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THE
CANADIAN AGRICULTURIST
 AND
Transactions

OF THE
BOARD OF AGRICULTURE OF UPPER CANADA.

VOL. IV.

TORONTO, AUGUST, 1852.

NO. 8.

AGRICULTURAL SOCIETY OF THE UNITED
 COUNTIES OF FRONTENAC, LENNOX
 AND ADDINGTON.

OFFICERS FOR 1852.

President.

ANGUS CAMERON, ESQ.

Vice-Presidents.

BARON DE LONGUEIL, PETER DAVY, ESQ

Secretary & Treasurer.

MR. THOMAS GLASSUP.

Directors.

REV. MR. ALLEN, JOHN FLANIGAN, WM. FER-
 GUSON, THOMAS SCOTT, AND HENRY ARM-
 STRONG, ESQRS.

A Meeting of the Inhabitants of the United Counties, interested in the Agricultural prosperity of these Counties, was held at the Court House, Kingston, on the 18th Feby., 1852, at 1 o'clock p. m., for the purpose of forming themselves into a County Agricultural Society of the United Counties of Frontenac, Lennox and Addington, under the provisions of the new Agricultural Act, of the Provincial Legislature 14 & 15 Vic. 6, Cap. 127, when the declaration as contained in schedule A attached to the said act, was signed, and the amount of subscriptions as by law was completed.

BY-LAWS.

Whereas, by the Act of the Provincial Parliament now in force, for the better organization of Agricultural Societies in Upper Canada, power and authority are vested in each County Society to make, alter, and repeal, By-Laws and Rules, for the regulation of such Society, and the carrying out of its objects.

No. 1. That the funds of this Society shall be deposited wherever it shall be ordered by the President and Vice-Presidents, by resolution entered on the Minute Book, to be kept by the

Secretary, and that said funds shall not be withdrawn from such place of deposit, except for the payment of the debts due by the Society, on the order of the President countersigned by the Treasurer.

2. That in order to accumulate means for the purchase of Books, Seeds, Stock, Implements, a Model Farm, or any other property; or to defray any expense allowed and contemplated by the third section of the Act above recited, a sinking fund is hereby formed, and shall consist of the balance at present on hand, debts, if any, due to the former Society, and all subscriptions collected from time to time that shall be over and above the sums mentioned in said Act, as necessary to obtain the full Government allowance of money annually, and also of any balance that shall remain at the end of each year expended by the Society, and such other sums as the Directors of the Society, may in their discretion, deem advisable to appropriate towards said sinking fund, and no moneys shall at any time be appropriated from such sinking fund for the payment of premiums awarded at Exhibitions or Ploughing Matches.

3. That no office-bearer or office-bearers of this Society shall incur any debt whatsoever in the Society's name without previous authority from the President and Directors, and no liability whatever shall be incurred by the Society beyond the amount of money at the time under its control.

4. That from this time a Stud Book, and also a Herd Book, shall be kept by the Secretary for the purpose of recording the pedigrees of Full Blood Horses, and pure Durham Cattle; and that no entry shall be made in either of such books without the approval of the President and Directors. That also a Herd Book be kept for pure blooded Ayrshire, Devon and Hereford cattle, in which it shall be required to register each animal, and that prior to each registration, the President and Directors of the Society shall

be satisfied after strict scrutiny that to the best of their judgment, such animals are pure in blood.

5. That the Judges shall admit no pure blooded animal into competition in any class except such as are entered in the Stud or Herd Books.

6. That no Full Bred Cattle shall be allowed to compete in the class of Grades.

7. That there shall be two classes of Sheep, namely, the Leicester, and the Southdowns.

8. That there shall be two classes of Pigs, namely, the Small and the Large size.

9. That the premium list, and the time and place of holding the Fair and Cattle Show, be published annually, at least six months before the time at which it is to be held.

10. That there shall be quarterly meetings in each and every year for the discussion of Agricultural subjects, on the second Tuesday in March, June, September, and December. The subject for discussion to be named at the Meeting prior to the time of discussion.

THE PRESIDENT'S ADDRESS.

Gentlemen, since much important business will necessarily occupy the attention of this meeting, I may be permitted, without further prelude, to inform you that the Act, by virtue of which the Agricultural Societies of these United Counties have been organized, was repealed on the 30th of August last, and that, therefore, until, under the Law now in force, a Society be re-organized, we cannot legally proceed to business.

Having thus complied with the requirements of the law, and formed ourselves into a society, it will devolve upon us, as a first duty, to proceed to the election of the necessary officers,—a President, two Vice-Presidents, a Secretary and Treasurer, and five Directors, in addition to those who by reason of their office as Presidents of the Township Societies, are already such.

By reference to the third section of the Act, you will find that the objects contemplated by the Legislature, and to be embraced by this Society, are:

“To encourage improvement in Agriculture, by holding meetings for discussion, and for hearing lectures on subjects connected with the theory and practice of improved husbandry; by promoting the circulation of Agricultural periodicals published in the Province; by importing or otherwise procuring Seeds, Plants and Animals of new and valuable kinds; by offering prizes for essays on questions of scientific inquiry relating to Agriculture; and by awarding premiums for excellence in the raising or introduction of stock, the invention or improvement of Agricultural Implements and Machines; the

production of grain and all kinds of vegetables, and generally for excellence in any agricultural production or operation; and also by the acquisition and cultivation by any such County, of a Model Farm, if deemed advisable by such Society.”

Whilst anxious that each of the several heads above referred to may be discussed by some members of our Society, I feel more particularly desirous of calling your attention to the “awarding of premiums for excellence in the raising or introduction of Stock.” Under the present circumstances and with present prospects—hay at five dollars per ton, and wheat at three shillings per bushel—it may be suggested that possibly a greater attention to the raising and introduction of stock might be an improvement on the practice which now prevails within these Counties. An increased stock would cause a greater consumption of fodder—would increase the means of fertilization, diminish the extent of surface to be ploughed, and thereby lessen the cost of labour; nor is it unworthy of consideration, that whilst our clay soils in this neighborhood are more difficult of cultivation, they are more suitable for pasture than lighter soils, especially when care is taken to sow clover wherever it is not of spontaneous growth; and this opinion is further strengthened by the consideration that the completion of the Rome and Cape Vincent Railroad, with its terminus at our very doors, has brought a great Southern Market within our reach; thus enabling a farmer on any given day to fill a car with his own fat sheep or bullocks, and within twenty-four hours hold in his pocket the New York price of them, with the additional advantage of a pleasant trip. In recommending an improvement in the breed of our Stock, as well as an increase of the quantity, and better premises, and more care for their housing and winter-feeding, there is no intention to detract from the merits of the plough, the parent of all good husbandry, the means of sustenance for man and all animals, on which his comforts more immediately depend. To succeed in one of these important branches of husbandry, is to furnish the means of success in the other; but wheat being the universal staple article of exportation from all agricultural countries, if we find that we cannot with equal success compete in its profitable production against countries nearer the chief market, then we may be acting judiciously in making inquiry whether our land, labor, and capital, may not otherwise than in the raising of grain for exportation, be more profitably employed.

But confining our attention to the matter of Stock within these counties, is there not apparently much evidence of the necessity of some improved method of managing and providing

proper houses or sheds for them? In the absence of great general improvement in this respect, the outlay of money in the purchase of the higher priced stock may be regarded as little better than so much waste. In summer, with good pasture and water, cattle need little attention. In winter, labour is cheaper; we are thus rendered more inexcusable for not bestowing proper attention on them.

Whilst thus adverting to this subject, it may not be deemed inappropriate to notice a statement which appears in the "Prize Essay on Agriculture," to which was awarded the Gold Medal given by the Directors of the Johnstown County Agricultural Society. The author of the Essay, after much valuable information on ploughing, sowing, Draining and Manuring, thus writes:

"It appears to me to be one of the greatest inconsistencies, and indeed absurdities, with which we farmers can be charged, that we have individually and collectively, as Societies, taken much pains, and incurred much expense, to improve our breed of cattle without making a simultaneous movement to procure the succulent food and increased shelter, the extra supply of clover hay, without which the so-called improved breeds certainly produce no improvement to the farmer."

From this, few will be disposed to dissent.

But of a subsequent and more important statement on stock and sheep, no farmer in this neighbourhood, with whom I have conversed, seems to approve. Respecting the Durhams, Devons, and Herefords, he says,—

"Of these three, I think the Herefords are the best for us, and the Devons the next best. The Durhams are evidently and deservedly going out of favour." Now, were the author writing in reference to the particular locality in which he himself resides, his views might possibly be correct; but when, taking a wider range, he asserts, without qualification or limitation of any kind, that "the Durhams are evidently and deservedly going out of favour," it is fair to suppose that he includes, in this sweeping assertion, not only Canada in its widest extent, but the Mother Country likewise.

Of such a declaration, it will, I think, be deemed a sufficient refutation to remind you that the Durham Bull, Cow and Heifer, have for many years, as well individually as in herds, commanded higher prices than any other description of cattle, both on this continent and at home; and when brought into competition with others, still continue to carry off the highest premiums.

The famous short-horned Bull 'Belleville,'

took all the first premiums in England, Ireland and Scotland, in 1850.

The short-horned Bull 'Bamboo,' the property of the Hon. A. F. Nugent, was in 1851, at the Smithfield Cattle Show, awarded the first prize of thirty sovereigns, as the best Bull in his class; a first class Medal, as the best in his section; the Gold Medal, as best of all Bulls; and the Purcell Challenge Cup, *as the best in the Show Yard!* He was a Calf of 1847.

At the same Show, the short-horned Heifer 'Buttercup,' the property of Charles Townly, Esq., was awarded the first prize of ten sovereigns, as the best in her class, and the Gold Medal, *as the best of all Cows or Heifers exhibited at the Show.* The owner of her was likewise presented with a Medal, as the breeder of the best Cow or Heifer.

Again, when Short Horns have been sold in large herds, they have brought higher prices than any other description of cattle in England, Ireland, Scotland, the United States and Canada. Let me instance the sale of the stock of Mr. Vail, of Troy, in June 1851, at which calves of the Durham breed sold for over fifty pounds; even throughout Upper Canada, those that have Short Horns value them so highly that they demand and obtain prices beyond belief for them; as high as fifty pounds has been refused by Wm. Ferguson, Esq., who lives within two miles of the City of Kingston, for a Durham Heifer Calf when it was only nine months old. Thirty-seven pounds were paid last year by the Agricultural Society of the Township of Kingston for a Durham Bull Calf 12 months old; and as for the high prices for which Durham cattle sell in the Mother Country, it were but waste of time to quote what every reader of Agricultural works must be well aware of. Now, if there be any truth in the saying, that "the value of any thing is the price it brings in the market," then it cannot be proved that "the Durhams are evidently and deservedly going out of favour."

SHEEP.

The author of the Prize Essay writes as follows—

"As for sheep, there are none better than are to be found all over the Upper Province. We are not surpassed in any part of England, nor can there be a better sheep for our purposes than the Leicester and Southdown crossed, if only the cross could be kept pure and not too long intermingled. At the late Shows of this Association, there have been sheep submitted to inspection capable of competing with the sheep of any country in the world, whether in weight

of carcass, equality of wool suited to the wants of the country, or excellence of mutton."

The writer appears to me to be greatly mistaken about the weight and quality of our mutton in Upper Canada generally, as compared with what is to be found in the Mother Country.

The best sheep exhibited at our Provincial competition in 1851, were that year's importation from the Mother Country; and the next best were either imported, or the progeny of such as had been imported a few years previously. These were very good sheep unquestionably, but then the number of such in the Province is very small. It is doubtful, however, if there are to be found at this present time on the whole of the North American Continent, two sheep, the weight of whose united carcasses would equal that of some single sheep occasionally to be found in England; such an animal of the Cotswold breed, was that exhibited by Mr. William Cother at the Smithfield Cattle Show in 1851; it was between three and four years old, and the carcass weighed 336 pounds, and that was not the largest of his flock. And again, as respects the quality of the mutton, those who from experience are qualified to give an opinion on the subject, have pronounced in favour of the little black-faced Highland sheep, when fattened on the rich pastures of England, as preferable not only to the Leicester and Cotswold, but to all others.

To suffer ourselves to be misled by random assertions or hasty generalizations, or to flatter ourselves with the belief that we are already, in particular branches of husbandry, quite on a level with the most skilful and advanced in any country, may be gratifying to our vanity, but possibly not equally serviceable to the cause of Agriculture, nor accordant with truth; and it must be confessed that little benefit can be derived from either "Essays" or "Reports," where mere prejudices and opinions are made to supply the place of well ascertained facts.

It will be satisfactory for this meeting to know that the Provincial Association have directed their Secretary to open a Herd and Stud Book; this will prevent the admission of Grade Cattle, into competition with the full bred Short Horns, and will prove beneficial to breeders of Horses and Farmers generally. Up to the present, it had devolved on the Judges, not only to decide respecting the merits of the individual animal, but also the purity of its pedigree. This was wrong, inasmuch as it imposed too great a burden on them, and because the grade is found sometimes to look better than even the full bred.

Now, we may hope that the Directors will take the responsibility, accurately to distinguish

the full bred from the grades, and leave the Judges to merely determine, from the particular points and general appearance of the animal, which is the best.

It would be advisable that the Secretary of this Society, also, should keep a County Herd and Stud Book for Durham Cattle and Blood Horses, so that no animal should pass as full bred, that is not so really; and that the Directors of this Society, at Exhibitions, should be considered accountable for the distinctions of breed; not the Judges.

Our County Show in October last, was highly creditable, both as respects the number and quality of the cattle and productions exhibited, and as no complaints have been heard regarding the manner of conducting it, the prospect is so much better that the next will far excel it.

Judges should always be appointed some weeks prior to the Exhibition, so that if unable to attend, sufficient time may be allowed to appoint others to supply their place; but it can never answer the purpose of a County, much less of the Provincial Association, to leave the appointment of Judges undetermined till the very day on which their services are actively required; and here I may be allowed to remark, that any distrust arising out of the manner of appointing the Judges, would prove more really injurious to any Society than even erroneous decisions on the part of the Judges. The former might wear the appearance of or be interpreted into design to favour particular sections of the country, whilst the latter would be attributed to ignorance and mistake.

When Breeders take the trouble and incur the expense of transporting valuable pure blooded cattle, at no small risk of injury from accidents, it cannot be satisfactory to them to see grade stock brought into competition with them—no proof of pedigree insisted on, perhaps not even demanded—Judges, such as in the haste of the moment can be found, appointed on the spot, the Directors knowing no more of their competency than merely that they are nominated by some one, who not, improbably, knows that they have a very high opinion of the cattle of the very party who thus proposes their appointment. Even in the Provincial Association, (well as it has been conducted in general,) this has been felt, and no Exhibition has yet taken place in the Province, at which there have not been glaring instances of Grade cattle taking premiums as full bred Durhams.

The practice of scraping horns, and of shearing sheep, so as to leave a large portion of wool on them, to increase the bulk or improve the shape, is also practised by some breeders in Canada, yet such a course must justly be looked

upon to be highly disreputable, and should not any longer be suffered.

That breeders should be eager to obtain Premiums, is not to be wondered at, not for the sake of the Premium alone, but because in the sale of their spare stock their success at competitions is a guarantee for high prices. This laudable ambition to maintain a high character for all kinds of stock, is a fertile source of improvement; and under the improved management now about to commence, cannot fail to produce many beneficial results.

It may be thought ungenerous to make some of these remarks, but the whole scheme of the Agricultural organization, as a Provincial Association, and as County and Township Societies, is so noble a design on the part of the people of this Province, and its good working is of so much importance, that every well-wisher of his country should lend a hand to point out, and thereby rectify any abuse, which can be suspected of retarding its growth in the confidence of the country, or diminishing its usefulness in any way whatsoever.

TOWNSHIP OF WOLFE ISLAND AGRICULTURAL SOCIETY.

1851.

RECEIPTS.

	£	s.	d.
Subscriptions, - - - - -	16	15	0
Government Grant, - - - - -	15	0	0
Balance last year, - - - - -	9	13	8
	41	8	8

DISBURSEMENTS

	£	s.	d.
Paid in Premiums, - - - - -	36	19	6
Treasurer and Clerk's Expenses, - - -	1	15	0
Balance in hand, January, 1852, - - -	2	14	2
	41	8	8

In offering a remark or two on the Agriculture of the Township, I can only say that our improvement is but small in comparison with some neighbouring townships; nevertheless, a considerable advance has been made during the past year more especially; the farmers in general having paid better attention to the improvement of their stock and farms, and we have now a fine assortment of horned cattle of several breeds, mostly imported, as well as some excellent native cattle of the country. We have also a very superior kind of sheep to anything I have hitherto seen in the country; but the improvement in Horses is not what I could wish it to be, mainly in consequence of not having a good stallion, otherwise I consider the Township to be in a satisfactory and flourishing condition.

H. O. HITCHCOCK,
President.

Wolfe Island, Feb. 18th, 1852.

The following Townships of the United Counties, have organized under the new Agricultural Statute:—

Township of Kingston;—Loughborough; Amherst Island; Camden; Richmond; Portland; Wolfe Island; and Pittsburgh.

UNITED COUNTIES OF MIDDLESEX AND ELGIN AGRICULTURAL SOCIETY.

To the Board of Agriculture of Upper Canada.

Agreeably to the Statutes cap. 127, 14th and 15th Victoria:

We, the President, Vice-Presidents, and Board of Directors of the Agricultural Society for the United Counties of Middlesex and Elgin, beg leave to report as required by the 7th sec. of the said Act, and refer the Board to the papers marked No. 1—the names of members and amount of their several subscriptions.

No. 2. Prize List or Premiums awarded to animals and various other articles, as well in the spring as in the autumn of the last year.

No. 3. A detailed statement of the receipts and disbursements of the Society during the said year, and also the accompanying Reports received from Township or Branch Societies for the present year.

In making this Report, your Board have to state, that, previous to the present year, only three Branch Societies had been formed, viz., Malahide, St. Thomas, and Adelaide, and from which no Report for the last year has as yet been received. At the same time, it will be proper to remark, that other Townships are taking the advantage of the above recited Act in forming themselves into Township Societies.

