept up till the middle of July, his feed being hay and from two to three quarts of oat and pea meal per day. He was then turned out to pasture, and has had no provender since. He has served between fifty and sixty cows this season. The calves of his get, out of native cows, are a great improvement on our common stock, showing many of the peculiar Durham points, and bid fair to make superior animals. On the side of both sire and dam he is descended from excellent milking stock—several of the cows named in the foregoing pedigree having made from *fourteen* to *fifteen* pounds of butter per week, according to the certificate of Mr. Lathrop of Massachusetts, who bred and owned them.

His girth is *five feet nine* inches.

I give the pedigree of the bull calf:

“*Uncas*. Color roan. Bred by I. W. Case, Kenduskeag, Me. Calved May 2d, 1857. Got by Bay State (237). Dam Stella, (exhibited here to-day,) by Cosmo (1398).

gr. dam Clota, by Young Comet (2418).

g. gr. d. Spot, by Young Fitz Favorite (2428).

g. g. gr. d. Kate, by Banquo (1226).

g. g. g. gr. d. Judy, *alias* Betty, imported by Henry DeGroot, New York.”

Bay State, his sire (also the sire of Boxer) is a very superior animal, owned by the Messrs. Wardsworth, and the winner of the first prize at the State Fair, in Portland, last year.

This calf was taught to drink when one week old, and has had half the milk of one cow through the season. He was turned to pasture the middle of June, and since that time has had with his milk, night and morning, a porridge of Indian meal, gradually increased in quantity from half a pint to three pints a day.

I regard this breed of cattle as superior to others in docility, gentleness, early maturity, and good feeding and milking qualities. They will thrive on the same *quality* of feed that our native stock will, and require no greater *quantity* than they in proportion to their live weight.

ISAAC W. CASE.

September 25th, 1857.

I also offer for exhibition and premium the following named animals :

One full blood Durham cow, "Stella," ten years old.

" " heifer, "Alice 4th," three years old.

" " heifer calf, "Alice 5th," five months and twenty days old.

The pedigree of the cow "Stella," as recorded in the American Herd Book, is as follows :

"*Stella*. White. Bred by Col. R. H. Green, Winslow, Maine. Calved August 21st, 1847. Got by Cosmo (1398). Dam Clota, by Young Comet (2418).

gr. dam Spot, by Young Fitz Favorite (2428).

gr. g. d. Kate, by Banquo (1226).

gr. gr. g. d. Judy *alias* Betty, imported by Henry De Groot, New York."

I purchased her of Messrs. Wardsworth of East Livermore, in December last. She was wintered on hay, without provender of any kind. Dropped her calf (exhibited here to-day) on the 2d day of May. Her feed during the season has been grass only. She gave during June and July, sixteen quarts of milk a day, on very ordinary pasture—though the best I could afford her, being rather overstocked. She is now giving about fourteen quarts a day. Her milk is of excellent quality for butter, requiring very little churning to convert it into butter. I have several times churned the cream from her milk, completely separating the butter from the buttermilk, in *three minutes*, in a common dash churn. She made nine and one-eighth pounds of butter in seven days from the 18th of June, being the only time her milk was set separately during the season. Her girth is just six feet.

I give the pedigree of the three years old heifer, also taken from the American Herd Book :

"*Alice 4th*. Roan. Bred by William Cushman, New Braintree, Mass. Calved April 8th, 1854. Got by Murat (729). Dam Alice 3d, by Logan (95).

gr. dam Alice 2d, by Prince Albert (847½).

g. gr. d. Alice, by Splendid (5297).

g. g. gr. d. Danaë, by Carlos (1787).



g. g. g. gr. d. Dewdrop, by Charles (878),

g. g. g. g. gr. d. imported Duleibella, by Frederick (1060).

g. g. g. g. g. gr. d. Delicia, by Major (2252).

g. g. g. g. g. g. gr. d. —, by Comus (161).

g. g. g. g. g. g. g. gr. d. —, by Marske (418).

g. g. g. g. g. g. g. g. gr. d. —, by Mr. Wetherell's bull."

She came in on the 7th of April last, dropping the heifer calf exhibited with her. Her keeping, both winter and summer, has been the same as the old cow's. As a milker she is very good for a heifer. She made in June a pound of butter a day on ordinary pasture only. Her milk resembles that of the old cow in its dairy qualities. She took the second premium as a two years old at the State Fair, in Portland, last year, and the same premium at the Kennebec Fair, in October last. Her girth is five feet six and one-half inches.

The heifer calf here offered for premium, was dropped by the above, April 7th, 1857, and is now five and two-thirds months old. She was got by the full blood Durham bull Bay State (237), winner of the first prize at Portland, last year. She sucked her dam one week—was then taught to drink, and has had half the milk of one cow through the season. At six weeks old she had, night and morning, with the milk, a porridge made of half a pint of Indian meal, which has been gradually increased in quantity to three pints per day. She has been in the pasture since the middle of June.

I esteem this breed of cattle for their docility, gentleness, early maturity, and good milking qualities. From the experience I have had, I can say that they can be kept, both winter and summer, on the same quality of feed as our native cattle, and that they require *no more of it* in proportion to their live weight.

ISAAC W. CASE.

September 25th, 1857.

From the statements on cows we gather that Wm. Spratt showed a native cow, six years old, which gives in June and July twenty-four quarts of milk per day—on common pasture.

C. Cochran showed grade Durham cows, one four years old, giving twenty quarts per day, and one three years old, giving eighteen quarts per day.

E. F. Crane of Kenduskeag, obtained second premium on steer calves, of which he says: "They are of native breed, five months old, of four feet and five inches girth, and raised by myself in the town of Kenduskeag. These calves were raised by hand, or, on the pail. For the first four weeks they consumed what hay they wanted, with the addition of three quarts of new milk and three quarts of skimmed milk per day to each calf. For the last four months they have been to pasture, with the daily allowance of one quart of Indian meal, eight quarts of skimmed milk and three quarts of new milk, made into porridge and equally divided between them. Amount consumed by the calves during five months:

Skimmed milk, 1,050 quarts, at 2c., . . . . .	\$21 00
New milk, 450 " at 4c., . . . . .	18 00
Indian meal, 120 " . . . . .	3 50
	<hr/>
Cost of raising, . . . . .	\$42 50

If brought up on cows for the same length of time, each cow giving eight quarts per day, they would have consumed 2,400 quarts of new milk, which, at four cents per quart, would amount to \$96. Balance in favor of raising by hand, \$53.50."

