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THE CANADIAN AGRICULTURIST

AND Transactions

OF THE
BOARD OF AGRICULTURE OF UPPER CANADA.

VOL. IV.

TORONTO, JULY, 1852.

NO. 7.

A REPORT ON THE STATE OF AGRICULTURE IN THE COUNTY OF HASTINGS;

By Wm. Hutton of Belleville.

TO WHICH WAS AWARDED THE PRIZE OF FIFTEEN
POUNDS, BY THE BOARD OF AGRICULTURE
OF UPPER CANADA.

LOCALITY.

The County of Hastings is bounded on the West by the Counties of Northumberland and Peterboro'; on the South by the Bay of Quinte; on the East by the County of Lennox; and on the North by unsurveyed wilderness. The Western boundary is one hundred miles East from the City of Toronto. The County has several harbours on the Bay accessible by large steamers at all times during navigation. It is about thirty miles wide and forty-four deep, and contains a very large extent of rich arable land, and is well watered by never-failing streams. It contains twelve Townships, but there are two in which there are no inhabitants, in Lake and Grimsthorp; and one, viz., Tudor, in which there are only about seventy.

POPULATION.

It contains a population of 31,977 souls, and the County Town is Belleville (situated on the Bay at the mouth of the river Moria), which contains 4569 inhabitants.

NATURE OF SOIL AND SUBSOIL.

The soil is of a very superior description—about one-third of heavy clay—one third dark mucky loam, and one third gravelly and sandy loam. The subsoil is about one third heavy retentive clay, and the other two-thirds porous limestone gravel, occasionally limestone rock, and in a few situations a red sand, not however ferruginous nor injurious to vegetation.

VALUE OF LAND.

The value of improved farms in the front five concessions of the front Townships is from £1 to £10 per acre—say average £7. From that

to rear of second range of Townships from £3 to £6—average about £3 15s., and for improved farms in the rear Townships from 25s. to £3 per acre—average £2; and for wild lands from 5s. to 30s., according to quality and locality. The Government price is 8s. per acre.

AGRICULTURAL SOCIETIES.

It is about ten years since the first County Agricultural Society was established. This was followed in a few years by the establishment of Branch Societies, but not until lately have they effected much good.

As the working of them becomes better understood and experience is acquired in their management, the amount of good which they do extends in an increasing ratio. The Agricultural mind required time to prepare it to receive knowledge, but the fruit is now every year improving in quality and abundance.

The good which they have done in this County is now very apparent, and truly gratifying to those who have been connected with them since their formation.

These Societies have enabled the Farmer to procure seeds of various kinds from a distance, giving him the benefit of a change which his private unaided means could not accomplish.

By the association of numbers together, they have been the means of creating a rivalry and competition and honourable emulation in the management of farms far more than the mere desire of obtaining money premiums creates.

They have enabled him to import and cause the manufacture of labour-saving machines of the best description.

They have enabled him to procure at an easier rate clover seed and plaster to increase the quantity and quality of winter food for cattle—they have enabled him to pay for the importation and use of the best descriptions of sheep and cattle to consume the extra food so procured—have enabled him, by associating with

his brother Farmers, to hear and to communicate an interchange of knowledge and experience in Agricultural matters; and by the concentration of a general fund for particular objects, have enabled him to devote more time and attention to domestic manufactures of butter, cheese, woollen cloths, satinets, blankets, counterpanes, shawls, socks, and even carpets—being assured that he will be remunerated for such extra attention, not merely by the money premiums given, but by the very notoriety which the association of numbers does not fail to secure.

They have enabled the farmer in the same way to improve the breed of horses, and also to cultivate finer fruits and vegetables, and they can and will be made the means of enabling him to diverge into the growth and cultivation and manufacture of varieties of crops, such as flax or hemp, or sugar beet, which it may become necessary to cultivate should the wheat crop continue to prove a failure, or of so low a price as to be unremunerating—by enabling him to procure this *joint* pecuniary means, the required seed or machinery for preparing these new varieties for market.

Another advantage which they have is that they facilitate the dissemination of knowledge through the means of publications such as the *Agriculturist*, *Hind's Lectures*, and other useful works; many of which, Societies are in the habit of subscribing for, and have through their *associated* funds more extended means of disseminating than private individuals unassociated could possibly enjoy. Combinations or associations of men can always effect much more good than individuals separately. Connected with the County Society were five Branch Societies, viz.:

Name of Township Society	Amount subscribed.			Proportion of Grant.			Number of members.
	£	s.	d.	£	s.	d.	
Sydney,	9	10	0	14	15	0	38
Thurlow,	12	15	0	20	0	0	51
Tyendinaga ..	19	5	0	30	0	0	77
Rawdon,	6	15	0	10	10	0	27
Huntingdon, ..	12	0	0	18	15	0	48
	<hr/>			<hr/>			<hr/>
	£60	5	0	£94	0	0	241

In addition to these 241 members there were 215 members of the County Society, and the largest amount allowed by Government to each County, viz., £250, was received therefrom and expended in premiums for every variety of farm produce, stock, implements, and domestic manufactures, and the importation of seeds, plaster, live stock, &c.

LIVE STOCK.

Durham and Devon cattle have been in the County for about eight years—the latter seem to be the most appreciated; but the Society

last autumn purchased for £55 a full bred imported Ayrshire Bull, the service of which is to be free to all members. The Society is not yet sufficiently acquainted with the advantages of this breed of cattle to be able to speak with certainty as to the value; but, from appearances and information obtained from other quarters, they are of opinion that the Ayrshires will prove the very best milkers; and butter and cheese being staple commodities, the prices of which are almost always remunerative, the Society have great hopes that the propagation of this breed will effect much for the Farmer, provided he increase the growth of green food and clover to afford the extra nourishment which all imported stock requires, and in fact all stock other than native Canadian.

SHEEP.

The Society has also imported a considerable number of Leicester and Southdown sheep, and find that by crossing them, they have both in carcase and fleece what is more serviceable to the country than any other description of sheep. The average weight of fleece of this improved breed, when well taken care of in winter, is about 4 lbs., and the carcase from 15 to 20 lbs. per quarter, the mutton of very excellent quality, the wool quite fine enough for domestic purposes, and the animal hardy and not subject to disease of any kind.

HORSES.

The County abounds in beautiful and excellent horses of every variety of breed, there being 6966 of all ages. Many are sold to the Americans at good prices, ranging from £15 to £30 each, and one or two at £35 each. The rearing of good horses, which is much encouraged by the Society by handsome premiums, is at present one of the most profitable of the farmer's pursuits, the prices given for them paying better in proportion than those for any other species of stock.

IMPLEMENTS AND MACHINES.

Having many and extensive foundries in the County, the competition has been so great that the farmers are supplied with the very best descriptions of implements and machinery of all kinds at very moderate rates. We have had a wheat drilling machine for some years, but the farmers who used it did not perceive any benefit to arise from its use, and have hitherto adopted the old broadcast system of sowing in preference. We have also ploughs of every variety. The improved Scotch (the mould for which was made by a farmer of the name of Peter Spence, resident in the County), and the Prescott ploughs appear to be highly prized and are in very general use. The matter of weight or lightness of draught is much better understood

than formerly, and in fact all our implement manufacturers keep pace with the most important improvements in their several branches; our threshing machines and separators are of the best known; and latterly we have procured concaves for threshing out clover seed, which are much improved and which work most effectually, threshing out and cleaning for market ten or twelve bushels in a few hours.

MANURES.

There has been very little attention paid to manures in the County other than piling it in the yards in which it is made in order to create fermentation and destroy the seeds of weeds which may be amongst it, and drawing out in summer on to the summer fallows which it is still too much the custom to have. There are some farmers, however, and the number is increasing every year, who draw out their manure in the autumn and plough it down so as to have the land early ready for drilled crops—Indian corn, potatoes, turnips, mangel wurtzel, &c.; under this procedure they seldom fail to have good drilled crops, and these are in fact the foundation of all good farming, both because the crops themselves are the most remunerating, if sold in the market, and they leave their blessing behind them in the shape of improved land, improved cattle, and increased and improved manure, a harbinger of still further progress. It is much to be regretted that there is no attention paid in the County to the saving and preserving separate the liquid manure, which is so much more beneficial than the fæces.

The Society have turned a great deal of attention to the furnishing of plaster for application to clover, corn, pease, mangel wurtzel, &c., and its members have found very extended benefit to arise from its use. It may perhaps be termed rather a stimulant than a manure. It appears to draw down the dew of Heaven upon the plant and to retain it there long after it has disappeared from portions of the land not sowed with it. It is in fact the only chemical artificial stimulant which we have, and it can be had in the County at 4s. per bbl. of 300 lbs. It supplies the place in some degree of the artificial manures so easily procured in the Old Country, such as guano, bone dust, oil cake, &c., and after a top dressing of plaster, the land is very much improved for the reception and growth of the succeeding crops upon the principle that a good *mothering* crop of clover or pease is beneficial to the land, whilst a poor crop of the same is injurious to it. With regard to bone dust, it is much to be regretted that in a country where so much meat is used in proportion to the population, the bones should be allowed to go to loss when it is known that they are so very enriching to the land, and when applied to the growth

of turnips, so certain to produce the finest possible crops. The Society have it in contemplation to offer a premium for the best ton of bone dust.

DOMESTIC MANUFACTURES.

The Society has also turned much attention and devoted considerable sums to the encouragement of domestic manufactures, which have reached a high state of improvement. There was at the last County Show a very large display of fulled cloths, satinets, shawls, counterpanes, blankets, &c., and of very excellent description.

Within the last year there were manufactured within the County, by and for the farmers, exclusive of what the manufacturers made on their own account, 22,712 yards of fulled cloth and 52,298 yards of flannel, both together amounting to 2½ yards for every individual in the County, the population being 31,977. A very large proportion of this wool, probably 7ths of the whole, is spun at home at the farm houses—much of it is also woven by the farmers and their families; the price of weaving is from 5d. to 7½d. per yard, the latter price being given for checks and difficult patterns; the price of fulled cloth is from 3s. 9d. to 4s. 6d. per yard; that of flannel of checked patterns for women's wear from 2s. 6d. to 3s. 9d. per yard, and that of plain home made flannel from 1s. 9d. to 2s. per yard. These prices are fully one-third lower than they were five or six years ago; but after deducting the cost of carding, weaving, dyeing, &c., the farmer realizes from 1s. 1d. to 1s. 6d. per lb. for his wool as it comes from the sheep's back—average probably 1s. 2d. per lb. There are in the County 34,936 sheep, being 21 to every 200 acres occupied, and 92,420 lbs. of wool, being 2 lbs. 10½ oz. per fleece. Calculating the fulled cloth at 4s. per yard, and the flannel of all kinds at 2s., the amount is £9,772 4s., showing that this is not an unimportant branch of our domestic manufactures, and this is independent of what the carding mill owners make on their own account.

LINEN AND FLAX.

As to linen there were only 125 yards made within the County. The climate and soil seem to be well suited for the growth of flax, but farmers will not go into the cultivation of it until they see some prospect of being able to get it scutched and prepared for market.

If the Canada Company imports a model machine for scutching, of simple construction that could be attached to a common horse power, there is no doubt that many more of them will be immediately made and the crop soon more extensively cultivated.

SUGAR.