Your Board would further remark, that it would have been a matter of gratification to have embodied in this Report a full and accurate statement of the Agricultural statistics of the said United Counties, had it been in the power of the Board to have furnished it, but inasmuch as the Census Commissioner is not yet in the possession of the necessary information, your Board will avail itself at a future time of the liberty of transmitting to the Board of Agriculture as full and correct an account of the Agricultural products of the said United Counties as the said Census Commissioner can furnish, with such further observations as may present themselves to the said Board of Directors.

Your Board would further Report that it is a deep and settled conviction with its several members that Model Agricultural Farms wherever practicable, would be one of the best and most effectual means of increasing true and correct information in the theory and practice:

of Agriculture, and if by any means such a step in each County could be effectually carried out, that the Province generally would be raised in Agricultural information and character, and proportionably benefited, and more especially so if in connexion with the said Farms a good and well selected Library, bearing upon Agricultural pursuits, were associated with the said Farms.

Your Board would further report, that, in order to show the depth and sincerity of this conviction, it has already submitted to the County Council a Plan to be by the said Council submitted to the several Township Councils, to be in turn reported upon by them, and thus a body of correct information on the said subject might be collected to enable the County Council to act with a becoming liberality in providing for the education of those Agricultural students who may be placed upon the said model farms, a copy of which communication is hereunto annexed.

It is further the opinion of your Board of Directors that the Board of Agriculture, in complying with the requirements of the 13th and 14th Victoria, cap. 73, section 12, would confer a lasting benefit upon the Agricultural interests of Canada by following up the above suggestions in an earnest appeal to the Legislature in the coming session of the Provincial Parliament, and to request from the Legislature an enactment making it imperative in the several County Councils to provide for the said Agricultural students, education in part or in whole, and also a proper and well selected Library, and the selection of which to be under the direction of the Professor of Agriculture in the Toronto University.

In conclusion, your Board would beg to suggest that one Model Farm under the direction of the Board of Agriculture would not alone subserve the interest of the whole Province, and, however efficiently managed by the said Board, it would but be a Normal School in the science of Agriculture, to which may be added the inability of a very large proportion of the Agricultural community to sustain the sons and friends of farmers at the Toronto Model Farm. And further, in connexion with the proposed system of Model Farms, your Board would suggest that great and speedy improvement in the quality of the different kinds of stock would result from the Board of Agriculture taking the initiative and responsibility of importing stock, to be by it sold by auction at the Annual Fairs, subject to the conditions under bond of the different animals being required to serve in the County or Counties for years. All of which is respectfully submitted.

Approved in open meeting this 23rd day of March, 1852.

(Signed) JOHN B. ASKIN,
President, &c., &c.

James Farley, Secretary.

To the Municipal Council of the County of Middlesex, in session assembled:

The President of the Agricultural Society of the County of Middlesex has the honour of requesting the permission of laying before you, for your consideration, before the close of your present sittings, a plan which it is proposed to be submitted for approval and countenance throughout this noble county.

It is proposed to establish for the purpose of giving example and of making experiments in the science of Agriculture, a Model Farm, to be the common property of all the inhabitants of the United Counties of Middlesex and Elgin, in perpetuity for the above uses, and all such other uses, as may be conducive to giving encouragement to the pursuit of Agriculture within the same.

Secondly. It is proposed to establish a school in connexion with the said Model Farm, and to be erected on the limits of the same, for the purpose of educating such youths and others, as shall be sent thence, to learn the science of Agriculture, and to be educated in all other branches of education, except the classics.

Thirdly. For the establishment of a Class or Branch, within or in connexion with the said school, so to teach and instruct the student the science of analyzing the various soils, and for ascertaining their properties, with a view to their application, how best they could be adapted to the growth of grain, vegetables, &c.

The first of these will comprise the expense of purchase of at least 100 acres of land, with the buildings that may be found necessary, estimated at say £1500, to be paid for by the Agricultural Society with such means as they may have at their disposal, and such subscriptions as may be contributed therefor by a generous public.

Secondly and thirdly. The expense of education being one of a legitimate character and coming more particularly within the scope and jurisdiction of the authorities vested in Municipal Councils, and being so recognized by law, it is hoped that the Municipal Council of this noble County will not refuse to grant such a sum annually as may be sufficient for the purpose of education only.

And lastly. It is but just and reasonable to hope that the parents of such youths as may be sent to the Model Farm for tuition, will not

think it unreasonable to pay for the board of their children during the time of their tuition at the Model Farm.

The President of the Agricultural Society, with the members who are associated with him, respectfully submit the above plan, in full confidence and hope that their endeavours to elevate the position, character and mind of that class of persons whose pursuits are more immediately connected with Agriculture, may receive at your hands that cordial and hearty support and assistance as a body, comprising the united intelligence, enterprise and energy of this County for the attainment of an object, which has for its purpose the infusion of knowledge, thereby benefitting the rising generation; not only by subscriptions liberally given to carry out, in the fullest extent, the object in view, but also by giving the same same your individual assistance and by taking part in the management thereof; to which you are respectfully invited.

JOHN B. ASKIN,

P. A. Sec'y.

London, 19th Dec., 1851.

The Agriculturist.

TORONTO, AUGUST, 1852.

DONLAN'S FARMERS' FLAX MACHINERY.

We are indebted to Mr. COMMISSIONER WIDDER for a Prospectus, recently issued in England by Mr. Donlan, detailing some highly important and interesting facts relative to an entire new method of preparing flax for manufacturing purposes, without subjecting it to the tedious, expensive, and sometimes uncertain processes of steeping, scutching, or hackling. The following copious extracts will give the reader some idea of the promised advantages, both to England and her Colonies, of this important discovery; and the subjoined extract from a private letter to Mr. Widder, from the Chairman of the *Canada Company* in London, shows the interest which that influential body is taking in the matter as regards Canada. We may therefore expect to see at our approaching Provincial Exhibition, the most improved Flax Machine extant.

Hemp and Flax Growing Patrons are respectfully informed that this is the only discovery ever

made by which Hemp and Flax Growers may find ready and profitable Markets for their respective crops when divested of Seeds, Roots, and Weeds, and without having recourse to the wasteful, tedious, uncertain, and expensive methods of steeping, drying, and mill scutching, hitherto in general use.

Great Britain is annually paying (as near as may be) *nine millions one hundred thousand pounds sterling* for Hemp, Flax, Flax Seed, and Oil Cake, to foreign nations—all of which could be produced in the United Kingdom; and the Inventor respectfully announces, that the produce in fibrous material of at least one million acres, when prepared by his processes, could find ready sale both for Home and Foreign consumption.

There are upwards of one hundred and fifty thousand ships and vessels, including coasters, employed in the service of the British Empire, and not even one of these is now supplied from materials grown within her Majesty's dominions. The Hemp trade is now and has been exclusively, in the hands of foreign powers.

The Right Hon. Sir James Graham, in his Speech upon this subject in Cumberland, stated that we wanted the produce of 700,000 acres for Home Consumption alone, and that our present growth in the United Kingdom did not exceed 150,000 acres annually, and that he would have the plant extensively cultivated in the coming season.

The Right Hon. gentleman mentioned the difficulties of finding a Market for the Flax Straw, but this obstacle would be entirely removed by the adoption of my processes, which will give to the manufacturers a class of cheap, strong, sound, and healthy fibrous substances never hitherto within their control; and also give to the Farmers an additional profit of at least £5 upon every acre under Flax cultivation.

FLAX GROWING IN ENGLAND.

Mr. Samuel Druce, of Ensham, stated to the Council of the Royal Agricultural Society of England, on the 26th of February, 1851, the result of his practical experience in the growth of flax in Oxfordshire, and particularly the results of his last year's crop, which he had drawn out for the information of the members into a balance sheet, of expenditure in cultivation, and realization by sale of produce; he thought this statement would satisfactorily show to them the value of the flax crop, and the attention which, under present circumstances, it appeared to deserve. His property lay on the Oxford clay formation, and the piece of ground on which the trial of cultivation, to which he referred, was made; consisted of a deep red loam, and in extent was 5 acres, 2 roods, 36 perches.

Rent of Land at 48s. per acre.....	£13 14 9
Taxes, at 6s. per acre.....	1 14 4
Flax Seed, 13½ bushels, at 9s.....	6 1 6
One ploughing, at 10s. per acre.....	2 17 3
Sowing and harrowing, at 1s. 6d. per acre	0 8 0
Weeding, at 2s. per acre.....	0 11 5
Pulling Flax, at 14s. per acre.....	4 0 1
Carting and stacking, at 4s. per acre...	2 10 10
Thrashing.....	5 7 1
Winnowing.....	0 12 6
	£36 9 9

SALE OF PRODUCE.

Sale of Flax Seed, 116½ bushels, at 8s..	46 10 0
Sale of Flax Straw, 12 tons, 2 cwt. 2 qrs.	
at £3 per ton.....	36 7 6
Sale of Chaff, at 5s. per acre*.....	1 8 7
	£84 6 1

Leaving a net profit of £47 15s. 9d. on the 5A. 2r. 36. or a trifle more than 5½ acres of land employed in this trial of Flax cultivation; and Mr. Druce concludes by expressing his conviction that Flax is not at all an exhausting crop.

FLAX GROWING IN IRELAND.

I beg to submit the following Report upon the merits of my Saturated Flax Seed:—

Extract from the Monthly Reports for June, 1850, of Mr. John Grennan, Practical Instructor to the Scarriff Union, to the Royal Agricultural Society.

“The Flax Crop, unless when bad seed was sown, (which I am sorry to say was imposed on the farmers in too many instances,) looks well.—The Patent Saturated Seed sent me from London by J. D. Macnamara, Esq., J. P., to have sown on his farm at Ayle, as also with the Rev. Mr. Sheehy, has proved itself superior to the best Riga Seed that could be purchased, sown on the same day, same land and preparations: and should it carry its superiority in the after manufacture of the fibre, I know not its value, as compared with all other kinds of Flax Seed that I know.

(Signed,) JOHN GRENNAN.”

The growth of Flax in Ireland in 1851 has extended to 138,000 acres, average produce 3 tons to the Irish acre, or 414,000 tons of Flax Straw, which at £3 per Ton would reach £1,242,000.—

Eighteen bushels of Flax Seed to the acre at 5s. per bushel would bring £621,000. Money value to the growers should be at least £1,863,000, but I can fearlessly assert that the growers will lose at least one-third of this sum by the common methods of preparation they are driven to adopt.

This quantity of 414,000 Tons would yield one fourth, or 103,500 Tons of available fibre, which at £32 per Ton, the minimum rate offered in the market, would bring £3,312,000, so that the Company established for this Commerce would obtain a scale of interest for their Capital not usually expected from commercial undertakings.—

* The Chaff is underrated, inasmuch as that it is considered preferable, when properly prepared, to light oats for cattle feeding.

Full and detailed accounts are ready for the inspection of those willing to take an interest in this important business; added to this it will open a new source of additional employment annually to thousands of the labouring poor, from which they have hitherto been entirely deprived.

The Earl of Glengall stated in the House of Lords the 26th of March, 1852, that there were 780,000 paupers in the Irish Workhouses last year; that the average deaths were 1000 per week; and that there were 139,000 acres under wheat cultivation in Ireland less in 1850 than in 1847; but much of this state of misery may be relieved by an universal cultivation of Flax.—Emigration and premature deaths have decreased the Irish population to an alarming extent. But suppose, for example, that an equal quantity to the above 414,000 tons (the produce of 1851) were converted by manual labour into 103,500 tons of flax of commerce by my processes, and that the operation could be finished in one year, or forty-eight working weeks, employment could be given to upwards of 71,000 people, at the maximum rate of wages now paid in Ireland, viz:—men one shilling per day, women eightpence per day, and boys and girls sixpence each per day. Thus paying for wages alone upwards of *one million sterling* for the above period—and this exclusive of the employment given in the agricultural departments of the undertaking. I therefore feel confident, that the exalted benevolence, at all times extended by the English nation to worthy objects, will not be wanting in giving relief to a class of human beings suffering by *famine, disease, and premature death.*

The first effective cordage ever yet made from Irish material, has been manufactured from flax produced by J. D. Macnamara, Esq., Justice of the Peace in the County Clare.

Offers have been made by several Hemp and Flax Brokers, in London, for supplies of No. 1—T. H. D. Flax, at the rate of 35s. per cwt. The samples I have sent to the Royal Exhibition have created intense uneasiness in all the foreign hemp and flax-growing nations, and frequent overtures have been made to me for the purchase of my Patent Rights. The Royal Commissioners have requested that these samples should be presented to them for exhibition in their contemplated Museum, with which request I have complied.

What England wants, and what her Farmers have, with careful industry, the power to supply to her, are strong fibrous substances, fit for conversion into the following articles, namely:—

Cordage, standing and running rigging, bolt ropes, lead and log lines, fine twine, twine ordinary, mackerel lines, seine and trawl lines, shrouds, white lines in variety of sizes, whale lines, fishing lines, fishing nets, sail cloths, rain awnings, hatchway covers, seamen's bags, hammock covers, fire engine and watering hose, as well as every other article made from hemp and flax required on ship board.

For inland consumption, packing, cordage, shoe thread, floor cloths, nail bags; corn and flour, coal and coke sacks; railway paulling cloths, waggon covers, cart covers, rick covers,

driving bauds for machinery, bed ticking, coarse and fine towelling, coarse flax and tow sheeting. For tents, drills, and the respective fabrics required for ordnance uses warps for carpets, horse-hair cloths and other cloths, as well as warps for silk and cotton velvets, fustians, corduroys, plushes, and a variety of other uses not here enumerated. There are but few, if any, of these articles supplied from materials produced in Ireland.

Extract of Report—(I have many others)—made upon the strength and merits of the New Sail Cloths, composed of alternate cloths, produced by my processes from Unsteeped Flax Straw, and the Phormium Tenax, or New Zealand Flax, as compared with the best known Manufacture of No. 1 Sail-cloth, made from the long of the finest bleached and prepared Riga Flax:—

Royal Dock Yard, Deptford,
Jan. 12th, 1832.

"A strip 1 inch in width and 2 feet in length of New Zealand Flax, twilled woven Sail Cloth, with a knot in the middle bore, but not at the knot, a weight of lbs. 624

"A ditto of best Scottish-made Canvass, knotted and in every respect similar, 561

"A Strip of Sail Cloth, made from Flax of Irish growth, for 1 inch in width and 2 feet in length, of the substance of No. 1, or heavy Sail Cloth, bore, carried, and broke at a weight of 834

"Memorandum.—In my belief the strongest Canvass ever known, it having actually borne, in the presence of six persons, eight hundred and thirty-four pounds avoirdupois.

"Deptford Dock Yard, J. M."

N. B. The original document, from which this is copied, is signed by Mr. JOHN MORGAN, one of the Inspecting and Surveying Officers of Her Majesty's Dock Yard at Deptford, at the above date.

NOTE.—The chaff from one ton of unsteeped flax straw will average about 12 cwt.; it has been analyzed by Professor Way, who reports generally, that it is superior, in feeding value for cattle, to wheat straw, although perhaps inferior to good barley straw. The chaff from steeped flax is entirely deprived of this important property.

✍ In speaking of the waste of seed the Marquis of Downshire stated to the Royal Belfast Flax Society that on passing for miles through the country they were rolling the flax in the roads, in order that the seeds might be beaten out by horses or cart wheels; and it was quite in vain to draw their attention to the value of the seed, or the loss they sustained by so wasting it.

These respective manufactures do not of course come within the dominion of the agriculturists; but not so the raw material from which they are produced. To prove the merits of the fabrics manufactured, under my superintendence, from unsteeped flax, I beg to subjoin the following Report, made upon a sail composed of alternate

cloths of unsteeped flax and those made from the Phormium Tenax, or New Zealand Flax:—

Woolwich Royal Dockyard, Jan. 11, 1836.

"SIR,—In answer to your letter I beg to state that the foresail made from your preserved cloth has now nearly completed a service of FIVE YEARS, and has, during the whole of that period, been in constant use in every variety of weather; and, although this sail has met with the roughest possible treatment the crew could give it, and has been put by repeatedly in a wet state, with a view to excite mildew, still we possess no power to excite the slightest symptoms of premature decay in your cloth. (I have often been asked its price per yard.)

"I cannot help saying that I am greatly surprised at the extraordinary durability of this sail, and that during the whole period I have been in his Majesty's service (now about twenty-eight years) I have never met with sail cloth capable of bearing the same tests, or that has been the subject of so much curiosity and injury.

(Signed)

"WILLIAM ATKINSON, Master."

"M. J. J. DONLAN, Esq."

This new and important fibrous substance is applicable to all the uses to which Riga, Petersburg, Italian, Hungarian, and all other hemp and flax are now applied. The cultivation of this important produce (from which great Britain and Ireland are now nearly shut out) will open a new article of trade and commerce throughout the United Kingdom; but should the Growers meddle with, or torture the flax straw, by any commonplace Machinery, they will render it quite unfit for the service of Manufacturers. Upon this first process depends the value of the fibre, and if any false step be taken in it, the injury to the farmers will be incalculable, as the material so treated would be rendered unfit for manufacturing into the strong and important articles required for the general service of the country. I am warranted in stating that any offer by persons ignorant of the treatment of unsteeped flax straw to supply farmers with cheap machines for the purpose of reducing the bulk of the material, with the view to find sale for the fibre so produced, would be nothing less than a trap or snare, and pregnant with fraud and deception.

According to the rules which govern the patent laws, "No patent can be taken out for a principle until the party applying has invented some method for carrying the principle into effect; but, having invented this method, the patentee has the power of stopping every other mode of carrying the principle into effect."

The principle and the machinery for extricating the fibres from the stalks without steeping, cracking, or tearing, are my exclusive property. Thirty years of my time and mind, and as many thousand pounds of my money have been employed and absorbed in chemical and mechanical researches connected with flaxen fibrous substances, and if any infractions are committed upon me I shall endeavor to punish the aggressors. Great care has been taken to convey the first

principle of *simple* action to this agricultural machinery, so as to enable the farming labourers to perform the operation with ease, thereby giving the balance of power and division of labour to Great Britain and her Colonies over all the Foreign Nations from whom we now receive supplies of fibrous substances.