#### DAIRY PRODUCTS.

A. Barton's dairy consists of seventeen cows; prefers grade Durhams; makes cheese as follows: "I add the rennet about twenty-five minutes after milking, and let it stand until the curd makes; cross the curd, and it stands until morning; grind the same in a curd-grinder with the morning's curd; then salt to taste and press the same about forty-eight hours. I find highland or clover pasture makes far the richest cheese. My cows averaged two hundred and twelve pounds each, last year."

Thomas Mansfield prefers grade Devons for butter making; yield, one hundred and eighty pounds butter per annum.

Chauncey Cochran says: "My dairy consists of four cows; they are of native and native and Durham breeds. I feed them on hay in winter and grass in summer. My manner of making cheese is as follows:—Evening's milk is put into a cheese-tub with rennet suf-

ficient to bring the curd in twenty minutes; it is then put carefully into a cheese-basket to drain the whey from the curd; the morning's milk is managed in the same way; when the two curds are put together and hung in the milk room, in the celler, until the next morning, when another curd, made in the same manner, is added, and they are scalded together and put in press. I use a small tea cup full of salt to forty pounds of curd. I am sometimes three days making one cheese."

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### CROPS.

From the statements on crops are gathered the following facts:

**INDIAN CORN.** John C. Clement of Kenduskeag, obtained the first premium for corn grown on one acre of light gravelly loam; Indian corn was raised on the land the previous year; plowed twelve inches deep and harrowed; applied eight cords of compost and sowed twelve quarts of eight-rowed corn in hills on the 15th of May; cultivated and hoed three times, spreading upon the land three bushels of ashes; on the 28th of September, harvested one hundred and twenty-five and one-half bushels of shelled corn and sixteen thousand three hundred and thirty-three pounds of stalks; cost of culture, \$54.

J. O. Tilton of Kenduskeag, received the second premium on corn grown on one acre of gravelly loam, free from stone; corn was grown on the land the year before; plowed twice in the spring before planting, about eight inches deep; six cords of manure were applied before plowing, and six cords of the same quality of manure were put in the hill; the corn was part eight and part twelve-rowed; the last is very early corn and much preferred; on the 14th of May planted; the ground was hoed three times and cultivated once; ashes and plaster were applied, about ten bushels in the proportion of one part plaster to four parts of ashes; the stalks were cut up at the roots after the corn was harvested; prefers this method to top cutting; one hundred and ninety bushels of ears to the acre, and about \$12 worth of stalks; cost of culture, \$59.

Matthew Ritchie of East Corinth, obtained the third premium on corn, grown on one acre of fine, light slaty soil of a dark color;

corn was grown on the land the previous year; plowed six inches deep and applied ten cords of coarse manure before plowing, and six cords in the hill; sowed eight quarts on the 25th of May; the crop was cultivated and hoed twice, and eight bushels of ashes applied; harvested by cutting up at the roots when well changed in color; cost of culture, \$42; value of crop, \$91; one hundred and eighty-eight bushels of ears.

Crosby Clements of Kenduskeag, obtained first premium on half an acre of corn, grown on a sandy loam of a dark color, free from stone; grass was cut on this land the previous year; plowed six inches deep and applied two and one-half cords barn-yard manure; sowed on the 9th of May the corn, which had been soaked in water for three days and then rolled in plaster; cultivated and hoed three times, and spread on ashes and plaster worth \$1; the top stalks were cut off after commencing to harden, cost of culture, \$18; crop in ratio of one hundred and ninety-six bushels of ears to acre.

Hall Bagley of Charleston, obtained second premium on one-half acre of corn, grown on light gravelly loam on which oats had been raised the year before; the land was plowed six inches deep and a shovel full of old manure applied in the hill; a tea spoonful of plaster was placed in each hill before plowing the first time; cut up at the roots and harvested corn at the ratio of one hundred and ninety-six bushels of ears to the acre.

I. W. Case of Kenduskeag, obtained the third premium on one-half acre of corn, on gravelly soil which was broken up in the fall of 1855 and in the spring of 1856 was lightly manured and planted to corn; plowed, and no manure being spread on, the corn was planted in hills twenty inches apart; cultivated twice and hoed twice; tops cut off on the 1st of September; cost of culture, \$24.90; yield of crop, eighty-three and one-third bushels of shelled corn per acre.

WHEAT. E. F. Crane of Kenduskeag, obtained the first premium on one acre of Scotch Fife wheat, grown on a gravelly loam upon which corn was raised the year before; five cords of hog manure were applied to that crop; plowed five inches deep and spread on two cords of stable manure; one and three-fourths bushels of seed were sown on the 20th of May, broadcast; after the kernel began to be hard the crop was harvested and found to yield seventeen and

one-half bushels of wheat and two and one-half tons of straw ; cost of culture, \$12 50.

Hall Bagley obtained the second premium on one acre of wheat grown on a light loam upon which corn had been raised the previous year ; the ground was plowed six inches deep, and two bushels of white bald wheat was sown after having been washed and dried with lime ; yield, sixteen and one-half bushels per acre.

Thomas B. Keniston obtained the first premium on one-half acre of bearded Finsen wheat, sown broadcast, on a clay loam, on which corn had been raised the previous year ; plowed eight inches deep and applied three cords of barn-yard manure before harrowing ; two bushels of seed were used to the acre ; yield, nineteen bushels per acre ; cost of culture, \$12.50 for one-half acre.

OATS. E. F. Crane of Kenduskeag, obtained the first premium on oats grown on one acre of clayey loam ; the land had been in grass for many years ; plowed in the spring, about eight inches deep and spread on two and one-half cords of stable manure ; the seed was sown broadcast on the 25th of May, at the rate of three bushels of seed to the acre ; yield, seventy-two bushels of thirty-one pounds to the bushel ; cost of culture, \$11.25.

Hall Bagley of Charleston, obtained the second premium on oats grown on one acre light loam on which beans had been raised the year before ; plowed this spring, six inches deep, and harrowed ; no manure applied ; five bushels of seed were used to the acre ; yield, sixty bushels to the acre.