We have as yet no manufactories in the

County for making beet root sugar; our capabilities of producing beet root very abundantly, can no longer be doubted. It is one of those largely leaved succulent plants that grow so luxuriantly and speedily in our climate that it can be produced at 15s. per ton, so as to realize a fair profit to the farmer, and at this price the experience of Germany, France, and Ireland proves that sugar of first rate quality can be produced at 3d. per lb., and perhaps even 2½d.; the machinery required is simple and inexpensive, and the Society would, perhaps, find it advantageous to encourage its erection by giving a handsome premium for the production of a good home made article, and will probably take the matter into consideration.

The maple sugar made within the County last year was 115,469 lbs., i. e. 57 tons, 1½ cwt. and 69 lbs., rather more than 3½ lbs. for every individual in the County, and yet the consumption of imported sugar is so very great as to merit the attention of every Society to procure a home supply from beets. The importation is about eight times the amount of that procured from our maple trees.

BUTTER AND CHEESE.

The total quantity of Butter made in the County is 623,675 lbs. and cheese 83,279 lbs.; and the number of milch cows is 10,082, making 62 lbs. of Butter, and 8½ lbs of cheese per cow—equivalent to 67 lbs of butter per cow per annum.

The price of butter varies from 6d to 1s per lb., and cheese from 4½d to 7d, according to the ratio that the supply bears to the demand. Both are made of excellent quality in the County and in fair demand at almost all times. This quantity amounts to 19½ lbs of butter for every individual and 2½ lbs of cheese.

FOUNDRIES.

Having alluded to our implements and machinery before, it may be requisite only to observe that in the abundance and excellence of our Foundries, the County derives very great advantage, because not only are good labor-saving machines *in themselves* of vast importance to the Farmer, but the facility with which he procures them, without having to go to a distance for them is a very great saving of time and expense.

CARRIAGE FACTORIES.

In addition to Foundries we have extensive and numerous Carriage Factories; and nothing shows the prosperity of a county more than the increase of the number of pleasure carriages. They are all built and paid for from surplus money and surplus time, and would not be built if the exigencies of the County demanded the time and money. Twelve years ago there were

not twenty pleasure wheel carriages in the County, and now there are upwards of seven hundred! Concomitant with these is the proportionately increased demand for harness and harness leather, much of which is made within the County.

POTASH.

Another very important article of manufacture is Potash. The export of this article in 1851, was 2,657 brls, which at an average of £7 per brl, brought into the County £18,599. The abundance of lime in the County enables the Farmers in the back concessions to manufacture *Pot* ashes;—*Pearl* ash being seldom made here.

LUMBER TRADE.

But by far the most important manufacture of the County is that of lumber. During last season there were exported from the County above 14½ millions of feet of sawed lumber—all to the American market.

This afforded employment to many hundreds of laborers who are home consumers of Agricultural produce, felled cloth, &c., and afforded also a most extensive outlet for the sale of coarse grain, Hay, Pork, &c., which have realized very fair prices to the grower.

This amount of lumber at £2 per 1,000 feet, brought into the County £29,101 7s 2d, and is a manufacture which is rapidly increasing, as the County affords an endless supply. This is exclusive of a very large amount of square timber which was rafted to Quebec, and which probably produced about a similar amount of money.

By referring to the tabulated form of averages given herewith, page 199, and carefully compiled by leave of the Census Commissioner, it will be observed that the average of the wheat crop is extremely low. The total acres being 27,082—total bushels 265,075; the average being only 9 bushels and 49½ lbs. of wheat per acre. To account for this it must be observed that the Weevil has been very destructive, having been two years in the County, and in its journey westward has reached about the centre of our western tier of Townships, some few instances have occurred of its having been found beyond that limit. We cannot but expect that next year it will be still more destructive; one fact, however, is well established, that in *early* situations, on *early* spots, where the seed was sowed *early*, there was little or no weevil. In low, damp, late situations and where late sown, it has been extremely destructive, especially in the Eastern part of the county, where it first appeared.—This important fact ought to be well remembered by our neighbours to the West of us, where they will have it undoubtedly in a very short time, and exertions ought to be used by them to sow

early, and early kinds of seed, to drain the land well and make small ridges, and otherwise expedite the growth as much as possible. The early sowed Sole wheat escaped last year, in many instances, in the very centre of the weevil's destructive ravages. The maggot is generated from a fly blow deposited in the blossom by a very small greyish fly with a small stripe of orange down the back, and it is most busy when the wheat is in full blossom, about the first of July.

Another way of accounting for our unusually low averages of wheat is—that a great deal of our best and earliest, being unprotected by snow last winter, was actually killed by the intensity of the frost—not wintered out as is common in Spring, but actually killed in the depth of winter; there being some few days when the thermometer stood 16 degrees below zero, and no snow to protect the wheat in open situations.

Another reason is that the number of acres of wheat being too large a proportion to the acres of cultivated land, in proportion to our means of manuring. There are 27 082 acres of wheat and 127,876 of cultivated land, making about two acres of every nine, or 22 in every 100 under wheat.

These bad crops and present low prices will give a great check to the growth of wheat, as farmers must turn their attention to other branches of agriculture.

The actual cost of raising a bushel of wheat (even with an average crop of 17 bushels per acre, the usual average), is 3s 6d per bushel. Thus—on the summer fallowing system almost universally adopted in this County—the expense is—

To two years rent on interest of value of cleared land at 10s per acre, the cleared land on each farm having to pay interest for the wild land - - - - -	£1 0 0
To one-third of expense of manuring the land, the other two-thirds being charged to the following crops at 25s per acre - -	0 8 4
To Seed, seven pecks at 4s. per bushel - -	0 7 0
To three plowings and draggings and rolling and water furrowing - - - - -	1 0 0
To cradling and binding an acre at 5s per day, for men boarded - - - - -	0 8 3
To drawing in, threshing, cleaning, and taking to market at 6d per bushel - - -	0 8 6
	£3 10 1

Deducting 10s for straw, this leaves the actual cost of raising an acre of wheat £3, which at 17 bushels is as nearly as possible 3s. 6d. per bushel.

The average price this season has been only 3s 4d, so that the farmer has not even laborers' wages at this price—but when the average is unfortunately (as it is this year) less than ten bushels per acre, the loss upon the wheat crop is

about 24s per acre; the cost of raising an acre of *poor* wheat being very nearly the same as that of raising an acre of *good* wheat. The rent, seed, ploughing, dragging, cradling, binding, and drawing in, and cleaning, being exactly the same, the threshing and taking to market only being a trifle lower, but always counter-balanced by the *quality* being also deficient.*

Spring grain, Barley, Peas, and Oats, and in some cases Indian Corn, and also Hay have paid the farmer much better than wheat this year, the great increase in the lumber trade has created a great demand for coarse grain and Hay.

POTATOE CROP.

The great failure in the Potatoe crop is unaccounted for by the most scientific men of all countries and still remains a mystery. Liebig himself is quite at a loss—he supposes it to be occasioned by something peculiar in the *air*, but as the disease is over the whole world at the same time, is it probable that the air *everywhere* could be infected? This at all events we know that our average crop which used to be 180 bushels, is this year only 50 per acre.

The average expense of raising an acre of Potatoes stands thus—

One year's Rent or Interest	£0 10 0
Three ploughings and draggings.....	1 0 0
One third of Manure.....	0 8 4
Seed 12 bushels at 2s.....	1 4 0
Moulding, cleaning, and weeding per acre..	0 5 0
Ploughing out and storing 180 bushels....	0 15 0
Taking to market at 2d. per bushel.....	1 10 0

Total expense of cultivating an acre of Potatoes.....£5 12 4

* The extremely low average of wheat referred to by the author, should be regarded as purely *exceptional*; and the causes which have produced such a result in the County of Hastings, must be understood as operating within limited areas. The weevil wears itself out in the course of a few seasons; and much lies in the power of the cultivator to arrest or modify its progress, as stated in the report. It is but seldom that wheat is so extensively killed in winter, in the manner described, even in the coldest and most exposed localities of the Province. And we believe that there is no portion of this vast Continent better adapted, both in point of soil and climate, to the production of wheat,—and other ordinary agricultural cereals, than UPPER CANADA: but under altered circumstances, chiefly of a fiscal nature, originating with the Mother Country, it now behoves our farmers to pay more attention to articles which hitherto have been little thought of, but which may be made of great service in a more comprehensive, ameliorating, and profitable system of Husbandry, which is, we have good reason to hope, on the eve of being gradually and generally introduced. Old Country readers should remember that the *Western Peninsula* of Canada, enjoys a winter not only much less severe, but a month or six weeks shorter, than the Eastern portions of British America, and the North Eastern States; and affords a wide and most encouraging field for the profitable employment of Capital and intelligent, persevering Industry.—[EDITOR.]

If an average crop thus amounts to 7½d per bushel, but with an average of only 50 bushels the cost is 2s. per bushel; when the price is even 1s 3d, and the crop an average one, they are the most profitable of all crops.

INDIAN CORN.

The crop of Indian Corn for 1851 is also short of an average, the early Spring being very cold and much of the seed having perished in the ground. The stalks are of considerable value for feeding cattle, and when Pumpkins are grown along with it, an average crop is considered remunerating.

FENCES.

One word with regard to fences, the permanence and security of which are of such importance to every farmer.

The County possesses an abundant supply of White Cedar, which, when well put up, forms a substantial and permanent fence.

Many of our farmers have adopted the plan of driving in two sharpened cedar stakes, one on each side of each angle of the common serpentine fence, confining them above with a piece of board having two holes bored at the required distance to admit the stakes and then laying a rail over these pieces. By this simple and inexpensive method the fence is perfectly secure, never being blown down by the highest gales, and for general agricultural purposes is certainly the best fence that can be built.

IRON ORE IN MADOC AND MARMORA.

It may be well further to observe in this County Report that in two of the Townships—Madoc and Marmora—there is an unlimited supply of Iron Ore of very excellent quality, containing from 30 to 50 per cent of a first rate description of Iron. The Marmora Foundry Company have expended large sums of money, and there are at present Buildings and Works erected and ready to be put into operation, and the Companies interested having put them in order are anxious to procure tenants either to rent or purchase.

The Railroad to Georgian Bay if it be built will pass within five miles of the Marmora Works, and also near the Madoc Works.

PLANK ROADS.

Independent of projected Railroads which are likely soon to be put in operation, the County has within itself, made 27 miles of Plank and Gravel Road within the last year in the most desirable situations where good roads were most required, and there is quite a spirit of emulation in the County to possess good roads. In two or three years we shall have them extending in every direction over the whole County.

When the Grand Trunk Railway is completed which there is now every prospect of, the

County of Hastings will maintain a most desirable position. The richness of her soil—the richness of her ore—the abundance of her water power—the Intelligence and Enterprise of her Inhabitants—her local position—her prodigious export of Bread stuffs and Lumber—her never failing supply of this latter valuable commodity—her immense home consumption of farm produce—her beautiful and navigable Bay, forming her southern boundary—all these will draw public attention to Hastings as an important agricultural and commercial County and there is little doubt but that she will continue to advance as she has hitherto done and even with more rapid strides as she becomes better known.

This report having been duly submitted to a meeting of the Directors of the County Agricultural Society was found to contain "a truthful view of the agricultural condition and industrial pursuits and prospects of the County," and is respectfully submitted to the Agricultural Association of Canada West.

See tabulated form below, carefully calculated and compiled by leave of Census Commissioner, and page — containing information, obtained from Customs Department of the Town of Belleville.

B. F. DAVY,

President of the County of Hastings Agricultural Society.

March 30, 1852.

Exports from the County of Hastings to the United States during 1851.