M. J. J. DONLAN.

4, St. Peter's Square, Hammersmith.

P. S. To prove the insufficiency of large portions of the Foreign hems and flax imported into Great Britain for the use of the Royal Navy, we have only to refer to the sales of what are called old stores, effected throughout her Majesty's principal Dock yards, when we shall find that hundreds of tons of weak hems, sail cloths, &c. &c., are annually sold as unfit for naval purposes. It must be admitted that calico has, in many instances, displaced fine linens, and that the linen trade has been for some time past suffering severely in consequence. If Foreign powers are now allowed to purchase my discoveries, they will not only still maintain their present monopoly and prevent our becoming a self-supplying nation, but will deprive our growers of those advantages arising from a large export of fibrous substances which I feel confident my inventions will place in their power.—M. J. J. D.

The following Report by the Hon. R. H. Clive, M. P., Member of the Royal Agricultural Society of England, and published in the Mark Lane Express, dated the 10th of May, 1852, will be read with interest by the Landowners, Agriculturists, and Farmers.

FARMERS' FLAX MILL.—The Hon. R. H. Clive, M. P., informed the Council that he had paid a visit by invitation to the works of Mr. Donlan, in the Warwick Road, Kensington, where he had inspected the construction and operation of the Farmers' Flax Machines invented by that gentleman. Having taken with him a sheaf of his own flax straw, from which the seed had been removed, this straw was divided into four equal portions; and three of these being subjected to the action of Mr. Donlan's machines, the result was then submitted by Mr. Clive to the Council. The first portion was the original straw, on which no operation had been performed; the second was the next portion, which had gone through the first, or beating process; the third portion had gone through the beating process, and had also been passed through the double roller press, and undergone the rolling process; the fourth portion had been subjected to all the three processes,—namely, those of beating, rolling, and scraping, and gave the final results of about 25 per cent. of marketable farmers' flax, and about 12½ per cent. of tow. The whole of these machines were constructed in the simplest manner, but with the most exact adaptation of mechanical means for effecting the separation of the woody matter contained in the flax-stalk from the fibre required by the manufacturer; all the weak, imperfect fibres being retained, and only the strong and perfect ones being allowed to pass through. They were not of an expensive character; and could be worked either by men, women, or children, and by one person singly, or by several at the same time; horse, water, or steam-power might also be used, according to circumstances. The whole of the results then submitted to the Council had been attained by one man in the course of twenty minutes. This farmers' flax, produced under favorable conditions of the straw, was valued at £32 per ton, and the tow at about £12 per ton; and for the marketable article thus obtained, the farmer, who under present circumstances

could only dispose of his flax-straw at about £2 or £3 per ton, or not at all, would find in this country and on the continent a ready sale, the ton of straw, by this mechanical operation, yielding farmers' flax of commerce and tow, which together might be estimated at nearly £10; a sum from which would have to be deducted only the very small proportional part of the cost, rent, and wear and tear of the machines employed, and the labour required to work them. The flax, when dry, might be taken at once from the field without stacking, and, after the removal of the seed, was ready, without any other preparation, for this mechanical process, which was alike available to the smallest cottager or the largest occupier, and adapted either for manual labour or the application of machinery worked by any motive-power. He could not but regard this subject as one of great importance to the English farmer; and, as it had often engaged the attention of the Council, whose members had long considered such mechanical aid as this now referred to as a great desideratum, he felt that he was only discharging his duty as one of their body in calling their particular notice to the machines in question; at the same time, as the Council could not collectively deviate from their usual course, by giving any opinion themselves on an invention like the present, he would request a few of the members in their private capacity to accompany him to Mr. Donlan's works at an early convenient day, in order that they might inspect his operations more accurately in detail, and inform themselves of the full bearings of the question in a practical point of view.

N. B. To show the power I maintain over flax stalks, I have taken green flax straw from off the field in the morning, and had it converted into a strong pailing cloth in the evening of the same day. This operation was performed at the Rugely Factory in Staffordshire, in the presence of sixty individuals.

(EXTRACT OF LETTER ADDRESSED TO MR. WIDDER)

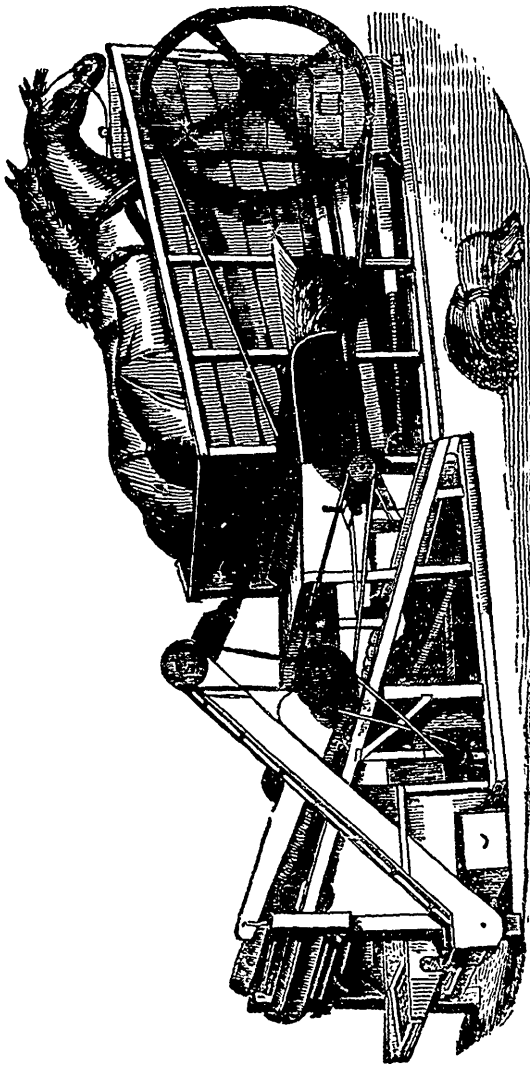
Dated LONDON, 15th June, 1852.

"I send enclosed a prospectus, relating to the Flax machine of Donlan's invention, on the subject of which I have written you before. Mr. Clive's opinion at the foot of it, is the interesting part. We are trying to get into personal communication with Mr. Clive and the Royal Agricultural Society, with a view of getting this machine completed, and if possible of getting the machine itself, or a model of it, to send out to you.—Our inquiries lead us to think the machine could be very cheaply constructed, and might be worked by any kind of power, or by hand, without difficulty. I conclude your object is to bring this subject forward at the Provincial Exhibition in September, and, if possible, we will enable you. Mr. Perry went one day to the place where the machine may be seen at work, and was satisfied by what he saw, that the machinery is simple and effectual, and the flax comes out cleaned perfectly of the straw. He saw it when worked by hand. I enclose also a bit of the flax he saw cleaned.*

* This specimen we have in our possession; the preparatory process seems very complete, and the strength of the fibre quite unimpaired.—[EDITOR.]

ECONOMY OF FARM-POWER.—B. P. Johnson, in his letters from England, in speaking of the skilful farm arrangements of J. J. Mechi, the celebrated English agriculturist, says that by means of an high-pressure engine of six-horse power, he drives a pair of mill stones for grinding feed, threshes and dresses grain, pumps water, cuts chaff, turns the grind-stone, raises the sacks of grain, and the waste steam cooks the food for cattle and swine—the work being all performed in a first rate manner.

PAIGE'S TWO HORSE POWER THRESHING MACHINE.



We present our readers with a cut of this celebrated machine, for the purpose of calling their attention to its merits, and inducing them to think *twice* before spending their money for the great, lumbering, eight horse power machines so much in vogue in some parts of Upper Canada. The writer lately visited the shop of the manufacturer in Montreal, in which he employs over *one hundred* workmen who are engaged solely in the manufacture of these machines. Mr. Paige makes his own castings as well as everything else requisite in their construction; he selects his wood and lumber himself, and seasons it on his own premises; in fact his whole arrangements are the most thorough and complete of any we have seen in Canada, for the manufacture of a single article of this kind. Until this year Mr. Paige has had more orders from Lower Canada than he could supply, and consequently was able to spare but very few machines for this part of the Province. This year he has enlarged his establishment, and as will be seen by his advertisement, has appointed agents in Upper Canada.

We have not seen any of these machines in operation, except on the Fair ground, and cannot therefore speak of their performance from actual observation. But we heard intelligent farmers who *have tried* them, declare that they would not permit any other machine to be put in their barn. One great advantage in their favor is, that they may be put in the barn altogether. There is no difficulty in threshing in *rainy* weather with this machine, for it is so compact that it can be placed on the barn floor under cover. We have heard it objected to this kind of horse power that from the position of the horses when at work, they were liable to become lame, but we are told by those who *have tried* them, that horses will grow fat with constant work, if well fed, and that they are not so liable to be lamed as on the large machines.

The price is \$275 dollars and Mr. Paige agrees to make good without charge any defect of material that may be discovered within a reasonable period. The following is a comparison which he makes between the cost of threshing by his machine, and one of the eight horse-power. If \$11 or even \$5 can be saved in one day's threshing, every farmer will see at once a strong argument in favor of these

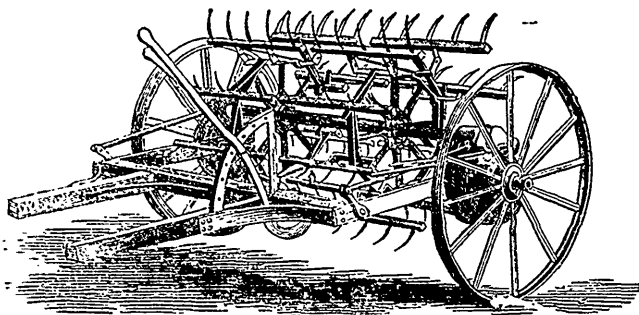
Two Horse Powers. Enquire for this machine if you wish to purchase, and examine it *then for yourself*. This is the best advice we can give.

Relative expenses of an Eight Horse-Power Thrashing Machine and a Two Horse-Power Paige's Thrashing and Cleansing Machine, each Thrashing the same number of bushels:—

Eight Horses at 50 cents,.....	\$4 00
Board for ditto, 25	2 00
Ten Men, at 62½	6 25
Board for ditto 25	2 50
Fanning 200 bush., 1½	3 00
	\$17 75

Two Horses, at 50 cents,	\$1 00
Board for ditto 25	0 50
Five Men at 62½	3 12½
Board for ditto 25	1 25
	\$5 87
Balance in favor of 2 horses,.....	11 88

MCCORMICK'S REAPING AND MOWING MACHINE.—The *Chicago Journal* states that Mr. McCormick has sent out five hundred and eighty-one Reapers and Mowing machines from that city, the present season. One was sent to Germany, one to Alabama, one hundred to "the Jerseys," and one to El Dorado.



SMITH'S DOUBLE-ACTION HAY-MAKER.

We have been prevented giving at an earlier and more seasonable period the above machine, with some excellent practical remarks from a correspondent of the *Cultivator*, on the subject of Hay-making.

The hay spreading, or, as it is sometimes called, "*tedding*" machine, the latest and most improved form is represented in the above cut, has been in use in England for a number of years, and its diffusion over the country has been uninterruptedly progressing. It is drawn by one horse, and by means of the iron teeth attached to a revolving double iron cylinder, grass in the swathe or in windrows, is rapidly and evenly shaken abroad, in a manner far more effectual than by hand. There are several varieties of hay-making machines in use; the first was invented, we believe, by a Mr. Salmon, of Woburn, as far back as 1816. There has been nothing introduced that can compare with this useful implement in securing the greatest economy of time, labor and weather, in the important process of making hay. The price is about £12 or £14 sterling. The Horse-rake, of which we have some good and very economical specimens on this side of the Atlantic, is its necessary appendage. Indeed, the latter article is to us of greater importance, as we seldom experience a tithe of the difficulty in making hay, arising from the dryness of our climate, that they do in the British Islands.

HAY AND FODDER—CUTTING AND CURING.

It may be safely averred that there is not a single operation on a farm that cannot be, and that ought not to be conducted upon scientific principles. Hence the utility, the necessity, of a scientific education of farmers. If the remark be true of farm operations generally, it is more especially so of the subject of hay-making. In this we require a knowledge of vegetable physiology, of chemistry, of pharmacy. Vegetable physiology will teach us the nature and functions of the various organs and parts and juices of the plants with which we have to do; chemistry will teach us the theory, and pharmacy the art, of curing and saving the article in the best manner. There is no doubt that a very large portion of the nutritive matter of hay, and all kinds of fodder, is lost by a want of knowledge of this kind. The writer of this has never seen a hay-field at *haying time*, that he was not forcibly impressed with this truth. To illustrate this subject—suppose a pharmacist, the Shakers, for example, were to gather their medical herbs, and cure them, and house them in the same way that hay and fodder are usually gathered, cured, and saved—what, let us ask, would they be worth? Gathered at very improper seasons, cured in such a manner as to ferment and evaporate all their intrinsic virtues and at last housed in a place, and in a condition, to make assurance of its destruction "doubly sure," it may well be conceived they would not be worth much. There are certain rules to be observed in this, as in all things, to attain the highest degree of perfection. Every kind of hay and fodder will be good or good for nothing, according to the degree of attention to these rules. The grass should be allowed to attain the highest degree of perfection before it is cut, and that degree is found to be at the time of *flowering* or *blooming*, just before the seed begins to form.

It being a *herbaceous* plant, the whole natural object of it is to make seed, and all its juices are, at the time of flowering, in their richest state. This is the time to cut it. If cut before this time, the juices are imperfect, and the fibrous matter immature; and if delayed beyond this time, more or less of the richness of these juices is expended in making the seed. If the seed is allowed to become ripe, the hay is comparatively worthless. We never saw a load of hay in the market for sale that did not exhibit unequivocal signs of having had a very large portion of its rich qualities exhausted, either before it was cut, or in curing. When it is understood, that if allowed to ripen seed perfectly, the grass loses all its rich juices, and becomes mere dry straw—woody fibre, a little silicate of potash, and a very trifling quantity of vegetable extractive matter, the importance of cutting it at the right time will be apparent.

And here it is proper to mention another error of almost, if not quite equal importance. It is that of mixing different kinds of grass together. There are scarcely any two grasses that flower at the same time, exactly, and if two be mixed that flower at different times, one or the other will be greatly deteriorated by being cut too soon or too late. All grasses should, therefore, be kept in distinct meadows.

The curing process is, however, of much the most importance. No matter at what times the grass be cut, if it be not properly cured, the hay will be worthless, in proportion to this imperfection. Two tons of hay shall be taken from the same field, the one cured properly, the other carelessly—and the one shall be worth twenty dollars, while the other will be dear at any price, except for mere straw. Let us descend to particulars, for the subject is sufficiently important to authorise it. Nearly the whole nutritious properties of the hay are in a fluid, or semi-fluid state, highly susceptible of fermentation; and if fermentation takes place, they will be immediately dissipated in vapor. The object to be attained is to cure the hay, by evaporating the water only, of these juices, leaving the saccharine and other principles in a solid state in the body of the grass. But if the juices of the grass be allowed to ferment, then all these principles are rapidly changed, and pass off with the water in vapor. The usual method of curing hay, especially in the middle States, permits the green cut hay to lay in masses till it gets more or less heated, especially the under portion of it. This heat is produced by fermentation. We usually see the hay in the swathe till the next day, and then it is merely turned over, and even that very carefully. The underside will then be found to be very warm. Now, all this is wrong. The hay should be shaken up lightly, and loosely, so that none of it will lay in compact masses, and that the air may pass freely through it. It should be gathered into windrows as late as possible in the evening, and these should be well opened and turned, and loosened, early in the morning, so as to avoid spontaneous fermentation. If the weather be fair, the hay cut yesterday will be fit for cocking this afternoon, but it is not ready for housing or stacking. A great error is often committed in cocking hay, in allowing it to remain in these small stacks too long. When cocked, the hay is merely wilted, not cured, and if allowed to remain in racks, will ferment there. They should be opened and spread about, and re-cocked several times before being permanently stacked or housed. Shaking hay about has a great effect in curing it, much more than is supposed. It exposes it to fresh air which carries off the water, and the oftener it is shaken up, the sooner and better it will be cured. Many object to shaking up the hay while the dew is on it in the morning. This is an error. A good shaking at that time, will effectually dry it.

BOOK NOTICES.

A RETROSPECTIVE GLANCE AT THE PROGRESSIVE STATE OF THE NATURAL HISTORY SOCIETY OF MONTREAL, being a Lecture delivered before the Society, March 31st, 1852, by Major R. Lachlan. Published by J. C. Becket, Montreal, at the desire of the Society.

This is an interesting lecture; embracing the rise and history of the Institution, in which it was delivered. The Montreal Society, like most of its allies, does not appear to have run an uninterrupted course of prosperity; but it has doubtless exerted no small influence for good, in awakening attention to the many interesting and useful objects of science, which it seeks to promote. Major Lachlan's lecture does not easily admit of extracts, even did our space permit. It must be read as a whole; a task that will be amply compensated by such as feel interest in the prosperity of popular scientific institutions, and the social and intellectual improvement of society; and we are happy to hear that the Major's praiseworthy exertions have already, in this instance, been attended with considerable success.

THE ANGLO AMERICAN MAGAZINE,—Monthly, \$3 per annum. Toronto: T. Maclear.

We have only room just to mention the appearance of the second number of this exceedingly well got up periodical, which, judging from the first number, bids fair to become popular and useful among all classes of the community. Our readers should order it and judge of its merits for themselves.

WATER FROZEN BY BOILING.—The following beautiful experiment may easily be performed by any one having an air-pump, and cannot fail being exceedingly interesting to those who take delight in the science of chemistry. Take a small thin glass jar, fill it half full of wood ether, then place it within another jar half filled with water. Let this be then placed under the receiver of an air-pump; and as soon as the air is exhausted, the ether will boil and the water will freeze. The reason is that when the pressure of the atmosphere is removed by the air-pump from the surface of the ether, its own latent caloric occasions its expansion, and absorbing caloric from the water, it becomes converted into gas; and the water having now lost all its caloric of fluidity is converted into ice.