BARLEY. Matthew Ritchie of East Corinth, applied for premium on a crop of barley which was sown on one and one-half acres dark colored loam which is light and friable and underlaid by a slaty subsoil ; the ground was planted to corn and potatoes the previous year ; the seed was the two rowed variety ; sowed two and one-half bushels on the 20th of May, and harvested the last of August.

*Cost of crop.*

*Value of crop.*

	Barley,	\$34 17
	Straw,	8 00
		<hr/>
		\$42 17
		15 00
		<hr/>
<hr/>	\$15 00	Profit,
		\$27 17



POTATOES. E. F. Crane of Kenduskeag, applied for premium on a crop of Orono or Reed potatoes, grown on a light gravelly loam of a brown color; the land was in grass the previous year; plowed eight inches deep; applied four cords of strawy manure; harrowed and furrowed; on the last of April, planted twelve bushels in hills about one and one-half feet, and the rows three feet apart; cultivated once and hoed twice; harvested on the last of October, three hundred and twenty bushels.

<i>Cost of Crop.</i>		<i>Value of Crop.</i>	
Plowing, harrowing and furrowing,	\$4 50	320 bushels at 50c.,	\$160 00
Manure, planting, hoeing,	13 00	Cost,	29 00
Cultivating and gathering,	11 50		
	<hr/>		
	\$29 00	Profit,	\$131 00

Matthew Ritchie of East Corinth, applied for premium on a crop of potatoes, grown on a loam of dark color and light and friable in nature, underlaid by a slaty subsoil; grass was grown upon the land the previous year; on the land, while in grass, ten cords of strawy manure were spread and plowed under in the spring; the land was planted the middle of May, three feet between the rows and two feet between the hills; the variety of potato was Jackson; hoed them once and applied about one bushel of plaster; harvested on the first of October; about seventy bushels out of two hundred and seventy-three bushels were unfit for market on account of rot.

<i>Cost of crop.</i>		<i>Value of crop.</i>	
Manure,	\$15 00	203 bushels at 45 cts.	\$91 35
Plowing,	4 00	Cost,	35 50
Harrowing and planting,	3 00		
Hoeing and plaster,	3 50		
Harvesting,	5 00		
Seed, small and worth,	5 00		
	<hr/>		
	\$35 50	Profit,	\$55 85

Crosby Clements of Kenduskeag, obtained premium on one-half acre of Orono potatoes, grown on sandy loam of a dark color; barley was raised on the land the previous year; plowed six inches deep and harrowed and applied one-half a shovelful of barn-yard

manure in each hill ; used five bushels of seed to half acre ; cultivated and hoed once, and applied three-fourths bushels of plaster ; cost of culture, \$14.50 ; yield at the rate of two hundred and twenty bushels to the acre.

CARROTS. J. O. Tilton of Kenduskeag, received the first premium for orange carrots, grown on one-eighth acre in the proportion of ten hundred thirty-five bushels to the acre ; the ground was dressed with one cord of compost manure, and the seed was sown in drills sixteen inches apart ; cost of culture, \$5.00.

E. B. Stackpole of Kenduskeag, received the second premium for orange carrots grown on one-fourth acre of clay loam, at the rate of six hundred and thirty-six bushels to acre ; two and one-half cords of manure were applied to the sward and plowed in ; the drills were eighteen inches apart ; hoed the rows twice and weeded twice ; cost of culture, \$16.25.

E. F. Crane of Kenduskeag, received the first premium on one-fourth acre of orange carrots, grown on light gravelly loam, free from stones ; the ground was in a high state of cultivation the previous year, and during the present season was plowed ten inches deep, and two cords of compost of hog manure and night soil was applied ; the seed was sown the 1st of June at the rate of one-half pound to the acre, in drills ; hoed three times and harvested November 1st ; cost of culture, \$15.25 ; rate to the acre seven hundred and sixty bushels.

Sylvester Eddy of Corinth, received second premium on one-eighth acre of long carrots, grown on a light and friable loam of a yellow color ; one and one-half cords of green stable manure were plowed under twelve inches deep, and the seed sown in drills eighteen inches apart ; seed sown at the rate of one pound to the acre ; proportion to acre seven hundred and four bushels ; cost of culture, \$14.20.

## WALDO COUNTY SOCIETY.

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Of this Society its Secretary writes :

“Its Annual Exhibition was held at Belfast, on the 14th and 22d days of October, 1857. The leading features of our exhibition are that of stock and the show at the hall. The exhibition of stock surpassed any we have before held in the county, and we observe a steady improvement from year to year. The exhibition at the hall was fully equal to any ever held in the county. That of fruit and vegetables was said to rank nearly equal to that of the State Fair.

We look upon the exhibition at the hall as the saving feature of the whole, though considerable interest is manifested in the other departments. We made over one hundred and fifty entries of stock, and more than two hundred at the hall.”

TIMOTHY THORNDIKE.

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### FROM THE REPORT OF COMMITTEE ON FARMS.

The Committee met at the residence of Horace McKenney, in Monroe. Here we found a farm well cultivated, a large team of horses, oxen, a very fine lot of cows, together with sheep and swine in abundance. This farm we consider one of the best in this section; everything here is neat and in ample order.

We then visited the farm of John Heagan, Esq., in Prospect. Here we found a large farm with a fine stock of cattle and sheep. The cows on this farm and some of the young stock are some of the best we have seen. This farm, put under a higher state of cultivation, would be second to none in the county.

We then visited the farm of Robert Patterson, Esq., in Belfast. Here we found a farm under a high state of cultivation and some of

the finest young oxen ever raised in our county. The crops on this farm we consider a little better than any we visited. Here we found sound potatoes and ripe corn.

We then visited the farm of E. P. Brown, Esq., in Belfast, which the Committee considers a fine farm; everything here speaks well for its enterprising owner.

The Committee find it a difficult task to decide which of these farms are entitled to the preference, but have decided that Robert Patterson's economical improvement in the cultivation and management of his farm is the best, and award him the first premium; Horace McKenney the second premium; John Heagan the third premium.

DAVID NORTON, *Chairman.*

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#### HORSES.

Premiums were awarded as follows:

On stallions, first premium to F. S. Nickerson of Searsport, (Young Morgan); second do., to S. Collier of Unity, (Hazard Morgan); third do., to J. L. Twitchell of Montville, (Hard Row).

On three years old stallions, first premium to A. G. Mudgett of Belfast, (Young Drew).