Articles.	Quantity		Value.
	cwt	q lb	
Butter.....	2	14	7 7 0
Oats.....	13,863	Bushels.....	828 17 0
Flour.....	2,589	Barrels.....	2,476 13 0
Rye.....	4,804	Bushels.....	499 5 0
Grass Seed.....	890	do.....	216 10 0
Peas.....	11,727	do.....	1,299 9 6
Fish Salted.....	7	Barrels.....	8 15 0
Wool.....	12,723	lbs.....	686 1 9
Potatoes.....	118	Bushels.....	12 5 0
Barrel Hoops.....	44,500	25 0 0
Shingles.....	167	M.....	108 4 0
Spokes.....	11,480	22 18 3
Laths.....	679	M.....	245 2 6
Sawed Lumber.....	14,573,535	feet.....	29,101 7 2
Cedars.....	286	cords.....	103 10 0
Saw Logs.....	2,800	700 0 0
Cranberries.....	5	Bushels.....	2 10 0
Potash.....	68	Barrels.....	476 0 0
			£36,819 15 2

Produce Shipped from Belleville to various parts of the Province of Canada, during the year 1851.

Flour.....	17,954	Barrels.
Wheat.....	36,851	Bushels.
Peas.....	10,851	do.
Butter.....	566	Kegs.
Pork.....	321	Barrels.
Ashes.....	2,589	do.

Potatoes	34 Bushels.
Lard	14 Kegs.
Grass Seed	330 Bushels.
Cattle	348 * Head.
Sheep	20 † Head.
High Wines	455 Puncheons.
Wrapping Paper	131 Bundles.
Iron	102 cwt.
Wool	20 Sacks.

* These only include what are shipped by Steam-boat, great numbers are driven through.
 † Do. do. do.

what is made by manufacturers in Belleville, on their own account probably 20,000 yards.
 Total Maple Sugar 115,469 lbs., being upwards of 3½ lbs. to each Inhabitant.
 Total Sheep 34,936, being 21 to every 200 acres occupied, and 27 to every 100 acres cultivated.
 Total Wool 92,420, being 2 lbs. 10½ oz. per fleece.
 Total acres of Wheat 27,082, being about 2-9ths of all the cultivated land, or 22 acres in every 100.
 Total bushels of Wheat 265,075, being 9 bushels 49½ lbs. per acre; being 3 bushels and 2-7ths for each Inhabitant.
 Total Beef 1,762 barrels.
 Total Pork 12,600 barrels.
 Total number of Horses of all ages, 6,662—Independent of the Town of Belleville which contains 30½ horses, and 335 cows.

Total number of Cows, not including Belleville, 10,082; Total pounds of Butter, 623,675; Total pounds of Cheese, 83,279; making 62 lbs of butter and 8½ lbs of Cheese per cow, equal in all to 67 lbs of Butter per Cow per annum, independent of that made in Belleville which is 6090 lbs of Butter.
 Total land, occupied 332,349 acres, being 10 2-5th acres for each individual.
 Cultivated acres 127,876; Wild, 204,473; being four acres for each individual in the County.
 Total land under crops 95,096 acres, being about ¾ ds. of all the cultivated land,—the other third being under summer fallow and pasture and being about 2¾ acres under crop for each Individual in the County.
 Total Paper made in the Town of Belleville, forty tons.
 Total Flannel and Cloth made in Belleville by manufacturers, about forty thousand yards.
 Total pairs of Lasts manufactured—fifty thousand.
 Total Sashes manufactured by machinery—200,000 lights, and 1,000 sets of blinds.
 Number of Grist Mills in the County—20.
 Number of Saw Mills in the County—47. Four of these Steam Saw Mills, one Grist Mill, and four Saw Mills in the course of erection; other Mills in the County for Carding, &c., &c., about 33.

BURNING OUT STUMPS.—Where there are but a few stumps in a field the stump machine cannot always be used advantageously, and the expense of applying it would exceed the advantages. I have found that large stumps which it is not practicable to remove by ordinary means, may very easily be got rid of by the following simple process. After a period of dry weather, when the exposed portions of the stump are dry and tindery, cover it with a quantity of dry combustible matter, such as shavings, small sticks of wood, rubbish of any kind, and sprinkle over and through the mass, a few pounds of rosin, or a bucketful of tar. Over this place a close and compact laying of turf, grass side in, in the same manner as the covering is applied to a coal pit, and ignite the wood through an opening at the base—a hole being left at the top to produce the requisite draft till the fire is fairly kindled. Manage just as you would were you burning a coal-kiln, and let the burning continue till the stump and its roots are completely consumed. The ashes will make a good top-dressing for the adjacent soil, and the obstacle will be removed effectually, and at a small cost. An hour's labour will do it.—*Germantown Telegraph.*

STATEMENT OF CROPS AND PRODUCE FOR THE COUNTY OF HASTINGS, FOR THE YEAR 1851.

TOWNSHIP.	COUNTY OF HASTINGS.	POPULATION		AVERAGE PRODUCE PER ACRE.										AV. PER COW.			AV. AGE FULLED PER FLEECES.		PER CLOTH.		PLANNING.	
		Male.	Female.	Wheat.	Barley.	Rye.	Oats.	Br. Whic.	In. Corn.	Potatoes.	Turneps.	Butter.	Cheese.	Wool.	Yards.	Yards.	Yards.	Yards.	Yards.	Yards.		
Sidney		4574	4129	12	20	101	171	19	203	50	371	691	111	2-11	4083	8693	8403	8403	8403	8403		
Thirrow		4469	4200	12	20	12	155	19	214	50	371	691	111	2-11	4083	8693	8403	8403	8403	8403		
Pyndingna		6200	6-5	11	23	11	155	19	214	50	371	691	111	2-11	4083	8693	8403	8403	8403	8403		
Randon		3007	13-30	13	13	104	161	171	221	382	100	523	113	2-11	4083	8693	8403	8403	8403	8403		
Hungerford		3124	7-20	20	20	64	161	171	221	382	100	523	113	2-11	4083	8693	8403	8403	8403	8403		
Huntingdon		2548	11-23	181	92	92	144	201	121	17	51	130	611	2-12	2689	6202	6202	6202	6202	6202		
Hudock, Elkhorn? and Tudor.}		2761	10-47	10	10	81	111	221	101	13	71	110	691	2-12	15301	4480	4480	4480	4480	4480		
Marmora		635	12-0			10	13	26	6	13	501	190	34	21	3-9	649	1725	1725	1725	1725		
Bellefleur Town.		4569																				
Total Population		31,977																				

N. B.—These calculations do not include the produce raised in Belleville, which, however, is very trifling.

total Fulled Cloth 22,712 yards, total Flannel 52,293½ yards, taken together, these give more than 2½ yards for every individual in the County.—This amount of Fulled Cloth does not include

COUNTY OF HASTINGS AGRICULTURAL SOCIETY.

1851.	Dr.			1851.	Cr.		
	£	s.	d.		£	s.	d.
To balance on Hand from 1850,	2	7	9	By amount paid Township Societies,	165	15	0
do Amount rec'd subscriptions for 1851,	106	0	0	do Agriculturist Newspaper,	12	10	0
do Government Grant,	250	0	0	do Sundry Premiums,	120	6	3
do Proceeds of sale of sheep,	8	1	10	do Secretary's Salary,	5	0	0
do Montreal Premiums,	20	0	0	do Old balance on Sheep,	4	14	4
				do Reduction to members in price of Plaster,	47	15	3
				do do In price of Clover and Timothy Seed,	27	12	6
				do Cash on hand,	2	16	3
	£386 9 7				£386 9 7		

These accounts are not as particular as they ought to be, but the Society is now better organized, and the Treasurer, under the new Act, will present a more comprehensive Balance sheet.

The Society found that they sunk too much money in the furnishing of five hundred barrels of Plaster, at a very low rate, and this year are not devoting half so large a sum for this purpose—not being able to afford it from other demands—at the same time they think it very important to encourage the growth of Clover as much as possible.

Names of Office Bearers of County Society for 1852:

President—Benjamin F. Davy,
1st Vice President—Asa Yeoman,
2nd Vice President—Caleb Gilbert,
Secretary—Samuel D. Farley, Belleville,
Treasurer—Peter Robertson, Esq., Belleville,

Directors:

Robert Grass, David Jones,
Joseph Keith, Thomas D. Farley,
Joseph Canniff.

SIDNEY BRANCH SOCIETY.

	Dr.			1851.	Cr.		
	£	s.	d.		£	s.	d.
To amount received from Parent Society,	74	18	2	By amount paid Loss on Seeds,	3	13	1½
				do Deduction on Plaster,	3	12	9
				do Premiums on Stock and Pro- duce and Implements and manufactures,	48	16	9
				By Balance on hand,	18	4	7
				do Expense of Printing,	11	0	0
	£74 18 2			Total expenditure for 1851.	£74 18 2		

Names of Office Bearers of Sidney Township Society for 1852.

President—John Gilbert,
Vice President—Stephen H. Hogle,
Secretary—Hugh McMullen,
Treasurer—Caleb Gilbert.

Directors:

Simeon Ostrom, Isaac B. Ostrom, John Row, jr.,
John S. Huffman, Robert Grass, Manly Roblin,
John Purdy, Elias Vanderwater, David Jones.

TOWNSHIP OF THURLOW AGRICULTURAL SOCIETY.

1851	Dr.			1851	Cr.		
	£	s.	d.		£	s.	d.
To amount received from County Society	54	0	0	By amount paid Premiums for Stock— fulled Cloth, Implements, Dairy-produce	53	0	0
To Balance on hand from 1850.	3	0	0	By amount paid costs of printing expenses	4	0	0
	£57 0 0				£57 0 0		

This is all the information I have been able to procure, though I have repeatedly applied to the Secretary of this Branch Society, and to the Secretary of the County Society, to whom their report has not been sent

in. The 14th Section, XIV and XV Victoria excuses them for this year, and next year I hope there will be more particularity.

Names of Officers for the year 1852.

President—Solomon Vermilyea.
Vice President—Joseph Canniff.
Secretary—S. D. Farley.
Treasurer—L. V. Farley.

TOWNSHIP OF RAWDON AGRICULTURAL SOCIETY.

1851	Dr.		1851	Cr.	
	£	s. d.		£	s. d.
To Balance from 1850.	1	11 5½	By amount paid for printing.	0	10 0
To amount of Subscription.	6	15 0	By amount paid for Clover Seed:	2	15 0
To amount received for Plaster.	0	15 7½	By amount paid for a Bag.	0	1 3
To amount received for Clover Seed.	2	0 0	By amount paid for Plaster.	0	10 0
To amount received from County Society.	17	5 0	By amount paid for premiums.	17	3 6
To Cash on hand.	0	7 8	By amount paid for expenses.	1	0 0
			By amount paid for Subscription to County Society.	6	15 0
	£28 14 9			£28 14 9	

There is no Branch Society this year in Rawdon, the 12th members preferring to join the County Society.

TYENDINAGA BRANCH AGRICULTURAL SOCIETY.

1851	Dr.		1851	Cr.	
	£	s. d.		£	s. d.
To Balance on hand from 1850.	33	0 10½	By amount paid for Agriculturist.	6	5 0
To amount of Subscription list and Government money.	49	5 0	For Postage on do.	1	7 6
			For Ploughing Match.	4	17 6
			For Expenses of Show and fairs.	1	4 7½
			For Printing.	2	2 6
			For Agent to procure Wheat.	6	1 10½
			For Discretionary Premiums, 1850.	1	3 9
			For Amount of Premiums, 1851.	51	14 9
			Balance on hand.	7	8 4½
	£82 5 10½			£82 5 10½	

Names of Officers for the year 1852.