PEAT CHARCOAL IN THE UNITED STATES.—In the agricultural section of the report issued from the United States Patent-office, we find the following testimony to the merits of peat charcoal, given by an intelligent farmer, S. B. Beckett, of Portland:—"Pulverised peat charcoal (a new article) I am disposed to believe will be found to be a most excellent fertiliser, especially composted with other manures. It is a perfect deodorizer; rendering human excreta and the most offensive offal entirely scentless, as I have ascertained from frequent experiments. Hence its discovery will prove of great service to the world in a sanitary point of view, as well as for its fertilising qualities; and I am happy to add, that a large manufactory of the article is just going into operation in our vicinity."—*The Artizan*.

IMPROVED BREEDS OF CATTLE.

To the Editor of the Canadian Agriculturist.

Sir,—It was not my intention to trouble you again upon the cattle question; but from circumstances that have occurred I feel induced to write you.

I will take your advice, (I wish it had been given and acted upon previous to your last number,) write briefly, and avoid offensive personality. Mr. Parsons, in your July number of 1851, in its leading article states, you had satisfactorily answered my query, by saying that Durham cattle deserved a preference, because they were more numerous. I will prove they are also the most numerous in England; and it shall be a bold man who will contend they are more suited for the climate and pastures of Canada than England. I will state from the *Agriculturist* the number of cattle exhibited at the last Agricultural Show, at Windsor,—

Short Horns, Bulls, Cows, and Heifers,	176
Herefords, do do do	41
Devons, do do do	74

These are the old breeds, each of which are allowed the same grant of money. Now, Sir, do you think if a preference was shown to the Short Horns because they are the larger quantity, the breeders of Herefords and Devons would be at the trouble and expense of exhibiting their cattle? I see no account in the *Agriculturist*, of the relative quantity of cattle at the Brockville and Rochester Shows; I must therefore refer to the *Colonist* and the *Genesee Farmer*: the former paper says, "cattle, nothing extraordinary;" "a number of fine Devonshires, and these seemed to be getting greater favorites with the Farmers than the Durhams, which did not seem to be so much prized as formerly."—The *Genesee Farmer* tells us there were 700 head of cattle at Rochester, more than half of which were Devons! I account for the increase of this breed from the farmers in New York State having paid great attention to the Dairy. There are some superior Durhams and Herefords bred in that State; but do you suppose the breeders of them would send their stock again for competition if the managers gave a preference to Devons because they were the greater number?

The Short Horns have quite enough favor in this Province by allowing grades of all breeds to be shewn together. Judges, in my humble opinion, do not generally take into consideration the cost of feeding a large animal. It appears that in the coming Show, at Toronto, the Short Horn class has 16 more prizes than Herefords, Devons, or Ayrshires: the latter are not allowed awards, in England, anything equal to the older breeds; but I have no doubt they will be found

a valuable Stock here, and worthy of as much encouragement as Durhams. It must be borne in mind, the greater part of the farmers in Canada are such by accident, scarcely knowing how to make a good fallow, or a proper rotation of crops, much less the properties of the different breeds of cattle and sheep. The time was that farmers ought, the time is that farmers must, if they wish to prosper, attend more to the breeding and management of Stock. I therefore think Mr. Parsons' letter, in your widely read publication, likely to do harm. This gentleman pleads specially—assumes much, but proves nothing more than that you had given me my *quietus* in a brief editorial notice. Mr. Sotham may not have been very courteous to Mr. Parsons, but when it is considered Mr. P. endeavored to disparage a breed of animals, second to none in Great Britain, and which have been patronized and imported by the former, some allowance may be made for that. I do hope the Hereford breed may be more known in this country: I can only say I have seen better grade oxen from a Hereford Bull the property of Mr. Wm. Puddicombe, than I ever did either of Durham or Devon.—I hope one of your correspondents will ask why Down Sheep are to have more premiums than Leicester's? There can be no question but the Directors wish to act for the best interests of all, but they may be injudiciously advised.

I observe our worthy and talented Secretary, Mr. Harland, states, that the sheep about Guelph are much deteriorated by breeding from Down and Leicesters. It will be remembered in my last letter I said it would be as inexpedient to breed from Durham and Native cattle, after the first cross, as half-bred Down and Leicester sheep: and I have no doubt when Mr. Harland favors us with another essay, he will say we have some fine thorough-bred Durhams in the neighborhood; but by an injudicious system in breeding from grades, especially grade bulls,—a great portion of our cattle are neither fit for the dairy, yoke, nor grazier.

Yours, dear sir,

Very truly,

DANIEL TYE.

Wilmot, July 9, 1851.

[The principle on which the Directors have hitherto offered more prizes in the Durham Class than any other, viz., their much superior numbers and consequently greater competition, is one of those many subjects which admit of a difference of opinion. In the premium list for the present year, 40 prizes are offered in the Durham class, and 24 in the classes of Devons, Herefords, and Ayrshires respectively. The

difference is certainly great; but so has been the relative numbers of the breeds at our previous Exhibitions, as the following table, compiled from the Secretary's books, shows.

Total number of animals exhibited:—

	Durhams.	Devons.	Ayrshire.	Hereford.
Kingston, 1849,...	54	9	12	0
Niagara, 1850,....	65	18	18	0
Brockville, 1851,..	40	23	28	0

The difference with respect to Leicester and Southdown sheep, alluded to by our correspondent, was an error in the first impression of the Prize list, as published in the *Agriculturist*, and has been subsequently corrected.

We like much the spirit of candour which pervades Mr. Tye's communication, and trust it will give a better tone to the manner of conducting this controversy.

EXPERIMENTAL AGRICULTURE.

(To the Editor of the *Agriculturist*.)

SIR,—By the permission of Capt. W. Rhodes, President of the Quebec Agricultural Society, and a Director of the Lower Canada Agricultural Society, I have much pleasure in laying before you his very interesting statement.

I visited the farm with a view to observe the result of some experiments with the refuse lime and ammoniacal liquor of Gas Works. The use of these fertilizers has been highly spoken of by scientific and practical agriculturists, both in this country and in Europe. The difference in height and color between oats that had been top-dressed with the liquor and those which had not was surprising. Potatoes to which it had been applied were met in the drills, whilst those that received none, were pale and stunted. Its effect on grass was very beneficial.

The land, as is said, can never grow heavy crops, except of grass. This is uniformly the case where soil principally consists of argillite, or disintegrated clay—slate or shale. Cape Diamond, on which Quebec is built, is a mass of this rock, having as its concomitants, at short distances, a blue limestone fit for burning, and a highly crystalline variety well adapted for building.

A great difference in the texture and mechanical composition of soils is exhibited here in many acres.

I will reserve the details of the method for mixing the compost and the use of the liquid, with other matters, for a subsequent communication.

I am, respectfully yours,

A. KIRKWOOD.

Quebec, July 13th, 1852.

Benmore, July 12th, 1852.

SIR,—With reference to the queries enclosed—Four years ago my farm, 60 acres, was able

to feed two cows and two horses, and nothing else; the land was then either in wood or swamp in fact uncultivated: we now feed four horses and eleven head of cattle, besides grazing during the summer six pigs; of my farm about seven acres still remain uncultivated. My land being a poor shale, can never grow heavy crops except of grass. The compost cost me per load ready to deliver to the land, about one shilling. I do not pay for it more than six pence per load, because I employ my own horses in Winter, when there is nothing for them to do; but valuing their labor at five shillings per diem, it would cost one shilling the load. Manure from town, when ready to go on the land, costs at least 5s. per load, and the question I have to determine is whether five loads of compost are equal or superior to one load of manure? A top-dressing of 50 loads of compost, when compared with ten loads of manure speaks for itself. All that can be done by Farmers in Lower Canada is to increase the manure heaps. I generally make about 600 loads of compost or manure; this must tell on a small farm in a few years; the Peat does not absolutely require gas lime and gas liquor.—I use them because it is the cheapest stuff I can buy. The Peat *must* be turned over at least once during the course of the summer, or else you cannot use it that year.

Clearing the land you allude to, which was very untractable, being full of green roots and boulder stones, also very wet, cost me about £6 per acre for clearing and grubbing, and £7 an acre for draining, the drains were 20 feet apart, four feet deep, and eighteen inches of broken stones are placed over the pipes. I place stones over my pipes because they are on the surface, it is both better and more convenient for me to dispose of them this way, — I say better because the drains draw the water away from the surface so much quicker; if I had not stones, I should place branches over the pipes. I place a few ferns over them to prevent the stones injuring or cracking the pipes when they are being laid. The piece of land in question will be very fine, at present it is growing a fair crop, but nothing to what it will grow when it feels the effect of cultivation. No price can be placed on the first ploughing of land full of green roots and stones, if you are lucky, by doing a little bit at a time you may get it finished, at about four dollars the acre. No plough could well have stood such work except one of iron, we broke a wooden plough all to pieces. Old oxen and old ploughmen and a very strong new iron plough ought to have been used. I use horses as there are no oxen in my neighbourhood.

Inch pipes cost on board ship in England four dollars the thousand feet, and the price varies; this year the pipes are much cheaper. Six dollars a thousand would pay well to a merchant at Quebec. I have never seen the one inch pipe laid down at such distances and for such a length (two acres) full of water. I, therefore, conclude one such is quite sufficient. I have watched my pipes now for two summers. My farm is situated in a Government Seignior, the cost of purchase placing it in free and common socage amounted

to £25 per acre, to this I add £15 per acre for fencing, grubbing, road making, draining, and the cost of 3,000 loads of compost which I have spread over it.

I have been offered £100 an acre for some of my land, and I value my farm at £50 an acre,—but I would not take that for it, even if I wanted to sell.

Land such as mine was, can be bought for £3 an acre; and can be put, including buildings, into equally good order for about £20 an acre. On such a farm a man could pay a rent of £1 an acre and prosper. My land cost more money in the first instance, owing to its being situated on the banks of the St. Lawrence near Quebec. On my farm we live well and pay our expenses; but the profit, if any, is small; the convenience, comfort, and economy of a farm, are, however, great.

A well conducted Farm, near Quebec, is of advantage to a gentleman, so long as he can consume all he produces; but when he is obliged to send his produce to market, the expenses take away the profit.

Your Obedient Serv't,

W. RHODES.

Mr. A. KIRKWOOD.

[We are obliged to Mr. Kirkwood for the above interesting communication, and shall be glad to hear from him again. Captain Rhode's farming must operate beneficially as an example in his neighborhood. Inch pipes for draining are considered large enough in England; but when any considerable quantity of water has to be conveyed away, a larger diameter would be necessary. Importing draining pipes from England reads somewhat strange to us Upper Canadians. We hope soon to see everywhere, proper machines in operation for producing this important article, at the lowest cost.]

REAPING AND MOWING MACHINES.

We have much pleasure in being able to state that *Hussey's Reaper* is being manufactured in Canada, by Mr. John Helm of Port Hope, who has them for sale, embracing all the improvements effected during the last two years. *Hussey's Reaper* has now taken a first rate position in England; subjoined is an extract from a recent English paper in reference thereto. We also learn that Mr. Helm is manufacturing *Ketchum's Mowing Machine*, an article of almost indispensable importance, and we take the liberty of publishing a letter on the trial of the Implement, which we received a few days since from Mr. John Wade, who, as many of our readers well know, is an experienced judge in such matters.

HAMILTON GARDENS.

Port Hope, July 5th, 1852.

DEAR SIR:

I have been trying Ketchum's Mowing Machine to-day, and have much pleasure in saying it works admirably. I am cutting clover very

heavy and much laid down, consequently have to cut it one way and return empty, which is a loss of half the time; but even then I can cut five or six acres a day. You are aware that laid down clover is very bad to mow, but the machine cuts it as level as a lawn, when you meet it. Mr. Helm of Port Hope is making them, and has started three already, and has three or four more bespoke. Ketchum's establishment is in Buffalo, should any of your friends be enquiring, and they can be obtained there any time—price \$100 at the factory; Helm sells his at the same price on this side, and of course duty, freight, &c., is saved, but he cannot get up this season any more than are engaged in time for this year's work. I assure you I feel quite delighted that it operates so well, for mowers are worse to get this season than ever I knew them to be.

I remain, dear sir,

Yours, truly,

JOHN WADE.

Mr. George Buckland.

HUSSEY'S AMERICAN CHAMPION REAPING MACHINE.—The advantages to agriculture by the use of this machine have again been exemplified. On Thursday last, the 27th ult., a "Reaper" from the well known establishment of Mr. Wm. Crosskill, iron works, Beverly (and under the superintendence of Mr. T. W. Naylor), was exhibited before a small party of influential agriculturists, upon the farm of Mr. Richard Scott, at Ranskill. The crop upon which the machine was tested was a piece of rye standing about 3 feet 6 inches high, a part of which had been cut green for horses, and the remaining part being in the same green state caused a difficulty which some parties thought would be fatal to the experiment, but those impressions soon vanished. The "Reaper" was quickly in readiness and started. It progressed in such a manner as to bid defiance to all the impediments which had presented themselves, and proceeded without any difficulty, cutting down the whole of the crop remaining in an efficient manner; the stubble was left perfectly even; and the rapidity with which the corn fell before the effective knives of the "Champion" caused much astonishment and satisfaction to the agriculturists present. After this experiment Mr. N. was requested to try it upon clover, which was immediately acceded to, and the machine was conveyed to an adjoining field. The crop, from the late and unfavorable season, did not present that amount of resistance to the knives which is necessary for its effectiveness. One portion, however, rather stronger than the rest, was selected, and the machine proceeded upon its course without the least impediment, cutting down the clover in a speedy and effective manner, and quite close to the ground. The most perfect satisfaction was expressed by the agriculturists present, with this, as well as the former experiment. Arrangements are in progress for a public trial in the neighbourhood, of which we shall be able to give our agricultural readers due notice, and we have but little doubt it will meet that patronage which the importance of the machine deserves.—*Doncaster Gazette*.

NEAT CATTLE.

From Luthrop's Farmers' Library.

HOOF AIL.—Cause of the disease is not well known. The feet become diseased, and then they are frozen during the course of the winter, after which they are of no value except for their skins. Feeding them with plants of rich food, and keeping them well littered in warm stables, is thought to be the most profitable and effectual method of avoiding this disorder.

HORN DISTEMPER, subjects them to a wasting of the pith of the horn. It is sometimes in one horn only, and sometimes in both. Indications of the disease are coldness of the horn, dullness of the eyes, sluggishness, want of appetite, and a disposition to lie down. Where the brain is affected, the animal will toss its head, groan, and exhibit indications of great pain. *Cure*: bore a hole with a small gimlet in the lower side of the horn, about an inch from the head, and the corrupted matter in the horn will run out. If this does not complete the cure, Mr. Dean directs that the horn have a mixture of rum, honey, myrrh, and aloes thrown into it with a syringe; and that this be repeated till a cure be effected.

TAIL SICKNESS.—Cause, generally poor keeping. The cure is effected by cutting off a small piece of the tail, which will be attended with a small discharge of blood; or when the hollow part is near the end, cut a slit in it one or two inches long and this will effect a cure.

GRIPES OR COLIC.—When attacked with it, they lie down and rise up incessantly, and stick their horns against any object that presents. It is attended with either costiveness or scouring. In the former case, they are to be treated with purgatives, and in the latter, with astringents. To stop the purging, give them half a pint of olive oil sweetened with sugar; or a quart of ale, mixed with a few drops of laudanum, and two or three ounces of oil of sweet almonds. To promote purging, give them five or six drachms of fine Barbadoes' aloes, and half a pint of brandy, mixed with two quarts of water gruel, in a lukewarm state. In either case, speedy attention to the beast is necessary, in order to prevent an inflammation of the intestines, which must prove fatal.

SCOURING SYMPTOMS.—Frequent discharge of slimy excrement, loss of appetite, loss of flesh, increasing paleness of the eyes, and general debility. *Cure*: The beast should be immediately housed, and put to dry food; and this in the early stage of the disease will generally effect a cure. Should this fail, it is directed by the same author to boil a pound of mutton suet in three quarts of milk, till the former is dissolved, and give it to the beast in a lukewarm state; or in obstinate cases, boil half a pound of powdered chalk in two quarts of water, till it is reduced to three pints; add four ounces of hartshorn shavings, one of cassia, and stir the whole together; when cold, add a pint of lime water and two drachms of tincture of opium; keep the whole in a corked bottle, and after shaking it before using, give one or two horns full two or

three times a day, as the nature of the case may require. Sometimes, however, this disease proves incurable.

HOVEN.—Occasioned by eating too much when turned into rich pastures, by swallowing potatoes, or other roots without sufficient chewing, and to other causes. The stomach of the animal becomes distended with wind, and if a vent for this cannot be afforded, the beast must die. *Remedy.*—Open a hole with a sharp pointed knife, with a blade three or four inches long, between the hip and short ribs, where the swelling rises highest, and insert a small tube in the orifice, till the wind ceases to be troublesome. The wound will soon heal up again. Mr. Young recommends for curing the complaint, to take three-fourths of a pint of olive oil, and a pint of melted butter or hog's lard, and pour this mixture down the throat of the beast; and if no favourable change be produced in a quarter of an hour, repeat the dose. For sheep, about a gill should in like manner be given, and the dose repeated if necessary. This, he says, will not fail of a cure in half an hour. To prevent this disorder, cattle should not be turned at first with empty stomachs into rich pastures; nor should they be allowed to feed on potatoes, and some other roots, without their first being cut into pieces.

STEAM FOR AGRICULTURAL PURPOSES.