On two years old stallions, first premium to Joseph Payson of Waldo, (Young Fox); second do., to J. L. Twitchell of Montville, (Young Fox); third do., to George Morrill of Belfast, (Messenger).

Premiums on other horses were awarded to Horace McKenney of Monroe; to H. Hayford of Belfast; to T. H. Marshall of Belfast; to E. Morrill of Belfast; to D. Foster of Montville; to Jason Hill of Lincolnville; to Cornelius Whitcomb of Waldo; to Otis Whitcomb of Waldo, and to others.

Mr. Foster's horses were a large pair of blood bays, and for work or draught cannot be excelled.

Mr. Mitchell's horses were a pair of light footed sorrels, fine, for carriage use.

The Committee say: "John Berry of Liberty, presented a large Messenger horse, four years old, of good action, and will no doubt be a very valuable animal when he comes to maturity.

P. Pitman of Waldo, presented a young Drew, five years old, of fine action, and when trained for trotting will no doubt compare favorably with other fast nags.

A. G. Mudgett of Belfast, presented his young Hiram Drew, five years old. With careful usage, good grooming and training, Hiram would soon be called one of the fast ones."

The Committee on Mares and Colts report, that "there were seven mares with their colts entered for premiums.

They award the first premium to A. S. Forbes of Brooks, on his five years old mare—weight twelve hundred and seventy pounds—with a fine colt by her side, both of the Messenger stock.

The second premium, to Mr. Osborn of Palermo. His mare is the seventeenth colt, of an English mare, which the Osborns have raised. She had a fine colt, sired by what is now called the Old Fox, which was reared by N. Pierce of Montville, afterwards owned by A. Hayford of Belfast.

The third premium, to William H. Hall of Belfast, on his Messenger mare, with a colt from the Drew stock.

Your Committee examined some fine mares with very nice colts, presented by Messrs, Hilt, Pitman, Gilman and Cross, but as there were only three premiums offered, we had to govern ourselves accordingly.

A. R. PIERCE, *Chairman.*

The Committee on Trotting Horses, report as follows :

*Horses over five years old—distance half mile.*—First premium to Plough Boy, owned and driven by Horace McKenney of Monroe; second do., to Gray Charley, owned by S. C. Dean of Lincolnville, and driven by David Harding of Belfast; third do., to Lady Wellman, owned and driven by Thomas H. Wellman of Belmont.

*Horses under five years old—distance half mile.*—First premium to Lincolnville Boy, owned and driven by Seth M. Young of Lincolnville; second do., to Hiram Drew, owned and driven by A. G. Mudgett of Belfast.

The best time was by Plough Boy, in one minute and thirty-three seconds; second best, by Lincolnville Boy, in one minute and forty-five seconds. The track was very heavy, on account of the recent rains, which very much impeded the speed of the horses."

J. D. TUCKER, *Chairman.*



## TOWN TEAMS.

The Committee on Town Teams award first premium to the Belfast team; second do., to the Monroe team.

“In regard to the teams examined, they would say that the team entered by H. Hayford for Belfast, was as fine a one as your Committee ever saw hitched together. We could have selected a better team if we had been allowed to make our selection from all that were exhibited upon the fair ground, but we think no town in this part of the State can produce as fine a team of oxen as Belfast.

The teams consisted of eight yokes each, although Belfast had twice that number upon the ground, but did not wish to claim the premium by outnumbering their competitors from a distance.

The average girth of the Belfast team was seven feet three inches; the average age, five years.

The team entered by H. McKenney for Monroe, was a fine one. Mr. McKenney had three yokes in the team, one yoke of which was the largest exhibited at the fair.”

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 DAIRY.

The report on Dairy Products awards premiums to certain numbers, not giving names. The following statements are found:

“My dairy consists of five cows, four new milch and one farrow cow. During the winter they were kept on hay; in the spring I gave them about two quarts of meal a day each for a few weeks after calving. Their feed during the summer has been on high and low land—rather poor. Am not particular about the breed of my cows. They made from the 20th of May to the 20th of September, five hundred weight of butter. During this time, I used two quarts of milk per day. I set my milk in a cool room above the cellar, in tin pans, and let it remain from thirty-six to forty-eight hours; churn cream only; wash the butter once. After working it thoroughly to free it from milk, add salt to suit the taste; do not consider salt essential to keep the butter sweet.”

HOWARD MURPHY.

“My dairy consists of three cows and one heifer. After the 20th of July, from the 20th of May to the 20th of September, we made two hundred and ninety-six pounds of butter, and two hundred and fifty-two pounds of cheese. I set the milk in a dairy room, which has a draught of air from the cellar, until the cream rises, when I skim and churn this alone. I work out all the butter milk, then salt it with pure ground salt, then put it away for use.”

JASON HILLS.

“CHEESE. I set the milk in pans at night, in the morning the milk is strained into a cheese tub, and the night milk added, then the rennet. I dip the curd carefully into a cheese basket, cutting it occasionally with a knife, letting it drain until it is quite dry, then put it in the cellar, where it remains till I have made two or three curds, when I chop them dry and mix them together, adding salt to the taste, then press two or three days.”

JASON HILLS.

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#### MISCELLANEOUS.

The Committee on bread remark, that there were two lots of very superior flour ground by R. Moore, at the new and improved grist mill of Capt. David Howe, Lincolnville, which attracted general attention. One lot was from Canada wheat, the other from Java, raised this year by Jason Hills of Lincolnville. On account of the superiority of Mr. Howe's mill, and the quality of the wheat, this flour was equal to the best western grades.

The Committee on Meritorious Articles award to Alonzo Bryant of Montville, a premium on a model for winnowing machine. The Committee consider this a great improvement for separating different kinds of grain and also for separating wild seeds from grain.

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#### CROPS AND STATEMENTS.

The paucity and meagreness of the returns from this Society are no where more apparent than in those relating to crops. From the

report on "root crops and vegetables," we learn that thirty-four dollars were paid to some twenty exhibitors, mostly for samples of fine roots and vegetables, but no statement or other item of information is found regarding them beyond the following for which a gratuity was awarded :

"Two thousand cabbages raised on three-eighths of an acre of land on which were two thousand apple trees."

For a report on crops is found the following note :

"DEAR SIR :—We have been waiting to receive statements from some that had specimens of corn at the Fair, is why we have not reported before.