President—Michael Nealon, Esq.
Vice President—Wm. Emmons, Esq.
Secretary and Treasurer—Levi A. Appleby.

Directors :

Richard Lazierby.	Robt. Haight.
A. L. Roberts.	H. P. Ruttan.
Benjamin Morden.	J. O. Sullivan.
John Tulloch.	R. C. Goslin.

B. Murphy.

HUNTINGDON BRANCH AGRICULTURAL SOCIETY.

1851	Dr.		1851	Cr.	
	£	s. d.		£	s. d.
To member's Subscription.	12	0 0	By Premiums awarded for 1851.	24	15 6
To amount of Government Grant.	18	15 0	By Canadian Agriculturist.	3	0 0
			By Postage.	0	15 2
			By Printing.	0	12 6
			By balance on Hand.	1	11 10
	£30 15 0			£30 15 0	

Names of Officers for the year 1852.

President—Henry Ostrom.
Vice President—Phillip Luke.
Secretary—Salver Vantassell.
Treasurer—Owen Ketcheson.

Directors :

Andrew Findley.	Henry Ketcheson.
Timothy Clark.	James Haggartie.
James Archibald.	

COMMUNICATIONS FROM C. P. TREADWELL, ESQ., SECOND VICE-PRESIDENT OF THE AGRICULTURAL ASSOCIATION OF UPPER CANADA, TO THE BOARD OF AGRICULTURE.

To the Right Honourable JAMES, Earl of Elgin and Kincardine, &c., &c., &c.

The Memorial of the Agricultural Society of the United Counties of Prescott and Russell,

MOST RESPECTFULLY SHEWETH,—

The diffusion of knowledge, both scientific and practical, in the art of Agriculture, is a subject of the first importance to Canada.

That we view, with no ordinary degree of satisfaction, the establishment of an "Agricultural Bureau" to effect this great object. That the establishment of a Model Farm at Toronto is also a matter of the highest consideration to aid this noble country in arriving at the greatest perfection in this most respectable, honourable, and necessary pursuit. At the same time we cannot conceal from ourselves the difficulties that our remote situation from Toronto places us in, as our youth cannot derive that advantage that must result from a practical teaching in connexion with a Model Farm from their inability to sustain themselves in the metropolis of the Province.

Under these circumstances, your memorialists would beg to bring under the favourable notice of His Excellency the propriety of establishing a Model Farm at the Eastern extremity of the Province of Upper Canada, as it was before the Union. And as the Ottawa offers many advantages that it should be located on that noble River under the patronage of the Government, and its operations be directed by a gentleman of highly scientific acquirements, together with a practical knowledge of the various Departments of Agriculture, and capable of analyzing all kinds of soils, and of delivering lectures on the same, and that a Committee of five be appointed by the Agricultural Bureau to carry it into immediate operation.

To make such a Farm of the greatest possible service to the public, your memorialists would beg to make a few suggestions, viz. :

1. That there should be an Agricultural Library.

2. That there should be a Seed Store and Warehouse for the sale of improved Agricultural implements.

3. A Nursery and Garden for the purpose of raising trees and seeds.

The great benefit to be derived from such an establishment, and the testing the qualities of grains, grasses, and roots, the different kinds of soils, and their adaptation to the different kinds of produces, the proper kinds of ploughing for

each and time of sowing, as well in reference to the grains now in use as to those that may be imported hereafter; the cultivation of the beet and hemp and the improvement of the different kinds of horned cattle, sheep, and swine, as well as the numerous kinds of farm-yard fowl.

Confident, therefore, that the general interests of this section of the Province would be materially benefited by the establishment of such a Farm, your memorialists would respectfully submit the consideration of it to your Excellency, and trusting that it may meet your Excellency's approval, your memorialists, as in duty bound, will ever pray.

(Signed) CHAS. P. TREADWELL,
President of the Agricultural Society
United Counties Prescott
and Russell.

L'Original, 23rd March, 1852.

L'ORIGINAL, 15th April, 1852.

SIR,—As the subject of Model and experimental Farms, to be sustained either wholly or partly by grants from the Provincial Treasury, is occupying the attention of the Government, and of the public in general, I beg to make a few remarks that I hope may not be censured as inapplicable or out of season in reference to these very interesting subjects.

I consider the Model and Experimental Farm to be two entirely different matters, and to be treated on separately. In reference to the former, I will make a few observations, and hope that they will be followed by persons more competent to improve the subject. I would recommend that £50 be granted to each County holding an Assize and having a good County Grammar School, to the farmer cultivating in the best manner not less than fifty acres, exclusive of pasture and woodland, and also £5 for the best cultivated five and not more than ten acres, to give a fair opportunity to the poor man—the Professor of Agriculture to regulate the scale by which the farmer contending for these prizes shall be adjudged and these requirements should be taken as the basis for awarding these premiums—the objects to be taken into account should be the farm house, offices, and all out-buildings for the securing of the crop and for feeding the different kinds of stock with the utmost economy, manner of laying out the farm and field, having a proper proportion of the whole, proper manner of fencing, draining, whether surface or subsoil, laying out field for pasture, with the best means of obtaining water for each enclosure—the judicious location of the wood so as not to injure the standing crop by shading it or otherwise, and to adopt a system that the growth of a certain number of acres

will continue to furnish the necessary amount of fuel for a family. In reference to stock, great care should be taken to improve the ordinary breeds of the country, and then cross them with the best that are imported, and by these means obtain as good if not the best stock that can be raised in the world, climate considered. Poultry is a matter of consequence and should be attended to; the garden, nursery and orchard, should by no means be overlooked, and a rigid account kept of the receipts and disbursements of the farm. The profits of the establishment should of course belong to the owner; this being the case, it would naturally be managed with the utmost economy. These are my impressions of some of the requisites of a Model Farm.

The Experimental Farm I consider in an entirely different light. An extensive Farm of this description should be attached to one of the Colleges of Toronto, Montreal and Quebec, where the value of every kind of production which the particular section is capable of growing should be fully and fairly tested, together with the soil adapted to each kind of produce—the mode and time for preparing the soil, the amount of seed required, and the best manner of harvesting and preparing it for market; the producing of the most approved seeds should be carefully inquired into; a Seed Store, Agricultural Warehouse, and Library should be attached to the establishment; vegetable fruit and flowers of all kinds should be encouraged; the best breeds of horses, sheep and swine, should be imported and kept pure, and the best kinds of poultry should be introduced. A rigid account of the receipts and expenditures of each Department should be kept separately for publication, this being a public undertaking, it cannot be managed with the same degree of economy that would be expected from a private enterprise. In different sections of the Province remote from Literary Institutions of the higher order, miniature experimental Farms should be established in connexion with flourishing County Grammar Schools, where gentlemen of science having also a practical knowledge of things should be placed at their head. The principal of each should be one of the experts of the District, and it should be his duty to lecture before the Schools on Agricultural Chemistry; he should also deliver lectures in other sections and to furnish to the Agricultural Bureau at least two scientific papers annually, on the subject of Agriculture; he should also be appointed one of the Judges at the Grand Provincial Exhibition; the Farm should be rented and approved of by the County Agricultural Society, to be in connexion with the School; the stock and crops to belong to the person filling this situation; the experiments to be directed by the Agricultural

Bureau and Board, and a scientific account of them to be furnished for publication, and a careful account of moneys received and disbursed, also to be furnished; the produce of the farm to form a part of the salary for the remuneration of the Agricultural Professor, filling the situation of Farmer.

I have gleaned the foregoing observations from several sources; I acknowledge myself particularly indebted to Dr. Everett, from whose pen I send you a short paper, and who would fill our Professor's Chair should he be so fortunate as to get one; I feel also much indebted to Mr. Miller, Master of our County Grammar School, for his exertions in advancing the interests of education, and also of Agricultural science.

I regret that it will not be in my power to attend the next meeting of the Board of Agriculture at Toronto; but you will please lay this paper, together with copies of letters from Dr. Everett and Mr. Miller, which are herewith enclosed, and also the papers previously transmitted to you before the members of the Board when it shall have been convened.

I am, Sir,

Your most obedient Servant,

CHAS. P. TREADWELL,
2nd V. P. A. A. U. C.

George Buckland, Esq.,
Prof. Agriculture, Toronto University,
and Secretary to the Board of Agriculture.

POINT FORTUNE, 26th March, 1850.

C. P. Treadwell, Esq.

DEAR SIR:—Though I deem it probable that the Government will take the initiative in the matter of the Model Farms since the establishment of an Agricultural Bureau,—I will venture to throw together a few impromptu ideas relative to the subject; they are, however, only suggestive, for I have but a few minutes to write, and I had almost said less time to think. The outline would be something as follows:

1. The County Council and the Agricultural Society conjointly to select a site, to be purchased by Government.
2. The latter to choose the farmer.
3. The terms upon which said farmer is engaged to rest with the Government; the organ of communication being the President of the Agricultural Society; duration of engagement seven years; responsibility of farmer to the Government; any dissatisfaction expressed by a majority of Agricultural Society and forwarded to Government by President as above.
4. Implements of highest order to be supplied out of Legislative Grant.

5. Farmer to furnish one or more scientific and practical papers annually for publication in any form the Government may see fit.

6. Model Farmers throughout the Province to hold an annual Convention.

7. Model Farmer to furnish his own stock.

I deem the engagement as a highly responsible and involving character. The "status" which a man should hold in society you will appreciate; and at the foundation of the whole measure must be the consideration whether the Model Farmer shall be looked upon as the exponent of manual labour, or of scientific research.

I remain, Dear Sir,

Your obedient Servant,

(Signed)

C. M. EVERETT.

L'ORIGINAL, April 10th, 1852.

DEAR SIR:—Availing myself of a few leisure moments, permit me to offer my opinion on the subject which has been and is now occupying the public mind in this neighbourhood; I allude to the establishment of a Model Farm. Although the Farmer in the Western part of our Province enjoys many advantages over us here, still, in my estimation, this section is not inferior to any part of North America that I have seen in the general quality of her soil, in the adaptation of her climate, and in her geographical situation and circumstances; and she has the further advantage of being more convenient to the only outlet we have to the Atlantic. The latter advantage gives increased value to her agricultural products, and should rouse in our favour a strong and powerful spirit of emulation and enterprise.

A regular system, therefore, of good and simple agriculture should be introduced into all its various branches; a careful attention to every description of domestic animals in breeding, selecting and feeding, should be attended to, and also a proper management of the Dairy; each and all these should be carried into effect. Such a course would not fail to be beneficial, and must show that the improvement of Agriculture is a matter of the most vital importance, not only to the tiller of the soil, but to every true friend of Canada.