It is somewhat difficult to estimate the power of steam-engines. They are usually classed by their horse power, as four-horse or six-horse engines. It is a better way, however, to state the diameter of the cylinder. In England, a diameter of 10½ inches is usually rated at 8 horses; in Scotland, with some of the best machinists, at 6 horses. Thus an eight-horse engine in England is only rated at six horses in Scotland. The price of a moveable steam-engine of eight-horse English, 6 Scotch, is about £240. In Scotland a 4 horse fixed high pressure engine can be obtained for about £60, or one of 10 inches diameter (or 6 Scotch) for £80. Thus the original expense of the portable and fixed engine is widely different, the one being *three times* the other. During a lease a fixed high pressure will cost almost nothing for repairs, if properly attended to, and will at the end be worth more than half price. In the portable engine the term of boiler is extremely liable to accidents, and the whole machine often requires repairs. From the construction of the boiler in particular, these repairs must necessarily be expensive, and few of these portable engines will be serviceable in ten years. Upon railways the repairs and renewals of the engines form a serious item in the working expenses, and the boiler—the essential part in these portable engines being upon the same principle—is liable to the same wear and tear. When a portable engine is placed in a field, of course the water and coal must be brought to the engine. In a fixed engine the well for the water is made at the time of erecting the engine, and the coals are put into a coal-house near the engine—of course they have to be drawn from the coal hill, but there is

no necessity for carting the water to a fixed engine. In our opinion the disadvantages far more than counterbalance any advantages which portable engines may possess over fixed engines.—We may point out a difference greatly in favour of our fixed engine, but more appreciable, perhaps by a practical engineer. In the moveable engines, a high pressure is invariably used, to compensate for the smallness of their cylinder, generally not under 50lbs to the inch, while in the fixed, it seldom if ever exceeds 30, and is generally about 25. The risk of accident in the former is thus increased, and above all, the tear and wear of the boiler. If portable engines could once be employed as the common motive power of the farm, the case would, of course be altogether different. At present, however, there can be no hesitation in giving the first place to the fixed engine for thrashing. It is worthy of remark that in almost every other case where steam power can be applied in a fixed form, it is always employed.—*North British Agriculturist*.

THE GALWAY CATTLE SHOW.

We learn from our excellent cotemporary, *The Irish Farmers' Gazette*, that an extensive exhibition of Agricultural products is about to take place in this part of Ireland. The premium list is liberal and comprehensive, particularly as regards Cattle, and a keen competition is expected both from England and Scotland. The following remarks of the *Gazette*, will be perused with interest by many of our readers:—

“That the Galway agricultural gathering will create considerable interest, not only in Ireland, but in England and Scotland also, may be surely calculated upon, not only on account of the merit of the show itself, but because the season of the year will be admirably adapted to show, in luxuriance and grandeur, a large tract of the most picturesque scenery which can be well met with—we allude to the scenery of Connemara. The cheap trips furnished by the railways will enable tourists to run down to Galway to see the agricultural gathering in August, and, in a few days more, to view the romantic, the wild, and the beautiful scenery of the highlands and Ireland; while, to the tenantry of England and Scotland who are looking out for better land than they presently possess, at half the rent they at present pay, the railway to Galway, and the very cheap car travelling of the country, will enable such, in the course of ten days, to examine many thousand acres of land which are well worthy of their careful inspection. Now is the time for the British tenantry to take farms in Ireland—to invest their capital with a certainty of a good return. The country is quiet, agricultural enterprise is on the increase—the habits of the laborers are improving—rents are not the half of what is paid for equal quality of ground in England—and, though last, not least, local markets are as good throughout Ireland, in the average, as they are in Britain, for the best paying portion of agri-

cultural produce. We hope—we think, the Galway show will tend greatly to introduce increased spirit and agricultural improvement in the west of Ireland—namely, by inviting Scotch and English farmers over to see and accept the great natural capabilities of this highly improvable country.”

STRAW AS A COVERING.

Clean straw is an excellent covering for many things; thousands on thousands of sea kale in frames or under hoops have no other blanching material; and how clean they grow in it! Rhubarb, in winter forcing and early spring, grows beautifully pinky. It is well known that early spring frosts destroy Rhubarb; but if a six inch layer of straw is put on every crown, as the heads put up, they raise the straw with them, and it not only gives the stalks a better colour, and makes them less “stringy,” but it keeps the leaves from growing too large. No wind will blow it off, nor will the most intense frost injure the plants. Straw should not be looked on as a mere litter; it is as good as a frame upon a large scale. What sort of eatable strawberries would we have without straw? In summer, every crop, such as gooseberries, currants, and many other things, should have the protection of straw, which keeps the sun from drying up the surface, and the surface roots damp and cool, while all weeds are kept down. Market gardeners use it for their frames—it matters not whether for cucumbers, melons, or potatoes, straw is their covering—and their crops are more secure than when “protected” by a thin mat. But some may object to the use of straw, on account of the litter it makes in a garden; but if any of those who object to its use for this reason, will just take a peep into Covent Garden market at any season, they cannot fail to be struck with the quality of the produce, in the raising of which straw plays an important part. Straw is also the best of all manures for a strong retentive soil, when it is dug in fresh, as it decays and leaves innumerable worm-like holes which act as drains for the roots.—*English Paper*.

SCIENCE AND AGRICULTURE.

The following extract from the Report of the Council of the *Royal Agricultural Society of England*, at their general meeting in May last, will be read with interest:

“The Chemical investigations instituted by the Society are in a state of active and favorable progress in the laboratory of Professor Way, the Consulting Chemist to the Society; who has already this season delivered before the members two interesting lectures on the peculiar agency of certain soils in promoting the supply of manuring matter as food to plants, and on the light thrown by the agricultural principles established more than a century ago by the celebrated Jethro Tull, on practical results obtained at the present day under certain conditions of soil and culture. Mr. Trimmer, the author of Society’s prize essay

on agricultural geology, has also favored the members with a lecture on the geological distribution of soils throughout the country; a subject of much practical importance to the farmer who is desirous at any time of transferring analogically the system of one district to another locality identical with it in the circumstance of soil; a result not always to be inferred from the ordinary geological maps, in which the rocks or subsoils are represented in their denuded state, and irrespectively of the actual drift or soil that may happen, from various causes, to rest upon their strata.

The Council are aware of the great caution required in the application of science to the practice of agriculture; and of the guarded manner in which any new or striking facts of cultivation ought to be enunciated, in order that the particular circumstances of their occurrence may be most clearly defined. These circumstances they conceive must be accurately understood by the farmer before he can safely transfer to his own locality a mode of management that may have been adopted with success elsewhere. Science, so called, can only mislead, when its quality is unsound, or its application erroneous; sound science, indeed, consisting only of principles derived immediately from facts; which principles, when duly applied to practice, constitute an art of any kind; and this art, whether that of agriculture or any other branch of industry, is only to be perfected by the application of improved principles, whether these be accidentally discovered or ascertained by direct investigation. The Council feel how much the modification or establishment of such principles of improvement depend on the extended practical observation and actual test of their members; and while they are most desirous on the one hand to aid in their legitimate development, they are most anxious on the other to prevent their hasty adoption. The really best practice in agriculture always includes as its prime mover the best science; but it is only by obtaining the distinct knowledge of such included science that the conditions can be ascertained under which the practice itself may be transferred successfully to other circumstances; and the Council, in endeavoring to carry out that union of "practice with science," which has become the well known motto of the Society, invite from its members such communications of successful instances of management or cultivation, as will either at once become models for adoption, or serve by comparison with other results, to modify the character and extent of the deductions to be drawn from them. With such practical aid, the Council feel assured that the Society will continue to proceed in its steady course of public usefulness, gradually developing those national objects for which it was originally established."

THE WEEVIL, &c.

SYDNEY, BELLEVILLE, July 13, 1852.

To the Editor of the Canadian Agriculturist:

DEAR SIR:—I send you a late head of Hutcherson wheat very much affected with the weevil—

a little orange maggot, from a fly blow deposited as I described in my report. They are numerous in this County in late wheat—*very* numerous in later, and *very, very* numerous in the latest. I should say that very probably one half (certainly one-third) of the whole wheat of this County is destroyed by this weevil. I saw the fly about the first of this month, almost forming a little cloud and proceeding *westward*. It will be in Murray and Sydenham this season, and will proceed westward from seven to nine miles each year. The only remedy I can perceive as yet is *very early* sowing on very early ground, well drained, of very early kinds of grain. I have four fields of wheat—in the *earliest* there is little or none except where there was aftergrowth, but it becomes worse in each field in proportion to its lateness either in whole or in spots. Perhaps through your valuable journal you will be able to hurry the farmers west of us in their preparations for wheat sowing, and thus do a world of good, as the progress of the weevil is as certain as the progress of time itself, and how great a scourge it is—few of our brother farmers in the west are aware. The Sole and Hutcherson wheat appear to be the earliest and will be ready for harvest with me and around me, on the 22nd of July, which is early for this season. I cannot say exactly *why* the earliest wheat is the safest but I daresay nature provides that the fly comes to its natural strength at the *usual* time for wheat to blossom—and if the wheat be *earlier than usual* the grain is too forward to nourish its deposit. This year the coldness of the season retarded the *animal* creation probably more than it did the *vegetable* creation, and this may be another reason why the fly was too late for early sown wheats.

"I do not mean to reply to Mr. Wade as he corroborates my opinion when he says 'the man who would go to the expense of procuring improved Stock without intending to keep them properly must be a fool.'" This is all I contend for. Let people grow more Turnips and Clover if they mean to have improved Cattle. I fear his Durhams would not be in good condition after a winter's "browze" on Bass wood branches—with a fork full of dry straw at night and morning in a cold open yard as an auxiliary—our natives are so. Mr. Wade does not I think intend to discourage farmers from growing green crops and making more comfortable sheds and houses, all I contend for is that these improvements should be simultaneous with the introduction of the breeds called "improved"—but which are certainly not "improved" unless better fed and housed than our common cattle. If Mr. Wade be of a different opinion, by-and-by we shall not wonder to hear of a *second* Mr. Wade advising the *Hiabitus* to get rid of their *hardy* ponies and substitute *Bloods* before they have the extra hay, oats, stabling, &c., required for those "*improved* animals."

Yours, &c.,

WILLIAM HUTTON.

We received a subsequent communication from our respected correspondent, on the devastating

progress of the weevil, which we publish below. The scourge is evidently moving westward, and our readers will have time this season to adopt some of our correspondent's suggestions, with a view to prevention. The specimens sent us afford striking evidence of the destructive influence of this insect. We shall be happy to receive information on this subject from experienced parties residing in different localities.

BELLEVEILLE, July 16, 1852.

DEAR SIR,—I send you three, what Botanists would call beautiful specimens of wheat affected with the weevil—two heads of Sole wheat late, not bearded, and one head of Hutcheson wheat, late and bearded.

Both of these kinds when *very early* are entirely free from it. You will perhaps be able to gather information and draw inferences that would escape me, when you see the plant in the diseased state. This insect is an awful scourge to our country, having destroyed many thousand pounds worth of wheat this season alone! I do not know of your having any other Eastern correspondent who would send them to you, but even if you have a thorough knowledge of the insect and its operations, I am sure you will excuse me, knowing my motives, and knowing that the *Agriculturist* is the Farmers' great channel for information.

Yours, very truly,

WILLIAM HUTTON.

To George Buckland, Esq.,
Sec., &c., &c.

PROVINCIAL EXHIBITION.

The Local Committee have commenced active operations, and the Mayor, as Chairman thereof, has issued a spirited address to the citizens of Toronto, urging the claims of the Association to pecuniary support, which it is confidently expected will be liberally responded to. The approaching Exhibition is expected far to exceed any of its predecessors, both as to the number of visitors and amount of stock and articles for competition.

The following Donations have been made to the funds of the Exhibition, and notified to the Secretary:—

	£	s.	d.
Corporation of Toronto,.....	200	0	0
County Council of York,.....	100	0	0
Agricultural Society of Middlesex,...	25	0	0
do Frontenac, Lennox and Addington,	25	0	0
do Oxford,.....	20	0	0
do Lanark and Renfrew,.....	10	0	0

ADELAIDE ACADEMY, TORONTO.

We have on several previous occasions borne our humble testimony to the excellence of this well conduct-

ed institution for the education of young ladies, in all the branches of a polite and useful education, under the able superintendence of Mr. & Mrs. Hurlburt, assisted by eminent teachers. Our space will only admit of the remark that the recent examination fully sustained the commendations we have made on previous occasions, and the whole educational staff seems to be in the most efficient condition. The next term will commence on the 1st of September.

GOVERNMENT AGRICULTURAL GRANTS.

The Secretary of the Board of Agriculture has been informed by the Provincial Secretary, that warrants have been ordered to be issued in favor of the respective Treasurers of the following societies, for the sum of £250 each. Essex and Lambton; Middlesex and Elgin; Oxford; Simcoe; Frontenac, Lennox and Addington; Leeds and Grenville; Kent; Welland and Lincoln; Wellington and Gray.

Affidavits have been received from the following Societies, and certificates relative thereto will be forwarded to the Government immediately:—Haldimand; Huron; Peterborough and Victoria; Northumberland and Durham.

Toronto, July 30, 1852.

SALE OF IMPROVED STOCK.

We beg to call the attention of our readers to Mr. Vail's advertisement on the last page. Those who are desirous of procuring first rate animals of the best Durham blood, should attend the sale. Mr. Vail's position as an importer and breeder of Short Horns, coupled with a high character for fair and honorable dealing, are too well known to require any commendation from us.

BOARD OF AGRICULTURE.

A meeting of the Members of the Board of Agriculture, will be held in this city on Saturday, August 14th, at 10 A. M.

By Order of the Chairman,

GEO. BUCKLAND, Sec.

Toronto, July 31st, 1852.

THE REAL PROSPERITY OF THE BEET ROOT SUGAR MANUFACTURE IN IRELAND, By W. K. Sullivan, Dublin 1852.

This interesting and well-written pamphlet has been placed in our hands by Mr. Commissioner WIDDER, to whom we have been previously indebted for several contributions of a similar kind. We hope to give some notice of this publication,—the latest on the Beet Sugar question,—in our next.

HORTICULTURE.

THE LANGUAGE OF FLOWERS.

(From the Gardeners' Record.)

In Eastern lands they talk in flowers,
And they tell in a garland their love and cares;
Each blossom that blooms in their garden bowers,
On its leaves a mystic language bears.

The rose is the sign of joy and love,
Young blushing love in its earliest dawn;
And the mildness that suits the gentle dove,
From the myrtle snowy flower is drawn.

Innocence dwells in the lily's bell,
Pure as the heart in its native heaven;
Fame's bright star, and glory's swell,
By the glossy leaf of the bay are given.

The silent, soft, and humble heart,
In the violet's hidden sweetness breathes;
And the tender soul that cannot part,
A twine of evergreen fondly wreathes.

The cypress that darkly shades the grave,
The sorrow that mourns its bitter lot;
And faith that a thousand ills can brave,
Speaks in thy blue leaves—Forget-me-not.
Then gather a wreath from the garden bowers,
And tell the wish of thy heart in flowers.

PERCIVAL.

PROTECTION OF APPLE TREES.

MR. EDITOR:—In my letter to you on the subject of protecting fruit trees from the depredations of mice, I mentioned that I would communicate to you the results of my experiment. The mice seem to have been exceedingly destructive this past winter, for I am acquainted with several persons who have lost four or five trees from this cause, and I have been told of one who has suffered to the extent of forty. On the 8th of April, which was as early as I could get at my trees this spring, I removed all the tarred covers, except from a few trees still surrounded by snow, which were uncovered a few days afterwards. The trees were all perfectly sound, the tar had penetrated through the canvas in only a few spots, so that any injury to the bark is impossible, the trees have now put out leaves, and are showing quantities of fruit. The garden had evidently been overrun with mice, and in a pit of cabbages, and another of Kohl Rabi, dozens were killed. Their holes or runs were traced up to the trunks of the trees in more than a dozen instances, but the tar was too much for them and they had turned back. The experiment therefore may be considered as perfectly successful; and, as the cloths are not injured, it is economical, it consumes no more time than the others, and in my opinion is much more to be relied on.—Might it not be employed to prevent the ravages of the peach grub,

the larva of *Oegiria Exilis* (a small moth) which in some parts of the country is found to be so exceedingly injurious?

I wish we could protect our plum trees as easily from the ravages of the curculio, or plum weevil, but unfortunately it does not appear that any one of the numerous contrivances proposed for the purpose are of the slightest use, at least in light sandy soils. Among the preventives which have been recommended may be mentioned the following:

1st. Dusting with Plaster of Paris (gypsum). This process has been tried by a correspondent of the *Horticulturist*, and pronounced excellent. I have found it utterly inefficient, and I believe others have been equally unsuccessful.

2nd. Sprinkling with a wash made with lime. This has been also proved to be ineffectual.

3rd. Sprinkling with a whitewash composed of lime and sulphur. This has been strongly recommended in the *Horticulturist*; and its proposer, from the success of his own trials, prognosticated valuable results. I was led to believe that this plan might be of advantage from the consideration that the sulphur being mixed with the lime must have caused the production of a quantity of sulphuret of calcium [varying in amount according to the length of time that the bodies were left in contact.] This compound has an exceedingly disagreeable smell, and seemed therefore likely to offend the olfactory nerves of the "Grand Turk." I accordingly tried it this spring, and have been miserably disappointed. According to directions, I syringed my trees at intervals of three days; after the second, no mark of the curculio was visible; the third syringing was a most complete one, so that every leaf, fruit and twig, was covered with the mixture. Three days afterwards, I could not find one single plum which did not bear the impress of the "Baby's nail."

4th. Paving underneath the trees. This plan I have not yet tried; it is a troublesome process, but more likely to succeed than some others, for it depends on the known habits of the insects, and not on the application of any poison or preventive which may arrest their approach. It has been observed that plum trees bending over water have borne large crops, and it seems very probable that if we could surround our plum trees with small tanks of water, we should secure the fruit. This plan, however, is one which could only be carried into effect by some wealthy amateurs in a most favourable situation. It is, however, worth trying.

Lastly. I will mention the employment of broods of chickens under each tree, a plan which may perhaps be a successful one, but

which is decidedly difficult of application when the number of trees to be protected becomes considerable. I think all gardeners will agree with me that *pigs* are equally objectionable. I have also tried the action of *assafoetida*, a substance whose abominable smell one would think sufficient to drive off the most determined insect; but I find my plums bitten by the *curculio* even when within half an inch of the *assafoetida* bag.

There is therefore one grand discovery reserved for future generations of gardeners, viz., a sure preventive for the *curculio* in all soils, whether clayey or sandy.

H. C.

Toronto, June 21st, 1852.

ORANGES.

Doubtless most of our readers are much better acquainted with the taste of this delicious fruit, than with the details of its history and growth.