First premium on corn to Howard Murphy ; second do. do. to David Norton ; third do. do. to Robert Patterson.

First premium on oats to Elijah Morrill of Belfast.

First premium on barley to Earnest Lingerset of Belfast.

First premium on beans to Ephraim Ludwig.

Second premium on peas to Ephraim Ludwig of Liberty."

No statements whatever accompany this paper on crops, and only one is found at all, viz. : from a Mr. Roberts, on potatoes, which does not appear to be noticed in either report. It is as follows :

"CAMPEACHY POTATOES. Raised on sandy loam, worked about six inches deep ; previous condition rather poor ; manure, two-thirds hen manure, one-third plaster, mixed and pulverized ; one great spoonful in a hill, and one-half spoonful plaster put on after they come up ; cultivated and hoed once ; harvested September 28th ; yield, two hundred and thirty bushels to the acre."

T. T. ROBERTS of Brooks.

## WASHINGTON COUNTY SOCIETY.

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The Secretary writes :

“This Society now embraces five hundred and thirty-five members—twenty-three new ones having been added during the past year. Its Annual Exhibition was held at Pembroke, on the 22d and 23d days of September. I regret to say that the leading characteristics of the exhibition were confusion and noise, a great gathering of people, a very respectable show of calves, much disappointment among the fast horse men, by the *deluge* of the second day. From some cause we failed to have an address, but got up a little stump speaking. The show was not large in any department, but in all, showed a degree of progress. The specimens being, in general, superior to those of former shows. The premiums of \$8, \$7, \$6, \$5, \$4, offered for calves, produced the effect intended, and saved many fine calves from the butcher. The show of calves was better than ever before. I can see that the Society is exerting a beneficial influence upon the agriculture of the county, stimulating farmers to improve their modes of management by a more thorough culture, rotation of crops, improvements in building fences and farms in general, more careful systematic culture, and improved breeds of stock. The past season has been favorable for the production of hay and grain—unfavorable for corn—yet threshers complain that the yield of grain is light for the quantity of straw threshed. The general features of the past season were a cold and wet April, May and June; the first half of July fine; the last half, and August, foggy; and, in fact, the whole season wet.”

WILLIAM D. DANA, *Secretary.*

The stock shown, so far as appears from the statements of competitors, was mostly of native breeds, with some grades and few of full

blood. William D. Dana showed a full blood Devon bull, bred in New York, and imported by the Agricultural Aid Society. All the young stock of his get were strongly marked, and the breed is highly esteemed for being easily and cheaply kept, hardy, docile, active, and as cows, rich milkers.

Cows were shown—grade Ayrshires, and some spoken of as mixed English breed, having good milking properties.

The horses were principally of Morgan, Messenger, Drew, Tiger, and English extraction.

The swine, grades of several breeds, the Cuban being most frequently mentioned.

The sheep, mostly native; some crossed with Merino and some with Scotch breeds.

The statements on stock, though returned in considerable numbers, present no striking peculiarities. The same remark will apply to the statements regarding dairy produce. The only item mentioned in them as worthy particular notice as an improvement, is the working of butter with ladles or spankers, and removing the butter-milk thoroughly by their means and without washing.

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### CROPS.

From the statements it would appear that A. Frost raised fifty-six bushels of oats, grown on one acre of land, to which a little dressing was applied.

W. S. Blackwood raised fifty-five bushels of oats grown on one acre.

Hugh Porter raised buckwheat at the rate of forty-nine bushels per acre, on land dressed with one bushel of plaster.

A. Frost raised four hundred bushels of rutabagas on one-half acre of land which was in green sward the previous year; planted one hundred and fifty pounds of guano; yield at the rate of eight hundred bushels per acre.

Otis Lincoln raised six hundred and fifty bushels of rutabagas on one acre of land, in grass last year. The seed was oiled and dried



in lime ; applied after planting three hundred and thirty-six pounds of guano and seven cords of compost ; cost of culture, \$30.

N. P. Pattangal raised five hundred and sixty bushels of rutabaga turnips on land which was in grass the previous year ; applied in drills, eighteen cords compost manure per acre.

Seth Gerry raised two hundred and eighty-two bushels of potatoes on one acre of land, in barley last year. Manured in the hill with barn manure.

N. P. Pattangal raised two hundred and twenty-five bushels of common red potatoes grown on one acre of land, in grass the year before ; manured with sixteen cords compost ; compost made as follows : equal parts of fresh muck, barn manure and rockweed.

Seth Gerry raised white beans at the rate of thirty-two bushels per acre, on land in corn last year. Applied sixteen cords of barn-yard manure.

Otis Lincoln raised French carrots at the rate of six hundred and forty bushels per acre, on land in grass last year. Applied the following compost : swamp muck, rockweed, barn-yard manure. Used seven cords.

## PENOBSCOT & AROOSTOOK UNION SOCIETY.

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This Society held its Show and Fair at Golden Ridge, Aroostook county, on the 8th of October. The Secretary writes that an instructive address was delivered by ALFRED CUSHMAN, Esq., on Practical Farming. No copy of it has been received for publication.

The influence of the Society has been very marked in awakening interest on agricultural subjects, and improvement is visible in many departments. The President, Mr. Cushman, writes as follows :

“This Society is improving in strength and importance. It has received a large number of new members the present season; and exerted a good influence in favor of improvement in agriculture, especially in improving the breed of stock, and the manner of cultivating Indian corn. Since the formation of this Society, the quantity of corn grown upon an acre has increased from fifty or sixty bushels to about one hundred. The Annual Fair (which, for this place, was quite respectable,) showed quite a prevailing error; which is: each one presumes his neighbor's things will exceed his own, and therefore it is better not to compete than be excelled. While our soil is excellent, and when properly dressed will produce the largest crops, there is a disposition to crop without manure, which much exhausts the land. We labor under the disadvantage of costly transportation of necessaries from Bangor, which can be relieved only by a railroad; yet, as it is, there probably is no place in the Union where a man with small capital, or none at all, can commence farming and do as well as here. The State owns many thousand acres of land in townships number three, range five; number four, range four, and others within the limits of this Society, of the best quality—covered with beautiful hard wood—easily cleared—the best for first crops—grass, and plowing,—which it gives the settler, by his making his own road. Any healthy man, who will commence here, and practice a reasonable degree of industry and

economy for ten years, will find himself well off—which means more here than almost anywhere'else. We have a plenty of good limestone, and an inexhaustible quantity of muck; and every farmer who will, can make his farm as rich as a garden by uniting them together and making a liberal application to his land.