The establishment of a Model Farm in this section of the Province, is fairly entitled to the consideration of our Government. The farmers here seem alive to the importance of such a measure, and hail with fond anticipation the working and object of the new Agricultural Bureau. A few days ago, I visited the farms

of two of our townsmen, J. Marston and A. Case. In many respects they could not be surpassed by any of our Western farmers; whilst, in others, they are decidedly superior. In a word, they might serve as models to their more humble neighbours. Mr. Marston's nursery contains upwards of 100,000 young trees, all in a good thriving state. Now, should the Government regard your exertions favourably, and place at your disposal means in aid of carrying a Model Farm into effect on the Ottawa, would not such a measure be a most desirable appurtenance? but, while thus addressing, permit me to call your attention to the resolution adopted at a public meeting of the inhabitants of this place, in January last, convened for the purpose of selecting a site for our new County Grammar School House, which resolution stated "that should a Model Farm be practicable, it would be advisable to attach its educational department to our Classical Seminary." I feel no hesitation in saying that not only would this scheme work well, but that it should be regarded as a *sine qua non*. Its want would be indispensable. I believe the Model Farm of Lower Canada has cause to regret that no provision is made in that way. Should you not, therefore, select your Farm as near our Institution as possible? I regard this consideration of the matter as important, and as a gentleman of high scientific attainments and capable of giving lectures from time to time, should the farmers of our County send their sons to study the art—as farming, from the science with which it is now treated, must be considered as such—should be appointed. Combining, therefore, the circumstances, present and prospective, I must say that no part of Canada is better prepared for self-exertion and more worthy of the consideration of Government than this neighbourhood. To you a debt of gratitude is due for your untiring exertion in order to promote and improve the status of the farmer, by introducing him to a systematic and scientific mode of cultivating the soil. Trusting that your efforts may be crowned with success,

I remain, Dear Sir,

Very truly yours,

(Signed)

OLIVER T. MILLER.

C. P. Treadwell, Esq., &c., &c. &c.

THIS ELECTRIC LIGHT.—This light is at length to be brought into practical operation. The Lancashire and Yorkshire Railway Company intend almost immediately to illuminate the several tunnels along their line by this powerful and now practical system of illumination. The adoption of the electric light at these points is not for experimental purposes, but for permanent use—all the difficulties which have hitherto beset the subject having been entirely surmounted.—*Mining Journal*.

The Agriculturist.

TORONTO, JULY, 1852.

THE CATTLE CONTROVERSY.

Some of our readers may possibly think that we are giving an undue prominence in our pages to the discussion of this subject. The introduction of Improved Stock is, however, a matter of the greatest importance to any system of advanced husbandry, and every facility should be afforded for a full and impartial exposition of the whole subject, that the people may clearly understand its various bearings, as they affect the interests of agriculture and the welfare of the community. It is now quite evident that Canada has reached a point in its Agricultural development, when Cattle raising and Dairying can be made more profitable, on a more extended and systematic scale than has hitherto obtained. And as the price of grain, particularly of our main staple,—*Wheat*, is likely to rule low for the future, the farmer must depend less upon that single article, for his money returns, than has been his wont, and devote more attention to other, and now happily more promising sources of profit, which have heretofore been comparatively neglected.

Such being our views, we have thought that the discussion of the adaptation of the various breeds of Cattle to the climate, pastures, and markets of this country might prove advantageous, both by eliciting facts and rousing the attention of our numerous readers to the vital importance and wide bearings of the subject. But in order to realize these advantages, it is quite essential that the question be treated, on all sides, in a comprehensive and truth-seeking spirit; and that all offensive personalities should be scrupulously avoided by those who engage in this kind of warfare. This, unhappily, has not been the case, to the extent desirable, in the present instance; and we embrace the present opportunity to inform our correspondents, who have taken, or may hereafter take a part in this controversy, that we cannot allow our pages to be made the vehicle of personal recrimination. Mr. Sotham commenced by setting a bad example, in questioning the motives of such as differ from his views;—and we think that upon a calm reconsideration of what he has written, he will see that his remarks on the character and judgment of Professor Low, of Edinburgh, and the late Mr. Youatt, betray a

recklessness of assertion and a most unwarrantable and offensive assumption, which in any other person than Mr. Sotham, we should say, was characteristic of anything but a candid, well-informed, and truth-seeking mind. We accept Mr. Sotham's laudatory remarks in reference to our "*impartiality*" on this question;—for we are conscious that we deserve them: our sole desire in this matter being the promotion of truth, so far as it can be really ascertained, and the common good of our country. And we cannot but believe, notwithstanding anything Mr. Sotham may assert to the contrary, that a large number of our respectable American contemporaries are actuated by similar motives. Men everywhere possess but imperfect knowledge of questions which do not admit of rigid demonstration, and are liable to be influenced, often unconsciously, by prejudice and self-interest. It is so unquestionably with regard to the relative merits of the different breeds of cattle. *Which* is absolutely *the best*, under the almost endlessly varying conditions of climate, pasturage, markets, &c., is a problem which no really judicious man will pretend to solve. Even when the question is restricted within well defined conditions, and a given locality, the judgment of no man, in the present state of our knowledge, particularly on this continent, is to be received as infallible.

Our pages will continue open both to Mr. Sotham and Mr. Parsons, or any one else, who may wish to contribute his mite to the common stock of knowledge on this subject;—*but on the condition that the articles be brief, and free from all offensive personalities.*

MODEL FARM OF LOWER CANADA.—We are much obliged to Mr. Kirkwood for his interesting communication, but deeply regret to hear that obstacles have arisen to the carrying out of the purposes contemplated by the Lower Canada Society in the establishment of a model and experimental farm. We had indulged the fond hope that such most important and praiseworthy efforts would have been crowned with success. And we hope so yet.

THE WOOL GROWER.—The proprietorship of this useful journal has, we learn, recently changed hands. Mr. Moore, of Rochester, formerly of the *Genesee Farmer*, and proprietor of that excellent weekly paper, "*The Rural New Yorker*," will henceforth publish the *Wool Grower*, which we observe is still to be under the editorial care of Mr. Peters, who is peculiarly well qualified for the task. We wish the new proprietor every success.

TOWNSHIP OF HAMILTON FARMERS' CLUB.

THE ADAPTATION OF IMPROVED BREEDS OF CATTLE TO CANADA.

REPORTED FOR THE 'COBOURG STAR.'

At a meeting of the Township of Hamilton Farmers' Club, held at Smith's Inn Court House, on Saturday May, 29th, 1852.

Patrick Rose Wright, Esq., in the Chair.

Present Messrs. J. Wade, Black, Bourn, Bennett, Alcorn, Masson, J. Underwood, Pratt, Newton, Sutherland, Brown, Smith, and Eagleson.

Mr. J. Wade, read the following essay :

Although the subject for discussion on the present occasion, may in some measure appear to be a work of supererogation, viz : to attempt to prove that which so many of the most intelligent and experienced Agriculturists of the age, hold to be an established truth.

Yet, while others may be found, who from not having been favored with opportunities of observation, and comparison necessary to form correct conclusions on this matter, it may still be found quite worthy of consideration. And when we reflect that our Province, was fifty years ago, little more than a wilderness; and that many of our practical farmers were brought up under the unfavorable circumstances consequent upon settling a new country, without having the privilege of seeing the improved systems which were in progress in other countries, much allowance can therefore be made for the prejudices they may very naturally have imbibed. But while we can cheerfully excuse prejudices arising in this way; there is another kind, far from being entitled to any such indulgence. And as the principle object in writing this paper, is to combat prejudices arising from any cause, it becomes necessary to trace them to their foundation. In the first place, as the word itself implies; judging without evidence: we shall soon find that the objection to improved breeds of Cattle or to any other kind of advancement, nearly always proceeds from parties who have never given the matter a fair trial. It sometimes proceeds from the enemies of advancement generally; but oftener from a feeling of envy, cherished by such as are always behind in improvement, against their more energetic and enterprising contemporaries. And it is both amusing and also annoying to hear the absurd charges brought against the progressive party. Attributing the praiseworthy endeavors of the friends of improvements to better themselves and families, to motives of pride, ostentation, and a wish to outshine their neighbours. And a rather eccentric neighbor of mine once vented his disapproval by denouncing *aristocracy* in Cattle, averring it to be quite bad enough among the human species without being carried to inferior animals. This kind of prejudice is often found where least expected; as for instance in the remarks about Stock made by the author of the prize essay, Mr. Hutton, to whom the Gold Medal was awarded by the directors of the Johnstown A. S., and which is published in the January No. of the Agriculturist. After admiring the methodical arrangement,

the practical and philosophical ideas, clothed in chaste and beautiful language with which the essay abounds, I was quite astonished when I came to the paragraph headed "One word about Stock," to find him so far astray even from the principles he set out upon. He takes for his motto the World renowned assertion of the celebrated Dr. Johnston, "He that causes two blades of grass to grow where only one grew before is a benefactor of his country." He then states "the changes which the power and susceptibility of cultivation are able to effect on the vegetable as well as on the animal kingdoms, are truly wonderful." And after proving to a demonstration what has been effected in the improvement of grain, roots &c. in that department of Agriculture, he seems quite to forget that the present improved breeds of Cattle are the results of a similar process of advancement, carried out on the same principles in the department of Stock. He then goes on to charge "individuals and societies with inconsistency and absurdity, in incurring expense in procuring improved Cattle, without providing the necessary keep." I can assure him if such is the case in his region it is not so generally, for all the breeders of improved stock, within the circle of my acquaintance are good keepers, and the man who would go to the expense of procuring improved Stock, without intending to keep them properly must be a fool; quite as much so as the man who would incur the expense of preparing his land for a crop, and then sow foul or inferior seed. And it would be quite as reasonable to expect a good return from such a course of action, as profit from cattle of any kind, without proper food and attention. The enemies of advancement commonly shelter themselves under the name of Conservatives. There is you are well aware, what is called a Conservative state of things, and also a progressive state. The first says "let well alone" and the other says what was well yesterday, is not the same to-day; the first argues it to be unsafe to proceed further, while the other says there is no limit to advancement. The two parties stand in my opinion, in the relative position that the drawing and the holding back parts of a set of harness hold to each other. In order to enable the horse to proceed up hill, and even on the level surface, it is necessary to furnish the drawing part, but as it often happens he has to go down hill, it is quite as imperative to provide for that emergency, consequently the breeching is provided. This in the way of illustration of course admits a check upon the advance party, to be quite necessary, and it is only when carried to the extreme that it becomes injurious. These preliminary remarks are only intended to show some of the causes of opposition to improvement, and I now proceed to the subject for this day's discussion, viz., "The adaptedness of the improved breeds of Horned Cattle or neat Stock to the wants of this Province."