Though the orange, lemon, lime, citron, &c., are natives of India and China, from whence they were introduced into Europe, they are, nevertheless, grown in great abundance in various parts of the world.

The orange-tree being a native of warm southern climates, it forms a prominent article of commerce from the southern to the more northern European nations. They are exported from Italy and Malta, as well as from the South of Spain and from Portugal, and also in large quantities from the Azores. The orange-tree affords not only a fruit of a very luscious and refreshing character, but is extremely prolific in its produce, which is manifest by the extreme cheapness with which they are sold in England, being sometimes much less than even our own apples and pears; which is the case at the present time when three to four in some of our large towns can be had for a penny; and many thousands of the poorer classes of our population earn a livelihood by the sale of them even at this rate. Thus it has become a peculiar blessing to us; for while it affords employment to vast numbers who might otherwise possibly be lacking the means of support, it offers a gratification within the reach of those whose means are limited; it is also a staple fruit with those whose tables groan under the more costly but less grateful products of other countries.—Oranges, as articles of diet, combine richness in flavour, abundance in quantity, cheapness in price and healthfulness in quality.

Oranges, as well as lemons, are imported in boxes and wrapped up separately in bits of paper, or slips of flax, or broad leaves, so as to prevent their coming in contact with one another. The duty upon oranges for home consumption in 1829, was £68,000 per annum. They are taxed at the rate of 2s. 6d. a box not exceeding 5,000 cubic inches. Each of those boxes contain about 500 oranges of the middling size, so that about 272,000,000 of this fruit were thus annually imported; allowing about one dozen per annum to

every individual of the population. Since that time no doubt the consumption has at least doubled. This extraordinary consumption of a fruit which is brought here from very distant parts of the world is the natural consequence of its rich and health-giving qualities, which fit it in a remarkable degree for being the universal fruit of commerce.

What pleasing thoughts and recollections flash across our minds while writing upon this subject. It carries us in imagination back over the sterner time of life to that happy, joyous period, when we anxiously waited the returning footsteps of our parents from the fair or the market; and our little feet and hearts danced with ecstasy as we peeped inquisitely underneath the cover of the reticule and saw the golden-coloured treasure. It was with those, too, that we commenced our experiments in natural philosophy, by compressing the skin or peel between our fingers, so as to force the inflammable oil which it contains into the fire, or candle-flame, and thereby causing an explosion. And even now we have a similar attachment to them: whoever thinks of having a party of friends around him to enjoy themselves without introducing those little foreign friends to minister to their pleasures? Nuts *may* be there, and apples too, and figs, but oranges are sure to be.

It is supposed that this fruit was introduced in the fourteenth century by the Arabs into Spain, "whose fruits of fragrance blush on every tree," and where are seen "the orange trees that gild the greenest bough." They are grown in the open air also at Nice, Genoa, and Naples; but at Florence and Milan, and often at Rome, they require the temporary protection of a shed. They are usually planted in boxes, and removed from the conservatory into the open air in summer, in France as well as in England. The orange blossom was at one period held in great esteem, and almost veneration, in our country; and even now it is; and, from its sweetness of smell, chasteness of construction, and delicacy of colour, deserves ever to be the cherished companion of the bride, in that interesting time of life when Hymen steps forth to heal the wound that Cupid has made; and to consummate the beautiful idea of "two souls with but a single thought, two hearts that beat like one;" nor is its beauty dimmed by being brought into contrast with the fresh and rosy blush of the bride. Since the introduction of the great variety of flowers from all countries, orange-ries, and fine specimens of orange and citron trees have been less in fashion, though more and more desirable on account of the combination of elegant verdure, the grateful odour of the flowers, and the rich appearance of the fruit. The first oranges, it is stated, were imported into England by Sir Walter Raleigh; and it is added that Sir Francis Carew, who married the niece of Sir Walter, planted their seeds, and they produced the orange trees at Beddington, in Surrey, of which Bishop Gibson, in his additions to "Camden's Britannia," speaks as having been there for a hundred years previous to 1695. But in reference to this, Professor Martyn observes, and reasonably so, that those trees having always produced fruit, they could not have been raised from

seeds, but they may have been brought from Portugal or Italy, where orange trees have been usually obtained, as early as the close of the sixteenth century. Some writers say they have been cultivated in England since 1492; and Mr. Loudon states, that, at the Wilderness, Kent, there are three trees in boxes, not surpassed by any trees so grown in Europe; and that, at Saltcombe, in Devonshire, there are, in a few gardens, orange trees, which have withstood the winter in the open air for upwards of a hundred years. The fruit of those trees is said to be as fine and as large as any imported from Portugal. At Hampton Court there are many orange trees, some of which are stated to be three hundred years old. When they are removed from the orangery to the open space, the air becomes freighted with a fragrance which adds no mean attraction to the otherwise delightful spot; and, when sitting under the boughs which bend beneath their golden load, to screen yourself from the warm, genial sunshine, you may almost imagine yourself transported to some tropical climate; this imagination being materially assisted by the surrounding beauties of the spot.

The author of "Vegetable Substances," in speaking of the country westward of the Rhone, where the Alps descend gradually by successive elevations from the high summits of Mont Blanc, Mont Rosa, and St. Bernard, to the sea, says:—"The vegetation there is at once luxuriant and choice. The finest bulbous flowers, the myrtle, the cactus, and many others, give more the air of the perpetual summer of the tropical countries, than is to be found, perhaps, in any other country of Europe,—certainly in any other of the same extent. But the glory of that delightful country is the orange tree, which, when full grown, attains the height of about twenty-five feet, and is graceful in all its parts. The trunk and older branches are of a delicate ash colour; the twigs of so soft and green, that they almost appear transparent; the leaves are moderately large, beautifully shaped, of a fine healthy green, and shining on the upper side, while the under one has a slight appearance of down. The flowers, which are in little bunches, and very graceful in their form, are, in the sweet oranges, of a delicate white, and in the more acid varieties of the family lightly marked with pink. Some plants have a more powerful odour than others, and are, for the moment, more rich; but there is a freshness in the aroma of an orange grove which never offends or cloy; and as the tree is at one and the same time in all the stages of its bearings, in the tender bud and full-blown blossom mingling in loveliness with the dear old brown leaves, with the embryo fruit just peeping out from underneath the foliage, and the rich round golden fruit, nodding a welcome to the hand to gather it, and the palate to partake of its refreshing juice. It is this peculiar character of the taste that renders it such an appropriate symbol of marriage; showing at once both the promise and the fulfilment of womanhood, and of those rewards of married love which give at once the charm of domestic life, the endearing bond of well-pledged hearts and the provision for the future of another and succeeding race to take their places. It is one of

those beauties in nature that scarcely knows a superior, even in the perfumes of Arabia, and the aromatic groves on the north of the Mediterranean, where bloom the Provence rose and tuberoses, and blend their sweets with that of the orange."

One peculiarity of the orange is, that man may have it fresh in every region of the world, and at almost every season of the year. The aromatic oil and the rind preserve it from the effects both of heat and cold, and the acidity of the former renders it proof against the attacks of insects. It is true they rot, like other fruits; but not for a long time, if the rind is preserved from injury and they are kept from moisture, and so ventilated as to prevent fermentation. Most of the oranges intended for exportation, and which we get in this country, are gathered while they are quite green; for, if it be allowed to come to maturity, it would spoil before it reached a foreign climate. The gathering of oranges and lemons for the British market generally occupies from the commencement of October to the end of December. They are not fully ripe till the spring has commenced. It is a remarkable fact, that the orange-trees from which the fruit is gathered green bear plentifully every year; while those upon which the fruit is allowed to ripen afford abundant crops only on alternate years.

There are four distinct species of the orange genus: the lemon, or citron; the orange; the mandarin orange; and the shaddock; and of those there are many varieties. They are, even in the East, where they are natives, not a little capricious in their growth, the fruit and even the leaves frequently altering; so that it is not easy at all times to determine which is a distinct species and which only a variety.

Having dwelt so lengthily on oranges, we shall only briefly touch upon the other species of the genus.

The SHADDOCK is a native of China and the adjacent countries: it derives its specific name from having been first introduced into the West Indies, from China, by Captain Shaddock. In China it is called "sweet ball." The tree is of much larger growth than the orange; and the fruit varies from eight to twelve inches in circumference: there are many varieties; in some the pulp is white, in others it is almost red; some are sweet, and others acid. The proper way of propagating the Shaddock is by budding it, as it is done in China. But the planters in the West Indies, instead of doing this, have adopted the mode of rearing it from seed, and the consequence is, it is much degenerated; the fruit being very sour, and of little value.

THE LEMON.

The Lemon is a native of India, or that part of it situated beyond the Ganges. It was introduced into the West by those mighty Caliphs, who, from the heart of Southern Asia, extended their conquest to the foot of the Pyrenees. It being thus transplanted by the Arabs into every part of their vast empire where it would grow, was found by the Crusaders in Syria and Palestine towards the end of the eleventh century. It was introduced by them into Sicily and Italy,

though it is probable that at the same period it was already multiplied in Africa and Spain. The rind of the lemon is much smoother than that of the citron; the bark of the tree is also rougher; the leaves are oblong, of a pale green, with a winged stalk.

The LIME, or sour lemon, is a small fruit, much less than the citron or lemon, bring from an inch to an inch and a-half in diameter. The tree is small and shrubby, and is not much cultivated in Europe. It is grown in great abundance in the West Indies, where it is a great favourite, because of its acid juice; it is drunk as a beverage, because of its cooling qualities. There is, also, a sweet lime, somewhat between the lemon and the sour lime.

THE CITRON.

This fruit, in its native state, is a thorny tree which grows about eight or ten feet high; its leaves are of a pale green; the flowers are white, and emit a very sweet fragrance. The fruit is oblong, about six inches in length, with a rough, yellow rind, the outer part of which contains a considerable quantity of highly aromatic and inflammable oil; the pulp is white and edible, but very acid. These are grown plentifully in Spain and Italy; but with artificial heat in winter, and with care generally it may be grown to perfection in England.

BEAUTY AND COMFORT OF A GARDEN.

The following extract from a recent and most charming work, entitled "RURAL HOURS," written by Miss COOPER, the daughter of the late celebrated novelist, cannot fail of being pleasurable to the reader. That gardening promotes health and domestic comfort, and is a powerful means of advancing the civilization of a people, cannot admit of a question; and it would be a happy thing if every child in the land were taught the principles upon which successful cultivation depends, and to form such observant habits of mind as would lead him to respect and love the simple and beautiful, although *inanimate*, works of God. A people trained from their infancy to reverence the true and the beautiful, in nature and art, would be provided with a safeguard against the too common practice of stealing from gardens, and the sheer barbarism of mutilating plants or trees:—

One always loves a garden; labour wears its pleasantest aspect there. From the first days of spring, to latest autumn, we move about among growing plants, gay flowers, and cheerful fruits; and there is some pretty change to note by the light of every sun. Even the narrowest cottage patch looks pleasantly to those who come and go along the highway; it is well to stop now and then when walking, and look over the paling of such little gardens, and note what is going on there.

Potatoes, cabbages and onions, are grown here by every family, as first requisites. Indian corn and cucumbers are also thought indispensable, for Americans of all classes eat as much maize as their Indian predecessors. And as for cucumbers, they are required at every meal of which a thorough-going Yankee partakes, either as salad in summer, or pickled in winter. There is usually a pumpkin-vine running about the corn hills, its large yellow flowers and golden fruit showing, as a matter of course, below the glossy leaves of the maize; a part of the fruit is made into pies, the rest goes to the cow or pig. Sometimes you find squashes, also, in these small gardens, with a few tomatoes, perhaps; but these last are difficult to raise here, on account of the occasional frosts of May.

Flowers are seldom forgotten in the cottage garden; the widest walk is lined with them, and there are others beneath the low windows of the house. You have rose-bushes, sun-flowers, and holly-hocks, as a matter of course; generally a cluster of pinks, bachelor's buttons, also, and a sweat pea, which is a great favourite; plenty of marigolds, a few poppies, large purple china asters, and a tuft of the lilac phlox. Such are the blossoms to be seen before most doors; and each is pretty in its own time and place; one has a long-standing regard for them all, including the homely sun-flower, which we should be sorry to miss from its old haunts. Then the scarlet flowering bean, so intimately connected with childish recollections of the hero Jack and his wonderful adventure, may still be seen flourishing in the cottage garden, and it would seem to have fallen from a pod of the identical plant celebrated in nursery rhyme, for it has a great inclination for climbing, which is generally encouraged by training it over a window. We do not hear, however, of any in these parts reaching the roof in a single night's growth. You must go to the new lands on the prairies for such marvels now-a-days. They tell a wonderful story of a cucumber vine somewhere beyond the great lakes, in the last "new settlement," probably; the seed having been sowed one evening in a good bit of soil, the farmer, going to his work next morning, found it not only out of the ground, but grown so much that he was curious to measure it; "he followed it to the end of his garden, over a fence, along an Indian trail, through an oak opening, and then seeing it stretch some distance beyond, he went back for his horse, but while he was saddling old Bald, the vine had so much the advantage of him that it reached the next clearing before he did; there he left it to go back to dinner, and how much farther it ran that day Ebenezer could not tell for certain."

We have no such wonders hereabouts; and even the ambitious bean seldom reaches higher than a low roof; nor is its growth always sufficiently luxuriant to shade the window, for it often shares that task with a morning-glory. The plan of these leafy blinds is a pretty one, but they are too often trained in stiff and straight lines; a poetical idea, *trois a quatre epingles*. Frequently we see a cottage with a door in the

centre, and one window on each side, and vines trained over the sashes in this way, which gives it an odd look, like a house in green spectacles, as it were. When hop vines are used for screening the windows, which is often the case, the plant is not so easily restrained; and throwing out its luxuriant branches right and left, takes care of itself.

Currants are almost the only fruit seen in the smaller gardens of our neighbourhood; even gooseberries are not so general; both raspberries and strawberries grow wild here in such profusion that few persons cultivate them. Currants, by-the-by, both black and red, are also native plants; the black currant is by no means rare in this State, and very much resembles the varieties cultivated in gardens; the wild red currant is chiefly confined to the northern parts of the country, and it is precisely like that which we cultivate. Both purple and green gooseberries are also found wild in our woods.

It is often a matter of surprise and regret that fruit should not be more cultivated among us in gardens of all sizes; but the indifferent common cherry is almost the only fruit tree found here in cottage gardens. Even the farmers neglect cherries, and plums, and pears, surprisingly.

There is, unhappily, a very serious objection to cultivating fruit in our village gardens; fruit-stealing is a common crime in this part of the world; and the standard of principle on such subjects is as low as it well can be in our rural communities. Property of this kind is almost without protection among us; there are laws on the subject, but these are never enforced, and of course people are not willing to throw away money, and time, and thought, to raise fruit for those who might easily raise it for themselves, if they would take the pains to do so. There can be no doubt that this state of things is a serious obstacle to the cultivation of choice fruit in our villages; horticulture would be in a much higher condition here if it were not for this evil. But the impunity with which boys, and men, too, are allowed to commit thefts of this kind, is really a painful picture, for it must inevitably lead to increase a spirit of dishonesty throughout the community.

It is the same case with flowers. Many people seem to consider them as public property, though cultivated at private expense. It was but the other day that we saw a little girl, one of the village Sunday scholars, moreover, put her hand within the railing of a garden and break off several very fine plants, whose growth the owner had been watching with care and interest for many weeks, and which had just opened to reward his pains. Another instance of the same kind, but still more flagrant in degree, was observed a short time since: the offender was a full grown man, dressed in fine broadcloth to boot, and evidently a stranger; he passed before a pretty yard, gay with flowers, and unchecked by a single scruple of good manners, or good morals, proceeded to make up a handsome bouquet, without so much as saying, by your leave, to the owner; having selected the flowers most to his fancy, he arranged them tastefully, and

then walked off with a free and jaunty air, and an expression of satisfaction and self-complacency truly ridiculous under the circumstances. He had made up his nosegay with so much pains, eyed it so tenderly as he carried it before him, and moved along with such a very mincing and dainty manner, that he was probably on his way to present himself and his trophy to his sweetheart; and we can only hope that he met with just such a reception as was deserved by a man who had been committing petty larceny. As if to make the chapter complete, the very same afternoon, the village being full of strangers, we saw several young girls, elegantly flounced, put their hands through the railing of another garden, facing the street, and help themselves in the same easy manner to their neighbour's prettiest flowers; what would they have thought if some one had stepped up with a pair of scissors and cut half a yard from the ribbon on their hats, merely because it was pretty, and one had a fancy to it? Neither the little girl, nor the strangers in broadcloth and flowers, seem to have learned at common school, or at Sunday School, or at home, that respect for the pleasure of others is simple good manners, regard for the rights of others, and common honesty.

No one who had a flower border of his own would be likely to offend in this way; he would not do so unwittingly, at least; and if guilty of such an act, it would be premeditated pilfering. When people take pains to cultivate fruits and flowers themselves, they have some idea of their value, which can only be justly measured by the owner's regard for them. And then, moreover, gardening is a civilizing and improving occupation in itself; its influences are all beneficial; it usually makes people more industrious, and more amiable. Persuade a careless, indolent man to take an interest in his garden, and his reformation has begun. Let an idle woman honestly watch over her own flower-beds, and she will naturally become more active. There is always work to be done in a garden, some little job to be added to yesterday's task, without which it is incomplete; books may be closed with a mark where one left off, needlework may be thrown aside and resumed again; a sketch may be left half finished, a piece of music half practised; even attention to household matters may relax in some measure for a while; but regularity and method are constantly required, are absolutely indispensable, to the well-being of a garden. The occupation itself is so engaging, that one commences readily, and the interest increases so naturally, that no great share of perseverance is needed to continue the employment, and thus labour becomes a pleasure, and the dangerous habit of idleness is checked. Of all faults of character, there is not one, perhaps, depending so entirely upon habit as indolence; and nowhere can one learn a lesson of order and diligence more prettily and more pleasantly than from a flower-garden.