The past season has been very unfavorable for wheat. Early sown was badly injured by weevil, and late sown, on low land not exposed to the wind, injured by rust; whereby very little produced more than twenty bushels per acre. Corn that has been properly treated, has produced large crops of good corn. Oats are generally good—some pieces producing seventy-five bushels weighing thirty-seven pounds per bushel, or, by weight, over ninety bushels per acre. Potatoes have suffered very little by rot—sometimes producing more than three hundred bushels per acre. Other crops have produced about as usual."

A. CUSHMAN.

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#### FROM REPORTS ON STOCK.

J. S. Stacy obtained first premium on bull—a grade Durham. Jonathan Palmer obtained first premium on two years old bull. The best cows exhibited, were of native stock. The animals of Mr. Gerry receive special commendation and several premiums. Alfred Cushman, first premium for full blood Durham cow. Nathan Weymouth, first premium for dairy cow. Alfred Cushman, first premium for best yoke oxen. Ephraim Joy, first premium for three years old steers. Many other premiums on neat stock were awarded, but the Committee greatly regret their limited means and the consequently small premiums offered.

**HORSES.** First premium for best stallion, to James S. Stacy; second do. do., to S. Robinson; third do. do., to John Caldwell.

First premium on breeding mare and colt, to James S. Stacy; second do. do., to Francis Weeks.

The Committee speak in high terms of the horses exhibited, and award various other premiums.

**SHEEP.** Best flock, first premium to Peter Plunket. Best buck, first premium to James Palmer.

## DAIRY PRODUCTS.

These seem to have been exhibited in good quantity and quality. The statements are fully returned, but though highly creditable they state little that is new or of special interest. Mrs. H. N. Darling, who obtained the first premium on both butter and cheese, states that she does *not* wash her butter, but works out all the buttermilk without washing, and finds it much the preferable way.

## CROPS.

INDIAN CORN. Alfred Cushman received first premium on a crop of two hundred and ten bushels of ears of Dutton corn, grown on an acre of loamy soil which was in corn and potatoes last year and then received ten cords of manure; plowed this year seven inches, applying fourteen cords stable manure worth \$2 per cord; planted 25th to 28th of May, in hills three feet by twenty inches asunder; hoed three times at cost of \$16; cut up at the roots 20th September; whole cost of crop, \$60; shelled corn worth here \$1.50 per bushel.

Morgan L. Gerry obtained second premium on corn. His statement is as follows:

“The corn grew on one acre and twenty rods of land, mostly planted to corn last year, then newly broke, being very rocky, and which I am preparing for apple trees. The soil is a light slaty loam; stones a mixture of white flint, slate, &c., slate ledge appearing above ground in many places; corn planted three and one-half feet by three, where the ledge would permit.

*Cost of Crop.*

Plowing, one and one-fourth days, two hands and four oxen,	\$5 00
Harrowing, nearly half day, boy and yoke of oxen,	1 00
Seed, seven quarts,	44
Planting, three hands and boy one day each,	3 50
Ten loads manure, spread previous to plowing,	20 00
Six loads, 25 bushels to the load, of compost in the hill,	6 00
Hoeing twice, thirteen days,	13 00
	<hr/>
	\$48 94

*Contra. Cr.*

By 51½ bushels of sound shelled corn, at \$1.34 per bushel,	\$68 57
Value of manure out for next year, . . . . .	6 00
	<hr/>
	\$74 57

I will here remark, that I have not stuffed my land with manure for the pleasure of telling a great story, neither do I believe it economy so to do. My land received about the same quantity of manure the year previous as last year, and I consider it in as high a state of cultivation as is prudent for the next crop, in this fertile country where we frequently have our grain lodge, blight or rust in consequence of too large a growth of straw. Experience has taught me that in Northern Maine we ought to cultivate our seed so as to not cheat ourselves. This season I cut up my corn with the tops, while last year I cut the tops off and let it ripen in the field, which I prefer when the season is favorable—all of which depend on circumstances. We may talk of raising one hundred bushels or more to the acre with ease, and make it profitable; for my part, if I raise fifty I think it a smart crop, and forty or even thirty-five preferable to some other crops.”

MORGAN L. GERRY.

The third premium on Indian corn was awarded to Jacob Sanders, on thirty bushels shelled corn, seven hundred pumpkins and two bushels beans per acre.

WHEAT. First premium to John Davis for thirty-three bushels on one and three-fourths of an acre; the land was in wheat the year previous, on the burn.

Second premium to Joseph R. Cushman; amount of crop not given.

OATS. John Davis, first premium on seventy-seven bushels of thirty-seven pounds each, struck measure, on one acre and eleven rods of light slaty loam; was in wheat last year, after a burn; no manure; stubble plowed in.

Second premium to J. B. Gerry, on sixty-five bushels of thirty-seven pounds each, on one acre and four rods light slaty soil; trees felled two or three years ago.



**RYE.** J. B. Gerry had a premium on twenty-three bushels white spring rye, per acre.

**BUCKWHEAT.** J. B. Gerry had a premium on forty-six bushels per acre; cost of sowing and harvesting stated to be \$4 per acre; value, \$17; the land in potatoes last year; three pecks seed sown 10th June; cut end of August.

**BEANS.** Ezra S. Cushman obtained premium on twenty-four bushels of pea beans per acre, grown without manure.

**POTATOES.** First premium to S. Robinson, on three hundred and twenty bushels per acre, of "peach blows," grown on light loam, free from stones; last year the land was plowed up, manured and harrowed, and planted to potatoes; the present year no manure, except two hundred and fifty pounds plaster, at first hoeing; hoed twice; dug end of September.

Second premium to James S. Mitchell, for two hundred and eighteen bushels, on one hundred and forty-seven square rods of old grass land, plowed a year ago, ten inches deep, in July, and harrowed twice that season; applied three cords of barn manure, and cross plowed first of October; planted first of May, on the furrow; hoed once; dug first October.

Other statements are returned which would be of interest were they not deficient in amount of produce, size of the plot, or some other important item.

## NORTH AROOSTOOK SOCIETY.

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The Annual Show and Fair of this Society was held at Fort Fairfield, October 6th and 7th. The weather was fine and the exhibition a very creditable one.