Without meaning anything offensive, I might say by way of parody, on Mr. Hutton's motto: The man that causes two pounds of beef to be produced under the same circumstances, where only one was produced before, is as much a public benefactor, as the one who causes two blades of grass to grow where only one grew before. And

had Dr. Johnson lived a century later, thorough John Bull as he was, he would most probably so far have concentrated his axiom, as to have expressed it in my words, for as he was well aware that grass was only accessory to human wants in a secondary way, that is, by being turned into beef; and by multiplying the results of the grass improver, by the beef improver, the consequence would be four for one; and this far exceeds any thing the Doctor ever anticipated. That both these results have been produced within the last half century, few will be found hardy enough to deny. But while the improvement in the vegetable world is universally admitted, the improvement in the Stock department is only partially so; yet the principle which produced the improvement in the former, is of the same kind as is now at work to bring about improvement in the latter. The question now follows: will those improved breeds of Cattle, natives of a milder climate than ours—be able to withstand the cold as well as the breeds already naturalized? This question can be answered by asking what gives one animal the power of enduring cold more than another? Physiologists tell us that Nature provides for this, not only by clothing the animal with hair, wool, or fur, for outward protection; but also by enabling them during the summer months to store carbon in the shape of fat in the inside; to furnish fuel to keep up the inward heat necessary to circulation, and other functions during the cold season; consequently we infer that the animal possessing the best coat of hair or wool for outward protection, and the greatest power of assimilating its food into flesh and fat will possess the greatest power of resistance to cold. These principles admitted, the next question follows: do those improved breeds possess higher advantages in this respect than what is called the native breed? Although Mr. Hutton says "our old Canadian cows are infinitely superior to any of those fancy breeds" as he calls them, they produce more milk on poor feeding—they *stand starvation much longer!**—they are better suited to our climate—and are in every way much better—unless we change our system of feeding, and furnish warm and comfortable housing. To use a sailor's phrase "he may tell that to the marines the sailors don't believe it." And I will now appeal to his own candour to acknowledge, if the principles I have laid down are correct, and if it can be proved that a Durham steer or Heifer (I have no intention of entering into the relative merits of the different improved breeds or holding one kind to be superior to another; because my experience has been principally confined to Durhams) will during the summer months, under the same circumstances, lay on more flesh and fat than a Canadian one; which will be the most able to withstand the inclemencies of the winter? There can only be one answer, as the matter is self-evident; and that such is the fact I most positively assert, and this assertion will be endorsed, by every breeder of improved stock, on this continent, who understands his business, and has given the matter a fair trial. And when it has been proved, even in Great Britain, that the

improved breeds, will produce from 25 to 30 per cent more beef and milk, from a given quantity of food, than the old unimproved breeds; can we wonder if they excel in this country? It is well known that our domestic cattle are not indigenous to this continent; but must at some period have been introduced from the old world. And mostly previous to the time when men of science began to turn their attention to their improvement. And when we consider how little attention has been or could have been devoted to their improvement in the early settlement of a country like this; it ceases to be a wonder, that we find them the inferior mongrel race they seem; when put in comparison with the improved breeds. In fact we are almost surprised to find them as well as they are; and we are well aware they must fall infinitely short of the improved breeds in Britain.

But as I have already occupied so much of your time, and as I consider that the introducer of a subject is not called upon to do more than state his own individual experience, with something in the way of preface, I will now proceed to state the advantages improved Stock have been to myself.

It is now about 20 years since the Agricultural Society of this county first turned its attention to the importing of Stock; upon the broad principle, that if better breeds had been produced in other countries; (and being aware of the slow, tedious process, such things could be brought about by starting from first principles) it would be much more economical, as well as a much shorter course of action, to purchase even at high prices, improved animals, than to go through the same tedious process of producing them; consequently as early as 1832, our Society commenced importing new breeds from New York State; and after proving the results, for three or four years, they were so far encouraged, as to import again 3 bulls of the Durham breed; this of course was calculated to stimulate individual enterprise, if anything would. I was one of the first to avail myself of the advantage, and seeing clearly the benefit it would be, I entered into the matter myself; and merely as a speculation I have found that nothing I have entered into in the farming business has paid me so well.

It might be stated as an objection, that I had profited by selling as a breeder; and it may be true in one sense. But if I could not sell another animal in this way, and when I knew that the profits on the improved breeds whether for the dairy or the butcher, are not less than 50 per cent; my reasons for preferring them, may be easily accounted for.

I have led the native stock, and I have milked them; but as I have not kept the results in figures, I cannot state tabularly the exact difference. But this I know well, that it was hard work to make the best of our five or six year old Cows of the common breed up to six hundred weight of beef, hide and tallow; much harder than to make a four year old Durham Heifer nine hundred, with no better keep; and as for steers, I will stake any amount that I can make two four year old Steers of my own breeding weigh more than the best six year old Steers of

* QUERY—When did he try this experiment?

the native breed that can be found in our diggings.

Mr. Mason said he tried the Improved breeds; he thought that they weighed heavier than the common breeds but that those who raised the Improved Cattle, generally paid more attention to them than was paid to the common breeds. He thought it took more to keep the Improved cattle than the common ones,—thought the Improved breeds were better for beef, but had not found them so good for the dairy as the old native Stock.

Mr. Sutherland said he regretted he had not paid more attention to the Improved breeds of Cattle, he thought them easier kept over winter than the common Cattle, he thought that his half bred Cattle milked full as well as the native Stock, and if they did not turn out well for milk, he could always turn them easily into beef. He had at one time formed the opinion that the Improved breeds were more delicate in the constitution than the native stock, but he had quite changed his opinion, for he now thought the improved breeds were hardier than the native Stock, for he found that his half breeds always came out in better condition in spring than his native ones.

Mr. J. Underwood could not say much, he approved generally of Mr. Wade's essay—he had always seen the Durham Cattle turn out best both at home and here, that if he had an opportunity he would certainly improve his Stock, as he thought them the most profitable—that you could raise them to beef, years younger than the common kind. He preferred the Durham Cattle to the Devons.

Mr. Masson would not say much—would just state what he knew, which was that had he not Improved his Cattle he would have been John Masson across the Lake long ere this time; by improving his breed of cattle he was enabled to pay his debts, for had he not done so, he could neither have paid rent, wages nor Mechanics, the improved breeds will always come to more beef on less feed than the natives. When he brought a Butcher into his Stock he was always sure to pick the improved Beast and leave the native one, he thought that all the cattle that were crossed, seemed hardier in their constitution than the natives, he did not say they would live on less feed—but that they would do better on the same feed. It was the Devons that he dealt in, and he found that if on the first of May his Devons needed lifting, his natives needed carrying.

Mr. Alcorn said he thought that Mr. Wade's essay left little to say on the subject, he had had a good deal of experience among Cattle both in the old country and here, and he always preferred the Durhams—they fed so much easier, and brought so much more money when fat. He thought the Durhams were as good milkers as the natives or any other breed, he found no more trouble in wintering his Improved Cattle than his native ones. He thought his improved Cattle came out in rather better condition in Spring than his native ones, and they were all fed alike—could have a Durham Steer as far

forward at three years old as a native one at four—and though his stock was not so far improved as Mr. Wade's, and some other breeders, he was pressing forward as fast as he could, and was determined not to stop until he reached the very top of the tree.

Mr. Bennet said he had been more edified by Mr. Mason's speech than any he had heard this evening, he had been all his life long endeavoring to pay his debts, and now he should certainly try it by improving his stock. Speaking of their dairy properties, he had some half breeds and some natives, but he found his natives gave most milk, from what he had seen he thought the Durhams feed to more beef, said he had never had such good cows since he came down here, when in the Niagara District he had native cows that gave three pails full of milk a day.

Mr. Bourn said when he came here he did not expect to hear (nor had he heard) one word said against the improved breeds of cattle, it could only be from ignorance or prejudice that any one said ought against them; in his experience he found the imported cattle far preferable, for the dairy, he was not sure that the very highest blooded Durham was so good, for the dairy he would rather prefer a cross, he found that the half breeds did far better on the same keep than the natives.

Mr. Black could say little about the improved breeds, what he could say was, he was sorry he had not more of them, else he would have had more experience with them, he always preferred the Durhams, and thought that for feeding, they were more than a year ahead of our native stock, he could never bring up the natives to the weight of the Durhams, had fed more or less these three or four years, and found his own grade Durhams were far preferable to any natives he could buy, did not think Mr. Wade had over stated the properties of the improved breeds, had fed two heifers this winter (they were rather more than half bred) which was sold for fourteen pounds each in Montreal this spring, had fed twelve head of cattle last winter, some part Devon and some part Durham they were raised all the same, and a Devon one did best (he was from Masson's Bull). but then the Devon was a very quiet animal, and a quiet beast always feeds best, found no difficulty with regard to the constitution of the Durham cattle, thought them quite as hardy as the natives, would feed no other cattle if he could get Durhams, as to the dairy he did know much difference between the natives and Durhams, he had always found as great a proportion of good milkers among the Durhams, as he had among any other breed of cattle.

Mr. Eagleson, came for instruction, his attention had been turned more to clearing land, than to breeding cattle.

Mr. WADE said he was very much gratified that his opinions had been so generally approved of by all in this meeting who had had any experience in the matter, that his object in bringing forward this subject was to go away with the prejudice that still existed against the improved breeds of cattle, it was the same with cattle as

with every thing else, if you keep cattle keep the best, if you grow grain grow the best, if apples let them be of the best, as it took no more to raise a good beast than a poor one; so it took no more ground to grow a good fruit tree than a poor one, always in all kind of farming set up a standard of perfection, and if you cannot reach that standard come as near it as you can, as the object of the Collings and other improvers of the Durham cattle was principally beef and not milk, there might be some other breeds that were better for the dairy; the Ayrshiro had been bred more for their dairy properties, yet from his own experience he would as soon select from the Durhams for the dairy as from any other breed as he thought he would have as high a per centage of good milkers among the Durhams as among any other breed.

Mr. P. R. WRIGHT said, the position I occupy to-day, entails the customary duty, of saying something on the subject now discussed, and in this case, although I regret my inability, I feel the duty a pleasant one; rendered so from two causes, viz: the admirable manner of introduction and the unanimity with which you have endorsed our essayist's opinions, confirming in my mind their correctness. When so many men, of practical experience, corroborate opinions, which bear manifest evidence of being founded on intelligent observation, patient investigation, and successful experiments; I say, opinions thus sent forth, must acquire an importance in the eyes of our brethren of the plough, and carry conviction, where the most brilliant and logical reasoning of the theorist would fail to produce the least salutary effect. We do not pretend to be anything, but plain common-sense farmers, met together for the purpose of collating our dear bought experience, and possibly assist in saving others from the errors and consequent disappointments into which we may have fallen; and if in publishing to the world, the proceedings of our club we fail to clothe our ideas in language sufficiently dandyfied for the hypercritic, we hold the belief of being sufficiently understood by the men with whom our endeavours in the cause of improvement will claim the deepest sympathy and interest. Gentlemen, your testimony to-day in favour of the progressive principle does honour to our club, it is another well directed bolt at the tottering fortress of prejudice, and its ignorant garrison, a few more well-directed assaults from men such as you, and the antiquated *donjon* must surrender; the cross-bows and the falchions of our ancestors are no match for the twelve pounder and Mimie Rifle. The Hereford, Devon, and Durham horns, will, like the ram's horns of old, shake the old walls to the dust, burying in their ruins the last vestige of prejudice, and its parent ignorance.

But whilst owning the power of precept, in combating and removing error, there is another means of accomplishing the same end, accessible to minds incapable of profiting, by the most profound logic, and that is *Example*—the old proverb, seeing is believing, must not be forgotten, few men can resist the evidence of ocular demonstration! I should like to see the effect produced in the mind of that stickler for

democratic Cattle, which Mr. Wade has so laughably introduced to us; by a walk in Mr. Wade's pastures some fine June morning, when nobody sees him, if the bump of comparison, has not been omitted in the construction of his caput, he must see, that his own animals are much smaller in size as well as worse conditioned, and probably he might be led to inquire the reason why Mr. W. keeps such beasts. I infer he knows Mr. W. to be a self made wealthy and independent Farmer, and consequently that most of his husbandry, must be connected with an eye to profit, if he would only believe this, and in his heart he must do so; although pride or self conceit may prevent immediate action, I would the ambition to desire a connection of a pure not be surprised to find by next June he had Durham Bull with some of his plebeian Cows, and were willing even to send a few to the Harem of the lordly aristocrat.

Mr. Masson's argument is certainly a powerful one, if by improving his Stock he has been enabled to *pay* and *save*, and we all know very well he does so, the man who does neither must be dishonest, if he does not try the same means.