"But another common instance of the good effect of gardening may be mentioned;—it naturally inclines one to be open-handed. The bountiful returns which are bestowed, year after

year, upon our feeble labors, shame us into liberality. Among all the misers who lived on earth, probably few have been gardeners. Some cross-grained churl may set out, with a determination to be niggardly with the fruits and flowers of his portion; but gradually his feelings soften, his views change, and before he has housed the fruits of many summers, he sees that these good things are but free gifts of Providence to himself, and he learns at last it is a pleasure, as well as a duty, to give. This head of Cabbage shall be sent to a poor neighbor; that basket of refreshing fruit is reserved for the sick; he has pretty nose-gays for his female friends; he has apples or peaches for little people; nay, perhaps in the course of years, he at length achieves the highest act of generosity,—he bestows on some friendly rival a portion of his rarest seed, a shoot from his most precious root! Such deeds are done by gardeners.

"Horticulture is not carried on upon a great scale anywhere in this country. We regret that this should be so. A large garden, where taste and knowledge have full scope, is indeed a noble work, full of instruction and delight. The rare trees and plants brought with toil, and cost, and patience, from distant regions; the rich variety of fruits and vegetables; the charming array of flowers, are among the most precious and the most graceful trophies of commerce, and industry, and adventure. Such gardens, whether public or private, are always desirable in a neighborhood. They are among the best gifts of wealth, and scatter abroad too many benefits to deserve the doubtful name of luxury. If we have none near enough to bring good to our own rural village it is at least pleasant to remember that other communities are more fortunate than ourselves. When one cannot enjoy some particular good thing oneself, a very little charity, and a very little philosophy, lead one to be glad, at least, that others may profit by it.

A very striking proof of the civilizing effect of large gardens may be seen any day in the great towns on the continent of Europe, whether in France, Italy, Germany, &c., &c. In these old countries, where grounds of this kind have been more or less open to the public for generations, the privilege is never abused by any disgraceful act. The flowers, the trees, the statuary, remain uninjured year after year; it never seems to occur to the most reckless and abandoned to injure them. The general population of these towns is, in many respects, inferior to our own; but in this particular point their tone of civilization rises far above the level of this country.

OSAGE ORANGE SEED.—A gentleman who has traveled south much where the seed of the Osage Orange is obtained, gave us the following mode of detecting the poor seed.—"That which is clean, and looks very white and nice, is good for nothing; while that which is covered with gum and dirt is the good, and will readily germinate. The former is obtained by throwing boiling water on the fruit, by which the germinating principle is destroyed. In the latter case the fruit is buried in the earth, and allowed to rot, when the seed is threshed out and dried—and hence the amount of gum and dirt which adheres; and this he says is a sure guide in the selection of good seed.

TREATMENT OF STRAWBERRIES JUST BEFORE FRUITING.—We have repeatedly urged the importance and shown the advantages of irrigation; but where this cannot be adopted in practice, mulching is a good substitute. The following mode of treatment is described by J. Cuthill in Hovey's Magazine, as practiced by Joseph Myatt, the celebrated strawberry raiser and by himself. "Having no water near him, Mr. Myatt depends entirely upon the immense quantity and the quality of his manure for keeping the ground moist, together with a good coat of straw; but where manure is scarce, perhaps my plan, which I have practiced for many years, would be the best. I always mulch between the rows with fresh straw, mixed with horse droppings, laying it on at least an inch in thickness, just when the plants are coming into flower; and if the weather is dry, I water frequently, but not over the flowers, until all the fruit is set. By the time the latter is ripe, the strength of the manure is washed down among the roots when they most want it, leaving the straw clean and sweet."

Spentan has been extensively recommended and considerably used for mulching strawberries. But N. Lonworth of Cincinnati, who never adopts anything hastily, says "Tan I have discarded. It soon rots and renders the fruit dirty. In its green state it injures the flavor of the fruit. I prefer the old covering, from which the plant takes its name, cut straw."—*Cultivator*.

AGE OF TREES.—The "Hethel Thorn," so well known to many Norfolk people, is on a farm now the property of Mr. Hudson Guiney, by whom it was purchased from Sir T. Bevor. The first Sir Thomas always said it was mentioned in a deed of 1,200 and odd, as a boundary, under the appellation of "the Old Thorn." It is stated, also, that it is mentioned in some chronicle as the thorn round which a meeting of insurgent peasantry was held during the reign of King John. An etching of this interesting relic has been made by Mr. Ninham. The involution of its branches, which are all hollow tubes, as heavy as iron, is most curious; and although the tree is certainly diminished of late years, it still puts out leaves and berries vigorously.—*Notes and Queries*.

HOW TO TURN A WHITE DAHLIA BLUE.—I have been told, but have never tried the experiment, by a celebrated cultivator of dahlias in Belgium, that he will be able in the course of a year or two, to produce a blue one, by keeping constantly watered the root of a white one with a solution of sulphate of iron. The sulphate of iron turns hydrangeas blue, and why not other white flowers as well? Of course the solution must be very weak when used.—*Gardener's Chronicle*.

NEW PLAN FOR RIPENING FRUIT ON TREES.—The last number of the Paris *Journal d'Agriculture de l'An* gives a plan for forwarding the ripening of fruit, on trees. Every one connected with horticulture knows that there exist in trees two kinds of sap, one rising and the other falling, the former nourishing the wood, and the latter the flowers and the fruit. The process alluded to consists in binding tightly round the lower part of the branch, on which the fruit is, a piece of wire, in order to stop the descending sap, which, thus arrested in its progress, flows with great abundance to the fruit, increases its size, and brings it to maturity a fortnight or three weeks earlier than in the natural way.

Some men devote themselves so exclusively to their business, as almost entirely neglect their domestic and social relations. A gentleman of this class having failed, was asked what he intended to do. "I am going home," said he, "to get acquainted with my wife and children."

Remarkable Voyage in the Air.

John Wise of Lancaster, Pa., made his 131st aerial voyage from Portsmouth, Ohio, on the 3rd instant. His balloon voyage was a remarkable one, and the grandest he ever performed so far as magnificent sights are concerned. He ascended a little after 4 o'clock in the afternoon, and soon rose to an elevation of 2,000 feet. While slowly sailing along at this elevation, by the range of a hill in Kentucky, three rifle shots were fired at him, one struck the car, but so very lightly that it did no harm. Those persons who fired the shots, we have no doubt, did not imagine that there was any person in the balloon. He believes the striking part was mere chance. Some exceedingly useful meteorological information was obtained by Mr. Wise in his voyage. These he states are as follows:

1st. Thunder storms have two plates of clouds, the upper discharging the contents, whatever it may be, rain, hail or snow.

2d. Sheet lightning of an orange color undulates slightly between the upper and lower cloud, in a wailing motion.

3d. The discharges of electricity take place in the lower cloud, by discharges are meant thunder and lightning.)

4th. The distance between the upper and lower cloud is not less than 2,000 feet, (this is mere eye measurement.)

5th. The uprising current was not continued higher than the lower cloud, and was raging and whirling as long as I was in the margin of the storm, being in twenty-five minutes.

6th. The storm was much wider below than above, and the deposit diverging at least 25 degrees from a perpendicular line.

7th. The deposition of hail and rain was thickest in the centre of the storm. I could not, of course, look through it, but I viewed one from its front, the other from behind its line of direction, and they both appeared the same.

8th. Under the shadow of the upper cloud it is very cold, and in the lower cloud it is quite warm.

9th. The upper cloud was moved by the current which always blows from the west to the east.

10th. Other causes than the upper current may affect the horizontal course of a thunder storm so as to increase or diminish in their violence.

I might here deduce some data from what was so distinctly observed on this occasion, but will for the present leave to abler hands, and particularly to Prof. Epsy and the Smithsonian Institution.

Mr. Wise enjoyed the grand and terrible spectacle of looking down upon the war of elements upon a scale far surpassing Waterloo. We advise Prof. Epsy and Dr. Hare to make a number of aerial voyages to settle their disputes. We think it would be a grand plan for them; much better than writing and printing long papers on the subject. Let them get up into the regions above along with Mr. Wise, and make observations. This point might be useful to the Smithsonian Institution in getting meteorological information.—*Scientific American*.

THE USE AND APPLICATION OF CHLOROFORM.—The medical journals have been discussing the chloroform question again. A few deaths by its use have excited much attention, and some have come to the conclusion that it should not be used to render people insensible during severe surgical operations. The hy-

dropathists have thus expressed themselves. We believe that there is no danger in the use of chloroform, if applied with direction. The deaths which have resulted from its application have been very few, considering the extensive use which is made of it. Its uniform success and safety rendered these incautious under whose superintendence the deaths were produced.—In every case the quantity employed should be weighed or measured, but it is often given without the least attention being paid to the exact quantity employed.

EFFECTS OF LIGHTNING.

In the *Annales de Hori. Soc. de Paris*, vol. xxii. p. 120 to 134, an account is given of sixteen trees which have been struck by lightning in different parts of France, at various periods, from 1813 to 1837.

The effects appear to have been very different on different trees. In some, the leaves only were destroyed; in others, the leaves were but very slightly injured, but strips of bark appeared to be torn off; in some the branches were broken, and no other injury done; in some the trunks were split; and in others, no injury was done to the top of the tree, but the roots were laid bare, and torn in pieces. In several cases, where the trees were standing near houses, or hay or corn ricks, they seem to have acted as conductors to the electric fluid, and saved the cottage or the corn-stack or hayrick from being struck by the lightning. This was particularly the case where the Lombardy poplar or the silver fir had attained a great height.—The author of the article, Vicomte Haricart de Thury, concludes with the following advice:—

1. Travellers and country people, reapers, hay-makers, &c., during the time of a thunder storm, should never take shelter under detached trees; more especially under a tree which stands at a distance from any other, such trees acting as conductors.

2. To take shelter rather under a bush, than a tree, and the lower and more spreading it is, the better.

3. Never to take shelter on that side of an object, from which the wind or the storm comes, or, indeed, in the direction of the wind or the storm. Thus, supposing the storm proceeded in the direction of the east and west, then the north and south side of a bush, or other sheltering objects, are to be chosen, and not the east and west side.

4. In the moment of danger, the safest way is to recline at length on the ground, choosing a furrow or ditch, if any should be at hand; but no time should be lost in searching for a furrow or ditch, or for a bush or a hedge, because the upright position, maintained during the search, is incomparably more dangerous than the horizontal one.

5. Always to bear in mind that the danger is great in proportion to the shortness of the time which elapses between the appearance of the lightning and the noise of the thunder.

6. Those who cannot afford the expense of lightning conductors to their houses, farm buildings and ricks, should plant near them late growing trees, such as the pyramidal oak (*Quercus pedunculata pyramidalis*) the Lombardy poplar (*Populus festigiata*) the cyprus, the larch, the silver fir, the spruce fir, &c.

SHIFTING BRICK HOUSES.—A block, three stories high, has been safely removed 10 feet 6 inches backwards, at the instance of the commissioners for widening the streets of an American Town. As possibly the plan might be of use in some of the towns of old England, where the old and narrow thoroughfares are choked by the traffic of our free-trade age, we

subjoin the *modus operandi*. Concave cast-iron plates are prepared, the foundation of the wall cut away, and two plates facing each other inserted, with cannon balls between them. On these plates and balls, placed under all the walls, the whole building rests. Three screws are applied, and the whole building is rolled upon them to any distance. These plates and balls are removed one by one, and the bricks replaced. It is estimated that the block weighed 7,000 tons. It was rolled on one hundred and twenty balls, and was removed, after the plates were set, in about two hours' time.—*Boston Paper*.

AGRICULTURAL MACHINERY.—The advance that has taken place in agricultural machinery, and all the implements of husbandry, is also very great. Thus we have Lord Willoughby D'Eresby's steam plough, and various machines for digging and draining, which, if found successful, must be of incalculable value, and a high agricultural authority says "assuredly no other nation has reached anything near our stage of advancement." And this will be obvious by inspecting the Belgian and French agricultural implements, which consist only of ploughs and other tools for turning up the soil, and are much less effective than our own. Though America has produced that most valuable modern invention, the reaping machine, still Professor Johnston tells us that at a late meeting of the Farmer's Club at Staten Island, in America, it was unanimously resolved that under no circumstances was it expedient to plough deeper than 6 inches. Thus, while the progress we have made in all mechanical pursuits, and in the arts and sciences during the last 50 years, fills us with wonder and astonishment, still in agricultural advancement we stand higher than any other nation in the world.—*English Paper*.

WASHING MADE EASY.—Every man on earth ought to contribute something for this object—not because he ought to do all in his power to lessen the labour of those who make said linen clean—just for his own personal comfort, or the comfort of his better half, if he happen not to be only a half of human existence himself, but for his personal safety. Because, when washing day comes round—and washing work is particularly hard—you had better believe, if you have never had experience, it is a little unsafe for you to come within reach of soap suds and wash boards. If you should ever be guilty of such a piece of insanity just tell the opposition you only came into the kitchen out of the most benevolent motives in the world; merely to tell them that the "crazy folks" in the asylum at Hartford, Ct., mix a gill of alcohol with a gallon of softsoap, just as they are going to rub it on the clothes which they then soak two or three hours, and then merely rinse out in clean water, and all the dirt is out as effectually as good sense is out of a fellow after drinking the same quantity of the "poison stuff." Just tell them that is the easiest way to make washing easy, and get them to try it, and you will thereafter find no reason to run away on washing day.

In washing stairs and passages, always use a sponge instead of a cloth when washing the space between the carpet and wall, and you will not soil the edges. Sponges are cheap, and this information is cheap, but it is valuable to all housekeepers.—*The Plow*.

GRASS.—The experiments of Kuhlman, the French agricultural chemist, upon the action of ammonia on grass lands, at once point to ammonia as one of the most important manures for increasing the productive power of our pasture and meadow land. This chemist applied ammonia in different forms and combined with other simple mineral manures; and he found that in all cases the amount of grass or hay

produced was in exact proportion to the amount of ammonia contained in the manure. Guano containing a large amount of ammonia, and being also its cheapest source, must, therefore, prove of the greatest benefit in the production of grass. For grass land, from two to four cwt. of guano, mixed with soil, may be used per acre. Wet or damp weather should be selected for sowing it. Probably the end of March or the beginning of April is the best time. Under circumstances, guano, may be applied to grass land in the autumn, particularly where the undersoil is of a strong or loamy character. Thus applied it may have the effect of bringing up the grass a little earlier in the spring.—*Nesbit on Peruvian Guano*.

CLOVER-SICK LAND.—A mixture of nitrate of soda gypsum and salt, produced a deep green, dense mat of clover; when the part so dressed was thin, pale, and hungry. The quantity having been only a few acres, it must be regarded as a guide to experiment, rather than an established remedy. A ton each of gypsum and fishery salt, and half a ton of nitrate of soda well mixed, may be strewed, in damp weather, or light rain, over 15 acres. Where fishery salt cannot be had reasonably, hide salt, or any other foul with animal matter may be substituted. Clean salt I have not tried.—*W. PRIDEAUX*.

PATENT TILE AND PIPE MAKING MACHINE.—We were invited yesterday to witness the working of one of Mr. Hart's Tile Machines, at the Atlas Works, Borough road, Southwark. This machine is one of a series intended for Italy, and its construction and principle have attracted a good deal of attention. It makes pipes, tiles, hollow and solid bricks, cornice work, and is capable of being readily adjusted to some 1200 different patterns. It is worked by a screw, and is simple to singularity throughout, and is, indeed, the very Quakerism of mechanics. A man and a boy are capable of giving it a pressure of ten tons; and by a curious reversing or self-acting movement, no time is lost in the working of both ends, one man being continually at work while the boy is carrying away.—Thus, and with only moderate exertion, we saw tiles produced at the rate of eight miles per ten hours, and hollow and solid bricks, &c., with like rapidity.—*London Morning Paper*.

THE SCIENCE OF CANDLE BURNING.—Before you put your candle out, look at it. It has been burning some time unsnuffed, and gives little or no light; the wick is long and is topped by a heavy black clot—a lump of unconsumed carbon. Take the candlestick in your hand, and move it gently from side to side; the superfluous wicks burns away, and the candle is again bright. When you ask yourself why this is, you learn that flame is hollow, and as it admits no oxygen, which is necessary for combustion, the wick which it surrounds remains unconsumed, and diminishes the light. When the flame, by motion, leaves the wick exposed at intervals to the oxygen of the atmosphere, it speedily burns away. Note the valuable deduction from this fact—the formation of a wick which constantly turns outward and reaches the exterior air, and so gives us a candle requiring no snuffing.—There is much philosophy in the burning of a candle. The wick, you may think, is intended to burn and give light, but this is not exactly the fact. The wick is simply to bring the melted tallow, or oil, if in a lamp, into that finely divided state in which it is best fitted for combustion. The heat applied to "light" the candle decomposes into its constituents the small quantity of tallow next the wick; heat and light are produced in the operation, and the heat so produced carries on the decomposition.—*The Builder*.

COST OF SUBURBAN DRAINAGE.—A space of ground near Birkenhead, now called the Park, was, a short time ago, a mere marsh, over which thick mists hung at nightfall. "It was thoroughly drained with drains varying in depth from seven feet to close surface drains. The mists and fogs created on this tract have, since the drains came into operation, disappeared. The expense of that work was £20 per acre; and the land, which before the drainage was worth only £1 per acre, is now worth, at the least, £4 per acre for pasturage; so that the work pays 15 per cent direct profit, besides effecting its main object—the improvement of the neighbourhood in comfort and salubrity." The cost of draining one acre of land for a detached building, the site of the building deep drained, and the rest of the land thoroughly drained is shown by the return of the Board of Health, just quoted, to be met by an annual charge for 20 years of 18s. 3½d. in heavy soils. The drainage of one acre of land for four semi-detached residences would be met by an annual charge per house for 20 years of 3s. 11d., 4s. 7d., or 5s. 7d.—*Builder.*

LIFE IN THE ARCTIC SEA.—Iceicles hung round the deck, peaches became a mass of calcedone, buter was cut with a chisel, beef with a pickaxe and crowbar. Walking out you are conscious of a bracing atmosphere. Whiskers and face are glazed with ice. Put out your tongue and it is frozen to your chin. On one occasion, a poor fellow recovering from inflammation of the lungs, being asked how his frost bitten ear came off, he produced it in a piece of paper, and said, "Doctor, I didn't want to trouble you, but it dropped off last night."—*Dr. Kane's Lecture on the Arctic Expedition.*

DEEP WELL NEAR BANSTED DOWNS.—I am well acquainted with the country immediately south of the Bansted Downs, and can give W. S. G. some information about the wells there. The nearest stream is a small branch of the Mole, which has its rise some three miles off, just beyond Merstham (pronounced "Meestum"). The ponds are very few and shallow, so that the inhabitants have to rely on wells for their water. Wells, however, are an expensive luxury, and appertain only to the bettermost dwellings. I know several labourer's cottages distant upwards of a mile from the nearest well or pond; they use what water they catch, and when that is gone, shift as they best can—most commonly do without. This scarcity of water may be the reason, why a district within fifteen miles of London is so thinly populated.—*Notes and Queries.*

WALKS ABROAD.