Some of the premiums awarded were as follows :

**HORSES.** Daniel Chandler, for best stallion, (Morgan and Messenger.)

Amos Bishop, for best breeding mare; Stillman Gordon, second best do.

E. S. Fowler, for best three years old colt.

A. C. Johnston, for best two years old colt.

Sumner Whitney, for best matched horses; Amos Bishop, second best do.

George H. Freeman, for best horse of all work.

**BULLS.** Owen McShea, for best improved bull; J. W. Haines, second best do.

James Johnston, for best grade bull.

**WORKING OXEN.** Thomas Hoyt, for best working oxen; M. C. Bolster, second best do.

This Committee suggests (and the suggestion is worthy of consideration by other Societies also) "that the Society purchase a Dynamometer, for the purpose of testing the relative strength of teams, which might be done in some field, near the show ground, without blocking up the highways, and thereby endangering the lives of travelers. A few posts driven into the ground, enclosing a circle with chains or rope, would much obviate the difficulty of spectators crowding on to the teams and load; and if there is some

portion of them that must have a *drag ride*, let them hire some team and pay what it is worth, get up a show of their own and give the Committee a chance to attend to their duty."

STEERS. The first premium on three years old steers, was awarded to Bradford Cummings. "Noble fellows," the Committee say.

Mr. C.'s statement is as follows:

"The steers I present for premium, were three years old last May; their girth about seven feet; were raised by me on my farm in Letter D Plantation; do not know how much they weigh. The winter they were calves, they were fed on hay and about two quarts oat-meal per day, and three quarts potatoes twice a week; since that time their keeping has been one peck of cut turnips each a day and oat and wheat straw fed as it came from the threshing machine; after the middle of March, each year, gave them hay; their keeping in summer a good red clover and herdsgrass pasture. The breed is Durham and native; I consider this breed combine both the qualities of work and beef. The cost of keeping the first year after they were weaned, \$10; the second year, \$17; the third year, \$20."

BRADFORD CUMMINGS.

Letter D Plantation, Oct 6, 1857.

TOWN TEAMS. The town team shown from Letter D, consisted of twenty-three pairs, of which five pairs measured upwards of seven feet each.

Cows. First premium on stock cow, to B. Cummings; second do. do., to J. W. Haines.

First premium on milch cow, to E. W. Waite.

Of this cow Mr. Waite states: "White and red cow, twelve years old, part English, (probably Ayrshire,) raised by me; when a week old learned to drink; grown at very moderate cost; value, \$60; has given twenty-five quarts of milk per day and made sixteen and three-fourths pounds of butter per week."

Of a stock cow and heifer, shown by Mr. Stevens, he states:

"My heifer is a cross of the Durham and Hereford. The second week in September I made from this heifer *seven pounds* of butter; she had no other feed than what she got in the pasture that she had

run in all summer; I judged that the quantity of milk she gave was not over one-half that she gave in the same number of days in June. She dropped her calf the first of April.

My cow is one-half Durham and one-half Hereford. This breed I look upon as being well adapted to this country, more so than the full blood Durham. I find them to be fair milkers, good workers, hardy, and fatten easily. She was four years old last April. I keep my stock on English grass in summer and English hay in winter—or what I consider to be equivalent. That is, one peck of rutabagas to a cow per day, with straw and coarse fodder, I consider equal to the best of English hay.

HIRAM STEVENS.

SHEEP. The Committee say: “The number of sheep on the ground was not so great as they had hoped; the few that were presented proved conclusively that sheep husbandry is not entirely neglected by the farmers of Aroostook. Possessing every facility for growing as good wool, and the best mutton in the State, at a very moderate expense, it is to be hoped that our farmers will increase their number, and improve the quality of their sheep, until wool shall become one of the principal staples of our county.”

Premiums were awarded on Leicesters, or “Perley sheep” as they are called here; also on grade Merinos and Dishleys. The Leicesters seem to be the favorite stock.

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#### CROPS.

As there seems to be a rapidly increasing interest among our citizens in regard to the productive powers of this section of the State, it is deemed expedient to give below *all* the statements received, and also the full report of the Committee.

“The Committee on Crops find four entries of spring wheat, two entries for clover seed, two for herds grass seed, two for oats, two for oats and peas, one for potatoes, two for rutabagas. Of specimens, there were two of spring wheat, two of oats, one of buckwheat, six of beans, several specimens of garden vegetables, potatoes, seed corn, &c.

Owing to the fact that but few farmers have their threshing done, there were but few entries made, and not from the want of interest taken in raising crops. There certainly never was more interest taken in farming, within the influence of the Society, than the present season. We think the Agricultural Society has had a tendency to produce that result.

We award the first premium on spring wheat to William F. Hopkinson; the second to Daniel G. Palmer; the third to Hiram Stevens.

The first premium on peas and oats to Sumner Whitney; the second to Hiram Stevens.

The first premium on clover seed to William Johnston.

The first premium on potatoes to E. S. Fowler.

The first premium on rutabagas to J. W. Haines; the second to E. W. Hoyt.

The first premium on garden vegetables to Jona. Hopkinson; the second to H. C. Currier.

The best specimen of spring wheat to Otis Eastman; second do. to J. W. Haines.

For the best specimen of oats to E. S. Fowler; second do. to W. F. Hopkinson.

For best beans to E. Knight; second do. to O. Eastman.

For best seed corn to E. S. Fowler.

We also recommend a gratuity to Jacob Bridges for a crop of oats, eighty-nine bushels to the acre, and to J. W. Haines for crop of oats of one acre, eighty-one bushels.

There were two entries of wheat, one of clover seed, one of herds grass, and one of beans, of which the statements were not in conformity to the regulations of the Society and the laws of the State, and therefore not entitled to premiums, although worthy as to quality and quantity."

E. S. FOWLER, *Chairman.*

*W. F. Hopkinson's Statement on Wheat.* The crop of wheat which I enter, was raised on one hundred sixty-five and three-eighths square rods of ground, and produced thirty-three bushels and four quarts of well cleaned wheat, entirely free from all other grain, being at the rate of thirty-two bushels and one quart per



acre. The wheat was of the white bald variety, and was sown on the 2d of May last, on burnt land that had "lain over." One and one-fourth bushel of seed was sown per acre.