Mr. Black's experience as a breeder and feeder is entitled to particular notice; his long practice in this branch of the Farmer's craft, in a County of Scotland where there are no *bad Farmers*, demand that I should specially direct attention to his statements.

I would now gentlemen add my testimony to yours, in favor of improved Cattle, and their perfect adaption to this climate, the prevalent opinion that they are constitutionally delicate, I hold to be fallacious—and that they require hot house cultivation equally so. I believe that without proper care and attention as regards housing and feeding, no animal can yield a maximum profit, and with these, the Improved breeds of Cattle are as much the superiors of the unimproved, in reality as in appearance, a sufficient distinction to satisfy usury itself,—Of the new mode of comparison which has originated in an Eastern County, viz., *which of the breeds in question will stand starvation longest!* I confess my entire ignorance, I have never made any experiment in that way, nor do I wish to see the "straw a day" test applied. I have heard old soldiers say that when tried with hunger and fatigue, "it was not always gentle blood that yielded first," and to my mind, Mr. Wade's reason as regards hardness is quite conclusive, if the Bear had not the power of assimilating food into fat, he would leave his den in Spring, not much improved in his appearance by *sucking his paws*.

I thank you gentlemen for your courtesy, and before leaving the chair wish to express my hope that all present may have profited by the discussion, and are determined to persevere, in our endeavors to further improvement in Agriculture despite the jeers of the sceptic or the stubbornness of the ignorant.

A vote of thanks was given to Mr. Wade for his excellent Essay.

WALTER RIDDELL,
Secretary.

IMPROVED BREEDS OF CATTLE.

(To the Editor of the Canadian Agriculturist.)

DEAR SIR:—I have hesitated, for some time past, whether I should trouble myself to reply in any way to Mr. Sotham's several letters, which have appeared in your journal in relation to a letter I wrote some months ago respecting the merits of different breeds of cattle; first, because I saw not, in *what* Mr. Sotham advanced, the *least reason* for my altering my assertion or opinion set forth in that communication, touching the subject matter between us; secondly, because it was too obvious not to discern, at one glance, the animus with which he had taken up his pen. It was equally plain to me that I was writing for one purpose, he for another. *I*, with a desire to be useful; *he*, for the purpose of self-gain, in the hope of bringing himself and his Herefords into notoriety in Canada, and more especially so at our coming Provincial Fair, to be held at Toronto next September—where he hopes, I have no doubt, for better success in impressing the Canadians with the extraordinary qualifications of his Herefords, than he has succeeded in doing with his brother farmers and the breeders of New York State, Kentucky, and Ohio.

I need not appeal to any better authority, Mr. Editor, than yourself, for the motive which induced me to write the letter regarding the excellencies of the different breeds of cattle, as I had found them from long experience, and from what I had heard others say from their practical knowledge also. It was, you will well remember, a request made by yourself, that I should notice Mr. Tye's letter, because, as you said, you did not at that time know any one who had been more extensively engaged in breeding, rearing, and fattening of stock, combined with Dairying that you could well apply to. Knowing, too, as you then did, that I had been a good deal engaged on committees, both at home and abroad, as a Judge of Stock, induced you further to urge the matter on my attention. I then promised that, if you could find no one else equally or better qualified than myself, I would endeavour to take the matter up, and answer Mr. Tye's inquiries in the best manner I could, provided my time should admit of it. And *how* that letter was received by those whom you conversed with on the subject, or by the Farming community at large, *you* are more fully aware than I am, or, at any rate, than I choose to express. But, somehow, that letter seems to have been, to *Mr. Sotham*, a *bitter pill!* The bile, ever since, has been oozing from him at every pore, and I do not even yet know, from the tenor of his letter in your last number, what the extent of the effects of my letter may be. I wish, however, that Mr. Sotham would not take the matter so much to heart. Poor man! I shall, I fear, be

thought by some perfectly cruel, but I really would not wish to be so considered. I can assure Mr. Sotham that my conscience will acquit me of writing that letter from a selfish motive. I wish I could think that Mr. Sotham could say the same.

It was my earnest wish to state all I knew respecting the subject I wrote upon, and to leave individuals to judge for themselves, after I had put them in possession of that information.

I wrote of facts—*facts* that I can prove any day; and, if any one is to be benefited by what I wrote, it certainly cannot be myself. I have few or no Short Horns for sale. I am, on the contrary, a purchaser. 'Tis true, I have sold a great many, have bought a great many, and have bred a great many, and I may do so again, or I may not. In one year and a-half, soon after I came to Canada, I sold no fewer than eighteen head of thorough-bred Short Horns, and had certainly a most satisfactory account from every purchaser that I afterwards saw, or corresponded with, of the yearly progressive improvement they made—notwithstanding *they had not* the new milk of two cows, nor yet *that of one*.

Stilton cheese makers cannot afford new milk at that rate to their calves, nor yet had they as much oil cake or grain as they could eat; as they certainly had neither the one nor the other, although Mr. Sotham would wish to mystify the minds of his readers to the extent of the impossibility of *manufacturing* Short Horns *without* the aid of the above *ingredients*. Does Mr. S. for a moment suppose that people are so ignorant as not to know that the Short Horn breed are not a breed of yesterday, or to-day, and that their merits as a herd have been pre-eminent for years, and that they have been patronised and fostered by the best breeders of stock in England, Scotland, Ireland, and America—aye, in truth I may say, all over the globe! Where, then, is the utility of Mr. S. taking such pains to make people believe such trash—such downright untruths, I may safely say—as appears in his communications? Can Mr. S. suppose all people are to be so easily *gulled* as to believe that *he* knows every thing, and *no one else* any thing regarding the subject he writes upon? He may in some instances, I dare say, have succeeded in his gasconading, for which, as the New York State breeders and Farmers well know he has such an extraordinary propensity! But not to the extent, certainly, as he could wish, as the return of cattle at the foot of this article exhibits for some years in his own State will testify to. If there is so much more merit appertaining to the Hereford breed of cattle than to the Short Horns, how comes it that their numbers are so *limited* at the Shows in England compared with the Short Horns, and that there are not other men besides Mr. S. to find it out in his own State, although he has been trumpeting forth their praise these seventeen years past? Surely he will allow that there are other men who have *equally discerning capabilities as himself* on such a subject; yet the whole tenor of his writing and talking, for many years back, would lead one to think otherwise.

What puerility in a man of Mr. Sotham's pretensions to write about testing the milking properties of different breeds of cows on land 2 or 300 miles apart, when, perhaps, there shall be from 15 to 30 per cent. in the quality of one pasture over the other in producing milk, say nothing of the vast difference that the influence of temperature, rainy weather, or dry weather must have—the age of the cows, the time of calving, the manner of feeding six months before they calve, their condition at calving, and a dozen other things that might be named—all of essential consequence to the carrying out fairly and honestly the trial of which Mr. S. speaks.

Of course we will not take into account the circumstance of Mr. S. being *now* on one of the best, if not the very best tract of land (the Genesee Valley) in New York State! Let me ask Mr. S. if he would have been as anxious for this trial had he *now* been on the land he formerly occupied in the vicinity of Black Rock?—where I understand he has said he could not get his Herefords fat, or that the land there was not fit to feed Herefords on, notwithstanding I have seen as good beef and dairy cows produced in that neighbourhood, of the Durham breed, as I would wish to see.

At the time I suggested the desirableness of the milking properties of the different breeds being fairly tested, if possible, did Mr. Sotham imagine that I for a moment supposed that a fair trial could possibly be arrived at in the manner proposed by him? Why, Sir, a child of ten years old would not have thought of suggesting any thing half so absurd—and that such a proposition could come from one so *thoroughly skilled* in his profession as Mr. S. *premises* to be, is indeed a real puzzler to me. As far as I can see of the matter, it would be perfectly futile. In fact, nothing short of the animals being brought up together from the time they are calved, and each fed and managed exactly in the same way. Even the amount of food weighed to each animal, and then the milk and butter or cheese weighed for *two* years—the number of each breed to be not less than twenty. The result of this plan, could it be carried out, would be something like a fair test—and, in my humble opinion, nothing short of this would be conclusive; but I do not even know that *that* would be, with the losing party. Cows vary so very materially one season with another in their milk, particularly with their first and second calves, that *two* years trial, therefore, would be far more satisfactory; and if others can be found to contribute to this proposition being carried out, I am quite willing to be a party to it.

Mr. S. may *rodomontade* as he pleases of the milking properties of the Herefords, but who ever heard them in England spoken of excelling as a herd for milk? Mr. S. may allude to single cows as having given large quantities of milk or butter, but what does that show or prove? That *all* Hereford cows will do the same? I leave others to judge. It would indeed be strange, as I believe I remarked in my former letter, if some good milkers were not occasionally found in so old an established breed of cattle; but, that they

are celebrated as a herd for milking properties, I most positively deny.

And will Mr. Sotham plead ignorance to the fact, that where there is one Hereford cow to be found in the extensive Islington Dairies, numbering from 3 to 5,000 cows, that there are not less than 50,—aye, I may safely say 100,—Short Horns and grade Short Horns! Let me then ask if there is not something in this for him to reflect on? Besides, as Mr. Sotham's Herefords are such great milkers, how comes it that they never show their milking properties at the several Fairs I have attended in New York State? He has always a number of Beef Cows there, but never any indications of milk about them. Is it, as I heard more than one gentleman suggest, that he was obliged to dry them of their milk that they might be passable at the Fair? Mr. S. speaks of his cows as not having been in good condition at the Fair at Rochester; how came they to be so, I wonder, when they were *not* in milk, and *fresh from the Genesee Valley!* Was not the land even good enough there for them? Three or four of them that handled well were, as I thought, in very fair order; but others that handled almost as hard as the Bulls, which I complained of, were certainly in very inferior condition, and no wonder at it. And Mr. Sotham must permit me to tell him, since he has made so free with my name, and his opinion of my judgment, or rather *not* my judgment, in his last letter, that if he continues to breed from Bulls with such hides as the two I saw at the Rochester Fair (equal almost to those of a rhinoceros or elephant) he will require land of even a *better quality* than the Valley he is now upon, before he can make them what he would wish. Had they been mine, I hesitate not to say that I would have had their throats cut before they had been ten days old. At any rate, *they* should have had no chance of propagating their species. But the most amusing part of the matter is, that on expressing my opinion, after being asked of a Short Horn Breeder regarding the hard handling of the Bulls, he told me in a very quiet way that Mr. Sotham assured him (and of course others also) that *that was characteristic of the Hereford Bull!* Oh, ye gods and little fishes defend us! What next, I wonder? Well, I certainly am prepared for anything from Mr. Sotham's pen or tongue after this!