Go abroad
Upon the paths of Nature, and when all
Its voices whisper, and its silent things
Are breathing the deep beauty of the world,
Kneel at its simple altar, and the God
Who hath the living waters shall be there.

WILLIS.

EVENINGS AT HOME.

Now stir the fire, and close the shutters fast;
Let fall the curtains; wheel the sofa round;
And while the bubbling and loud hissing urn
Throws up a steamy column, and the cups
That cheer but not inebriate wait on each:
So let us welcome peaceful evening in.

COWPER'S "TASK."

THE OLD GREEN LANE.

BY ELIZA COOK.

'Twas the very merry summer time
That garlands hills and dales,
And the south wind rung a fairy chime
Upon the fox-glove bells;
The cuckoo stood on the lady birch
To bid her last good-bye—
The lark sprung over the village church,
And whistled to the sky;
And we had come from the harvest sheaves,
A blithe and tawny train,
And tracked our paths with poppy leaves,
Along the old green lane.

'Twas a pleasant way on a sunny day,
And we were a happy set,
And we idly bent where the streamlet went
To get our fingers wet;
With the dog-rose there and the orchis there,
And the woodbine twining through,
With the broad trees meeting everywhere
And the grass still dank with dew.
Ah! we all forgot, in that blissful spot,
The names of care and pain,
As we lay on the bank, by the shepherd's cot,
To rest in the old green lane.

Oh, days gone by! I can but sigh
As I think of that rich hour,
When my heart in its glee but seemed to be
Another wood-side flower;
For though the trees be still and fair,
And the wild bloom still as gay—
Though the south wind sends as sweet an air,
And heaven as bright a day;
Yet the merry set are far and wide,
And we never shall meet again;—
We shall never ramble side by side
Along that old green lane.

STAR LIGHT.

From the wild disorder of scattered stars which the first picture of the heavens presented, science has enabled us to grope our way through the dark labyrinth of chaos, guided only by the soft lustre of those winning stars, till we have been enabled to see the whole grouped together in one great and complete system, of a magnitude which makes arithmetic ridiculous, yet simple in arrangement as the conceptions of a child. Man has no part in all these sublime galaxies but to stand a silent spectator of their overwhelming beauty. Compared with the awful periods which compose the years and ages here, what is this momentary life-time of man? Nature works complete at every step, from the whirling bubble on the brook to the congress of a million stars. The fall of dynasties, the growth of new peoples, antiquities, and traditions, vanish before this severe face of marble solemnity. The petty cares, jealousies, and passions of men fade away in the contemplation of these awful cycles; and startling is the contrast, after traversing such realms of majesty to wonder, where worlds whirl without jar, and orbs rush without concussion, to turn back to man, and see him struggling on the surface of a flood and buffeting with its boiling waves. "One might think the atmosphere was

made transparent with this design, to give man in the heavenly bodies the perpetual presence of the sublime; seen in the streets of cities, how great they are. If the stars should appear but one night in a thousand years, how would men believe and adore; yet every night come out these preachers of beauty, and light the universe with their admonishing smile."

This great double convex lens-shaped system, of which the Milky-Way is the outer extremity or ring, is not the universe, but a trivial part of it. Wherever the telescope has penetrated, it has brought to light *other* great systems of starry dust, whence the star-light comes in softened clouds, indefinite and vague. These are composed of myriads of separate stars, each one a sun, revolving with its attendant planets around the centre of the whole. In these we see the circular outline repeated in obedience to the law of gravitation,—the law which alike controls the form of a dewdrop or a tear, and a congress of a thousand stars. Beyond these are others more distant still; and thus down far, far into that soundless sea, the starry systems float and sing; and the telescope, but now a thing of marvel and triumph, is at last a toy and contemptible, for it reaches the cloudy masses no more. The star-light comes, but it will tell no story; it brings pictures, but they are pictures of mystery. And thus, from the spectacle of starry worlds revolving in our sky, we are carried up to the idea that those masses of nebulous light are astral systems also; and come at last to the conjecture, that, as the lesser worlds revolve around the sun, and that sun, in his own system, around a greater sun, the star-systems themselves, which we see floating away in the abyss yonder, may all be traversing a pathway around the feet of Deity, receiving from that Central Sun of all things a glory and a light Divine. Let us bow our heads, for surely God is in the midst, controlling, watching, and judging, but loving all the while!

But even here let us retrace our steps, for the star-light can yet tell us something which shall make manifest the omnipotence of Deity, as an attribute in harmony with that same star-light, and as a necessary consequence of its own physical law.

Light is not instantaneous in its passage; it requires time to travel. It moves at the rate of 2,000,000 of miles in a minute. Hence it is eight minutes reaching us from the Sun, or the Sun has really risen eight minutes before we see him, and is now eight minutes in advance in his path of the spot which he appears to occupy. Hence, again, the bright star in Centaur, which is eighteen billions of miles distant, is seen by us, not as it now is, or where it now is, but where it was, and as it was, three years ago; and if it were now to explode into fragments, and vanish from the sky, it would be three years before we should lose its picture in the heavens. This will be easier understood, if it be remembered that the ray of light leaves the star, and passes through space quite unconnected with its origin; and, when it falls on the optic nerve, it will give the eye a picture of the star, whether the star be there or not. Thus, we see the star Vega, as it

was twelve years ago, and a star of the twelfth magnitude as it was four thousand years ago. In the same way, if we reverse the phenomena, the inhabitants of the sun see the earth not as it is now, but as it was eight minutes before; and a spectator in Vega, as it was twelve years before; and, in like manner, to the deepest recesses of the universe. What is the result of this?—namely, that the universe contains not only the whole of space, but also the whole of time! Every event, as well as every existence, is treasured there; and empty space becomes a microcosm of the ages. Everything on which the light falls reflects back a picture of itself.

The stars send forth complete pictures of all the scenery and appearances on their respective surfaces; and although, from our limited powers of vision, we are unable to perceive anything more than a point of light; nevertheless, that point of light, could we dissect it, would reveal the landscapes, seas, and cities, as they were when the light came away, as plainly as we can behold the scenery of our own hills and valleys? What then? Why, from some part of space the eye of Omnipotence can behold whatever has taken place here, or in any other world. There is some spot where the picture, embalmed in a ray of light, is speeding on its way through infinitude; and from thence He can behold it. At the Centaur in 1854, the picture of London in 1851, with its Palace of Glass and gathering of the Nations, will be visible; and upon a star of the twelfth magnitude may now be seen the founding of Memphis, and the wanderings of Abraham; while pictures of the dim geological ages of the earth are now speeding past the regions of distant nebulae, to travel on and on in a journey which can never be completed. Hoed your ways, therefore; for the eye of God watches over us physically as well as spiritually; the deed of to-day is to become part of the universe, and to be kept speeding on through starry spaces and silvery galaxies for an eternity to come.†

Possibly the spirit of man may hereafter be permitted to read these revelations of the star-light, when, separated from earthly scenes, he soars upward amid the stars, and looks upon the picture of his own life treasured up there in the blue expanse, and winging its flight from world to world upon the pinions of the lovely star-light. What, then, will be his emotion as the scene wherever he played the coward or the tyrant comes before him, and in pain and shame he

* In proof of this, witness the geographical features which may be seen of the moon, the planets, Mars and Venus, by the aid of a telescope. Jupiter, further distant still, yields something regarding his aspect; and Saturn, more distant still, a few features of its physical condition.

† Simple possibility is all the writer deems necessary in the enunciation of this idea, which is well-rooted in the laws of physics. Such exceptions as may occur in regard to events which take place in houses and places which impede the passage of light, are of no moment in the statement of a general truth. For the thought itself, the writer is indebted to a little work entitled "The Stars and the Earth; or, Thoughts upon Space, Time, and Eternity." Builliere, 1847."

feels impelled onward as the picture speeds,— watching its progress through all the starry cluster, crying as it goes, “Stars, stars! behold the story of a man!” Will he dwell in those stars hereafter, and join in the melodies which they sing while hurrying in majestic sweep around the throne of the father? Who knows but such may be?

“If yon bright orbs which gem the night
Be each a blissful dwelling sphere,
Where kindred spirits re-unite
Whom death has torn asunder here;—
How sweet it were at once to die,
And leave this weary world afar,
Mist soul in soul to clear the sky,
And soar away from star to star.”

Well, as the holy star-light stoops down to bless the eye with its lustre, and the mind with its revealings, may it come even into our hearts as a ray from the Divinity, teaching us to love while we live; and, like the stars, to sing and circulate without jar serenely together.—*Familiar Things.*

BEAUTY EVERYWHERE.

We all of us, in a great measure, create our own happiness, which is not half so much dependent upon scenes and circumstances as most people are apt to imagine; and so it is with beauty. Nature does little more than furnish us with the materials of both, leaving us to work them out for ourselves. “Stars and flowers, and hills, and woods, and streams, are letters, and words, and voices, vehicles, and missionaries,” but they need to be interpreted in the right spirit. We must read, and listen for them, and endeavor to understand and profit by them. And when we look around us upon earth, we must not forget to look upward to heaven; “Those who can see God in everything,” writes a popular author, “are sure to see good in everything.” We may add with truth, they are also sure to see beauty in everything and everywhere. When we are at peace with ourselves and the world, it is as though we gazed upon outward things through a golden-tinted glass, and saw a glory resting upon them all. We know that it cannot be long thus; sin and sorrow, and blinding tears, will dim the mirror of our inmost thoughts; but we must pray and look again, and by-and-by the clouds will pass away. There is beauty everywhere, but it requires to be sought, and the seeker after it is sure to find it; it may be in some out-of-the-way place, where no one else could think of looking. Beauty is a fairy; sometimes she hides herself in a flower cup, or under a leaf, or creeps into the old ivy, and plays hide-and-seek with the sunbeams, or haunts some ruined spot, or laughs out of a bright, young face. Sometimes she takes the form of a white cloud, and goes dancing over the green fields, or the deep blue sea, where her misty form, marked out in momentary darkness, looks like the passing shadow of an angel’s wing. Beauty is a coquette, and weaves herself a robe of various hues, according to the season,—and it is hard to say which is the most becoming.

GOOD COMMON CAKE.—Take six ounces of good common rice, the rice must be ground, and the same quantity of flour, the yolks and whites of nine eggs, half a pound of sugar, and half an ounce of caraway seeds. Mix well together, and bake for an hour in a quick oven.

CUSTARD PUDDING BAKED.—Boil a pint of cream, with three blades of mace or a stick of cinnamon; when cold take four yolks and two whites of eggs, nutmeg, and sugar to taste, beat them well, and stir into the cream, pour into cups, and bake in a quick oven.

WHITE SPRUCE BEER.—Take six pounds of white sugar, four ounces of essence of Spruce, ten gallons of boiling water, and an ounce of yeast. Work the same as in making ginger beer, and bottle immediately in half pints. Brown spruce beer is made with treacle instead of sugar.

CURRENT WATER.—Take a pound of currants, and squeeze into a quart of water; put in four or five ounces of pounded sugar. Mix well, strain, and ice, or allow to get cold.

EFFERVESCING LEMONADE.—Boil two pounds of white sugar with a pint of lemon-juice, bottle and cork. Put a table spoonful of the syrup into a tumbler about three parts full of cold water, add twenty grains of carbonate of soda, and drink quickly.

FOR A COUGH.—Half an ounce of marsh-mallow root, half an ounce of liquorice root, both shred fine; boil in a pint and a half of water, until reduced to a pint. Strain it, and sweeten to taste with brown sugar-candy. Take half a tea-cup full in the same quantity of new milk, three times a day, particularly fasting, and the last thing before going to bed. Asses’ milk may be more effectual, when it agrees with the patient.

GREAT SALE OF SUPERIOR THOROUGH BRED SHORT-HORN CATTLE.

The Subscriber will offer for sale, his entire herd of choice short horns, comprising 50 head, young and old at Public Auction, on Wednesday, the 13th of October, 1852, at One o’clock, P. M. at his Farm 2½ miles from the City of Troy; reserving to himself one bid on five Cows and Heifers and one Bull, say six head in all, and these to be pointed out previous to the commencement of the sale; this bid will be made public when the six animals are brought to the stand for sale. Should any gentleman advance on the single bid made by the proprietor, the highest bidder will be entitled to the animal. It is proper to say, the severe drought in this vicinity reducing the hay crop one half, has decided the proprietor to make this sale at the time named, instead of next June, which he had purposed to do.

The well established reputation of this herd in this Union, and in Canada, and the splendid herd it has measurably sprung from viz; the famed herd of that eminent English breeder, the late Thomas Bates, Esq., renders it hardly necessary to comment upon its superior merits. It may not however be inappropriate to remark, that the establishment of this herd was commenced in 1838, and that the most careful attention has since been paid to its breeding, and it now contains mostly all the reserved stock of two former public sales. Since 1840, the proprietor has imported from the late Mr. Bates, and his friends and late tenants the Messrs. Bells, 7 head of short horns; and besides these he has now on the passage across the Atlantic, shipped 21st. June, on board the Packet Ship Kossuth, Capt. J. B. Bell, a superior yearling roan Bull, having many crosses of the famed Duchess Bulls of Mr. Bates. Including this latter animal and

the two beautiful red roan 3 year old Heifers, which came out from England last September, "Yarm Lass" and "Yorkshire Countess" and the beautiful Heifer Calf of the latter animal, got in England by the Duchess Bull 5th Duke of York, there will be 14 head of this imported stock, and its immediate descendants. There have been sold from this herd but three Heifers from these importations, and these Cows were sold at \$389 each. All young Bulls bred from these Cows, except those now offered for sale, have also been sold at private sale, at \$300 each, most of them while quite young.

Besides these 14 head of high bred animals, the noble premium Cow, Esterville, 3rd, bred by B. P. Prentice, Esq., of Albany, and her equally fine 2 year old, red and white Heifer bred by me, got by the Bates Bull Meteor, and three of the famed milking Willey tribe, the same tribe of Cows as the Heifer Ruby, sold by me to Mr. S. P. Chapman of Madison Co. and which Cow was awarded the first premium by the New York State Agricultural Society, for producing the largest quantity of butter in 10 days in June, and 10 days in August, on grass pasture only, being a traction over 40 lb. in those 20 days. There are other valuable tribes in the herd, as the printed catalogue will show.

The Catalogue will be ready for distribution about the 1st of August, and will exhibit richness of pedigrees rarely to be met with, showing the descent of the most of the animals, from the best animals on record in the English herd book. Having received an invitation from H. Strafford last winter to forward a list of the pedigrees of my herd to be inserted in the forthcoming volumes of the English herd book of which Mr. Strafford is now the Editor, several pedigrees were sent to him of the animals here offered for sale, and will appear in said book.

A credit of 9 months will be given on all sums up to \$300, and 9 and 18 months on all sums over \$300, for approved paper, with interest payable at some Bank in this State.

Troy, New York, July 9, 1852.

GEO. VAIL.

Letters



Patent.

TIME & LABOR SAVED ARE MONEY EARNED!

B. P. PAIGE & Co., SOLE PATENTEES.

THE Subscribers having had secured to themselves the exclusive right to Manufacture and vend to others to use, in the Territory of Upper and Lower Canada,

SEVERANCE'S PATENT IMPROVED HORSE-POWER AND THRASHING MACHINE,

One of the most Valuable Machines ever invented for saving labor and time, respectfully inform the Public that having greatly enlarged their Extensive Establishment on Wellington Street, now extending through from Prince to George Street, which will give them ample room and accommodations, they trust, to enable them hereafter to supply the whole Farming Community of Canada, with a machine that will thrash and clean more grain in a day with less expense and more neatness than any other Thrashing Machine in use, and requiring but Two Horses.

We beg leave to say to our Customers & Friends, that we are again prepared to furnish those in want of Thrashing Machines, with an article superior even to those heretofore manufactured by us. Our long experience in making, and the very liberal patronage we have enjoyed in the sale of our Machines, has, together with a constant determination to produce an article that will never fail to excel all others, caused us to watch carefully all the improvements that could be made from time to time, until now we feel confident in saying, that for durability, neatness of Work and amount of it they can do, our Thrashing Machines are unequalled by any in use, and while the grain is thrashed clean, and none of it broken or wasted, it is at the same time perfectly cleaned, fit for the mill, or any market.

One of the above named Machines, will give a man, with proper diligence and attention, an income of from five to eight hundred dollars a year, as appears by the statements of a great number of gentlemen, who thrashed last season, and have kindly given us permission to refer customers to them for information in regard to the operation of our Machines.

Whereas, Letters Pat. were obtained, bearing date March 5, 1849, on said Machine, the public are cautioned against purchasing, using, and manufacturing any imitation article, as all infringements will be dealt with according to the law of the land. All the genuine Machines will be accompanied by a Deed, signed by B. P. PAIGE, the owner of the right, giving the purchaser the right to use or transfer the same.

All orders addressed to us, or to **WILLIAM JOHNSON**, our Agent, will be promptly attended to. Machines shipped to any Port in Upper or Lower Canada, and every one warranted to be as good as recommended.

B. P. PAIGE & Co.

 The Agents for the sale of the above Machine in Canada West are as follows:—Workman, Woodside & Co., Toronto; Joswell Wilson, Ancaster; Horatio A. Wilson, Westminster; M. Anderson & Co. London; Mr. Samuel Young, Asphodel. 66s-6m

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