*Cost of Raising.*

Felling trees per acre, . . . . .	\$4 00
Limbing, . . . . .	1 00
Clearing, . . . . .	8 00
Sowing and harrowing, . . . . .	2 50
Harvesting, . . . . .	4 00
Threshing, . . . . .	5 00
Seed, . . . . .	2 50
	\$27 00
Total, . . . . .	

WILLIAM F. HOPKINSON.

*Statement of D. G. Palmer on Wheat.* The crop of wheat which I enter, was raised on one acre of ground; it produced thirty bushels and one peck; the seed was of the white bald variety, and five pecks were sown to the acre; it was sown the 22d of May last on land which had "lain over" and was burnt in the spring; the land was not plowed.

*Cost of Raising.*

Felling trees, . . . . .	\$3 00
Limbing, . . . . .	50
Clearing, . . . . .	9 00
Sowing and harrowing, . . . . .	2 00
Harvesting, . . . . .	4 00
Threshing, . . . . .	5 50
Seed, . . . . .	2 50
	\$26 50

Crop worth . . . . . \$45.37½.

D. G. PALMER.

*Statement of Hiram Stevens.* Having entered for premium one acre of wheat, one of oats and peas, and one of herds grass, I herewith submit the following statement :

My oats and peas were the third crop raised on the land since the trees were cleared off, which were felled in the summer of 1854. They

were cleared off in the spring of 1855, and put into wheat. The summer of 1856 I raised on this land a crop of oats, about forty bushels to the acre. The second week of last May I sowed and harrowed in three bushels of peas and one of oats to the acre. The 18th of August I harvested them. When threshed I had thirty-one and one-half bushels. The land was plowed for the first time last fall. My crop cost me as follows :

Plowing land,	\$2 00	31½ bushels of peas and	
Harrowing and seed,	5 25	oats, worth 75 cents per	
Sowing seed and picking roots,	75	bushel,	\$24 52
Harvesting,	2 00	Cost,	12 00
Threshing,	2 00		
	<hr/>		
	\$12 00	Profit,	\$12 52

The land that I raised my wheat on has been pastured for four years. The last of April I broke it up about nine inches deep. The 8th of May I harrowed down the furrows thoroughly. The 9th of May I sowed on and harrowed in one and three-fourths bushels of white bald wheat, prepared by washing it in cold water and drying it fit for sowing by mixing with it unleached wood ashes, on one acre and thirty-six rods of land. After the grain got up about three inches, I sowed on one and one-half bushels of plaster, with the same amount of unleached wood ashes. Harvested the last week in August, which yielded, when threshed, twenty-five bushels of first rate grain, making a fraction over twenty bushels and twenty-nine quarts to the acre ; which cost me as follows :

Breaking land,	\$3 00	25 bushels of wheat, worth	
Seed,	3 50	\$1 75 per bushel,	\$43 75
Sowing and harrowing,	2 50	Cost,	17 25
Plaster Paris and ashes,	1 25		
Harvesting and threshing,	7 00		
	<hr/>		
	\$17 25	Profit,	\$26 50

*Herds Grass.* I have cleaned up from the herds grass raised by me on one acre of land, in the summer of 1856, and entered by me for the Society's premium, being only an average of the crop on a field of seven acres, two and one-half bushels of bright, handsome seed. If I had made a selection of the best acre, I have

no doubt but what I should have got four bushels. After reaping the grass and binding it in bundles with double bands, I stood up from ten to fifteen in a place and let them remain two or three weeks, to rot. I practice reaping my herds grass early, then cutting the bottom for hay, which, if well cured, is worth at least one-half the price of good hay. My figures stand thus :

Reaping herds grass, and		2½ bushels of herds grass,	
binding,	\$1 50	worth \$3 00,	\$7 50
Hauling in and cleaning,	1 50	Cost,	3 00
	<hr/>	Profit,	<hr/>
	\$3 00		\$4 50

The profit seems small, but when we consider the bottom worth half the price of good hay, it makes a very respectable income from one acre of grass. I am of opinion that the raising of grass seed is injurious to this country. Farmers think it is the only way that they can raise money to pay their taxes and small cash debts, but this is a mistake. An acre of grass cut for hay and fed to stock will yield far better returns. I have, for the last six years, cut considerable of my grass for seed ; I now see that it has been a sad mistake.

HIRAM STEVENS.

*Statement of Mr. Bridges of Presque Isle, on Oats.* The acre of oats which I present for premium, was sown on the 10th of June, on land that I planted to potatoes and corn in 1856. The seed is what is known as Russian oats. I harvested them the third week in September, and had eighty-nine bushels.

JACOB BRIDGES.

*Statement of J. W. Haines on Oats.* The Russian oats which I offer for premium, were grown on an acre of light friable loam of dark color, resting on a limestone substratum, being new burnt land and never plowed ; three bushels of seed sown 10th May ; harvested in September, when ripe ; yield eighty-one bushels.

Sumner Whitney offered for premium a crop of one hundred and six bushels (machine measure) of oats and peas, grown on two acres of light loam twelve to eighteen inches deep, on a hard sub-soil ; half of it was in wheat and half in sod the year before ; no

manure applied; plowed eight inches and harrowed; sowed four bushels seed broadcast per acre; cut in September before fully ripe; cost of growing, \$6 per acre, \$12; value, \$79.50.

William Johnston offered for premium a crop of clover seed grown on two and three-fourths acres; "yield five hundred and seventy-seven pounds, which makes two hundred and nine pounds per acre; harvesting and hauling to mill, \$13; value, at fifteen cents per pound, \$86.55."

E. S. Fowler obtained premium on two hundred and ninety bushels of Christie potatoes, grown on an acre of yellowish loam, rather gravelly, fifteen inches deep, which had lain in pasture for four years; plowed in October eight inches deep; applied twelve loads of barn-yard manure and one and one-half bushels of plaster; planted 20th May in hills three feet by two asunder, using nine bushels of seed; harvested in October.

J. W. Haines obtained premium on crop of four hundred bushels of purple-top rutabagas, grown on one acre of light loamy soil, resting on limestone, being newly burnt land; seed sown June 20th broadcast, with no preparation and no after culture whatever bestowed upon the crop; estimated value, twelve and a half cents per bushel.

E. W. Hoyt grew three hundred and seventy bushels of the same on similar soil and with similar treatment; sown 10th June.

















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