And now, Mr. Editor, although I have taken up more space with this letter than I intended, and would indeed be glad to drop my pen;—I do not see that I can do so in justice to myself, without alluding in terms most condemnatory of the *coarse* and *unjustifiable* manner in which Mr. S. has thought proper to bring my name before the public, in your April number His *ad captandum* style of writing I cared not for, nor did his extracts from different letters from time to time (a number of which I could also have made in favour of Short Horns) or his own garbled statements respecting Herefords, trouble me in the least; but when a man can discard all decency of feeling and set at nought every consideration of courtesy and professional usage that is due from one breeder to another, that he may

thereby gain some selfish end, or indulge in some malicious feeling, such conduct is no longer to be borne with impunity. In what way, I should wish to know, can Mr. S. feel himself authorised or justified in this insidious attack upon me, because a Committee, of whom I happened to be one, on Short Horns at the Niagara Fair, thought proper to give the first premium to a cow they deemed deserving, taking all things into consideration, which did not happen to meet with Mr. Sotham's approval. Does Mr. S. in his ignorance, or from a malicious feeling, wish his readers, some of whom may be less informed on the subject than he is, to believe that the fact of the report he alludes to, having my name to it as Chairman of the Committee on Short Horns, renders the decision *mine*? Was ever any thing more preposterous or contemptible! Or, does he mean to say that if I did not quite accord with the other judges in that decision, that it was compulsory on me to state that such was the case! I trow not. If Mr. Sotham has ever acted on Committees as a judge (and one would really be led, against one's will, to believe he had not, from the tenor of his letter), he knows full well that such a step is not actually necessary, unless indeed either party think the discrepancy of judgment too great to rest satisfied without noticing it. But this is rarely or ever done except in extreme cases. I shall, however, be candid to confess that although the cow in question was awarded the first premium, she was not altogether the cow of my choice; and this, I am persuaded, the judges acting with me will well remember. I considered her deficient in two or three essential points, as well as of that style and finish appertaining to all high-bred Short Horns. But where, let me ask, was there a cow, or any other animal on the grounds, that had not deficiencies to prevent them being what we could wish? Nevertheless, Mr. Sotham has given a *very false* statement of some of her points. In the first place, as far as my memory will serve me, she was *not* leggy for a large growing *three year old* Durham Cow,—that she had more bone at that age than I admired, I do not deny; but she was to grow into a fine large animal, and her bone would not afterwards increase in proportion to her size, and allowance had to be made for that. Her brisket was both *prominent, deep, and wide* for her age; and this I will maintain, instead of it being small and short; and that she had a large paunch, or was flat sided, is as erroneous as that black is white. Her quality, I will allow, *might* be better; and this was the chief point, as well as her approaching to coarseness in her head and neck, that rendered her not a favourite with me. Still, she had that property about her which denoted great thriftiness. Her promise for milk was good—her udder, which would, I have little fear, become more developed with her second or third calf, was beautifully formed. Her crop, with two or three other points that Mr. S. complains of, are questionable as far as I can now remember.

But I shall, before your next number goes to press, write to a friend, a good judge of short horns, in the neighborhood where the cow now is, for a truthful account of what she *really* is. At

any rate whether the cow did, or did not, please Mr Sotham's taste, it has nothing to do with the question that my correspondence had reference to; which was, *what* breed of cattle, for all purposes, is most desirable and most profitable for this country? Generally speaking, from what I have seen, and from the experience I have had of fourteen years residence, as well as from *the testimony of others*, I pronounce the Short Horn Breed as such: for they have been for years past, and still are paying the most money, and fetching the highest prices of any other cattle in the country. This I will maintain and evince any day; and I have a violent suspicion that it is *this fact* that lies so hard on Mr. Sotham's mind; and, notwithstanding all that Mr. S. has advanced, I see no reason for altering that opinion. There are, however, some locations where other Breeds may be more suitable; and I suggested the desirableness of parties judging by experience, on this point, for themselves. But because I would not fall down and worship Mr. Sotham and his Herefords, this tirade of his is to be my reward. Oh! had I but known my fate sooner, what a character would I not have given those *splendid Bulls* of his, at Rochester! *Ne importe*, Mr Editor, I believe I shall survive it.

I now somewhat regret that I delayed replying to Mr. Sotham's letter so long; but until the one in your last number appeared, I felt little disposed to answer letters that had so little soundness in them, or that bore so little on the real subject that my first communication commenced with.—I also felt little inclined to write from a constant state of ill health, and the circumstances of a Trust concern, which I have on hand, creating me a great deal of employment and worry; besides having, of late, cultivated a new branch of business on my farm, that takes me a great deal more from home than is agreeable, and which consumes a vast amount of time, as well as the circumstance of the Farm lately purchased, being so much out of condition as to require much labor and capital to bring it into a productive state; added to which I could not obtain the statistical accounts I wished for, at a time when I had more leisure to write.

I have, however, a return which I shall annex of Durhams and Herefords, as exhibited at the New York State Fair for the last four years, and also a correct statement of premiums awarded to the same Breeds at the Smithfield Show of 1850, which will be anything but gratifying to Mr. Sotham, and a glance at both, will, I think, Mr. Editor, satisfy you as well as your readers, how unnecessarily and unjustifiably Mr. Sotham is blowing his loud trumpet on the superiority of Herefords over Short Horns, at least as far as those returns go. I have not been able to procure the Smithfield list of premiums for 1851, but a friend lent me *The Gardener's Chronicle and Agricultural Gazette* of December, 1851, from which I fully expected to be able to make a correct list of the prize animals,—but was not aware until to-day in looking it over, that in some cases it gives the breed of the prize animals in one class and not in another—and as I had not even referred to it since I borrowed it, till now, I cannot give as I intended the number of prizes each

Breed took at that show. But I am assured, notwithstanding all Mr. Sotham has said, that at both Windsor and Smithfield, the numbers as usual, were in favor of Short Horns. At any rate the figures below will shew *incontestably* the *pre-eminence* of the Short Horns as regards both numbers and prizes, notwithstanding Mr. Sotham's dictum to the contrary. And the *extracts* let Mr. Sotham remember are from *authenticated records*. Such as the New York State Society's Books furnish, and the Smithfield Cattle Show Pamphlet of 1850, published by "Wilson, Piccadilly";—no emanation, certainly, of my brain, nor yet any disingenuous statement, of which Mr. S. has so profusely and shamefully indulged throughout this controversy.

One more allusion Mr. Editor, and I have done, feeling, notwithstanding that Mr. Sotham has occupied your pages so long, that I have transgressed beyond the limits allowed to your several correspondents. You must however, use your own pleasure in curtailing the letter, or give a part of it in your coming number, if in time, and the remainder of it in the following one.

The allusion I had reference to is to a question that Mr. Sotham wishes for information on. He asks "how is it that, if Mr. Parsons found so much profit from Short Horns, that he should have grazed so many Cattle of the Hereford and Devon breed?" This question alone, shows the excessive ignorance of Mr. Sotham in such matters.—Notwithstanding, however, that he has put the question in a taunting kind of way, I will answer it in a candid and truthful manner, and which I have little doubt will prove anything but a pleasurable dose to Mr. S. I doubt not, however, but he will in due time find an "antidote!" He'll understand my meaning. The reason why Mr. P. grazed Hereford, Devon, Scotch, and sometimes Welsh and Irish cattle, was, because he could not possibly—any more than could other graziers around him—procure one fiftieth part of Short Horns they wished. Mr. S. may attend any of the fairs and markets of the Midland Counties, where almost all the large droves of oxen and steers are first exhibited for sale, and where he finds one Short Horn for sale, he shall find one hundred of other Breeds. And now I will tell Mr. S. the reason why it is so. The Short Horn breeders know *too well* the value of their own breed, for fattening quickly, and making heavy weights to send them into a distant, or even a home market, for other men to take advantage of. The Breeders turn them into Beef and profit themselves.—They are not to be bought by the graziers. Their numbers, as Steers or Oxen, are few in comparison to other breeds, they are too much sought after and purchased up *as bulls*; and it is only *those* that have not a fair promise for propagating purposes that are put to feeding,—consequently but few of the first class male animals of this breed, are ever exhibited as oxen at shows. Hence the *cause* of the Herefords in some instances, as steers and Oxen, taking the precedence of the Durhams at the Smithfield show. But how stands the matter, let me ask, as regards the *Hereford Cows*? I need only refer Mr. Sotham and your readers to the table below! But does it not appear very strange, after all the boasting of

Mr S. that *not a single prize* was awarded to the *Hereford Cows* at the Smithfield Show of 1850; but that the Short Horns (that miserable breed of cattle as Mr. S. would have it) should have awarded them the whole *three prizes* in class 2nd for Oxen and Steers, above three, and not exceeding four years old,—and a fourth animal in the same class "highly commended!" numbering 22—and the class, too, taking in "any breed!" and that in class 7, for Cows, the Short Horns again take *all the three premiums* against the Herefords and *all other breeds*—the class numbering 18! Again the Short Horns took two prizes in *three other classes*, against *all other breeds!* and a silver medal, for the best animal of *any age and breed*, as extra stock. Truly, Mr. Editor, a *very despicable breed of cattle these Short Horns must be*: and it would seem there must be some other such spooneys as Mr. Parsons, for awarding prizes to cattle that have no merit to deserve them.

Perhaps, your unprejudiced, impartial, and highly qualified correspondent (Mr. S.) will not think much of time and expense in stepping over the *big pond*, and giving those ignorant, or partial Judges, the aid of his matchless talents, or his invective tirade upon their highly culpable conduct. But even if Mr. S. should be able to shew a more favorable return, in a faithful extract, of his favorite breed at the last spring show, against the Durhams, he may depend upon it the Durham Breeders will make up their lost ground at the next spring show. But I do not even know that he can do this. I shall endeavour, at my leisure, to obtain a return of premiums at both the Smithfield and the Windsor Exhibition last year,—or, if Mr. S. has it, *perhaps* he will give the returns as correctly as they are printed.

I must again apologize for this lengthy epistle; but now that I have commenced the subject I hardly know how to lay down my pen. Should there be any thing further from Mr. S. that requires my attention, I will, if possible, reply to it in the same candid and straightforward manner I have now done,—stating facts as I know them to be, and writing nothing but what is true! Will Mr. Sotham confine himself to this?

I am, dear Sir,
Respectfully yours,
H. PARSONS.

Culdaffe Farm
Guelph, 23rd April, 1852.

PREMIUMS AWARDED AT THE SMITHFIELD SHOW OF 1850, ON SHORT HORNS AND HEREFORDS.

Number of Animals Exhibited.	Class	Short Horns, Oxen and Steers	Herefords Oxen and Steers.
18	1st	0	2
22	" 2d	3 and a fourth animal highly commended.	0
20	" 2d	2	1
22	" 4th	1	1
16	" 5th	0 small weights under 0 eighty stones.	0
9	" 6th	0 Scotch, Welsh, and 0 Irish Breeds, only in this class.	0

		Cows and Heifers.	Cows and Heifers.
18	" 7th	3	0
		this class highly com- mended.	
14	" 8th	2	0
24	" 9th	2	0
16	Extra Stock,	1	0
		A silver Medal to Short Horn Ox, a- gainst all Breeds & all ages, including cows, oxen, and steers.	
Total,		1411	411

Miserable Breed these Short Horns, truly!

If this sentiment won't speak for itself, Mr. Editor, and set at naught Mr. Sotham's flourishing Trumpet, I know not what will.

The following is from a printed return of Durham and Hereford Cattle as exhibited the last four years in the State of New York, at the Annual Show of the Agricultural Society of that State.

	1848.	1849.	1850.	1851.
Durhams,	79	64	100	114
Herefords,	28	14	15	27

Further comment is, I think, useless. H. P.

(To the Editor of the Canadian Agriculturist.)

DEAR SIR,—In consequence of continued and increasing sickness in my family, it is incompatible my taking any notice of the inconsistent letter of your correspondent on Short Horns and Herefords, in your May number, as intended. In truth, such is my afflictive position at the present moment, that every hour has to be devoted to my suffering family.

Respectfully and truly yours,
H. PARSONS,

Culdoffe Farm,
June 18th, 1852.

THE FARM OF THE POWER CANADA AGRICULTURAL SOCIETY.

(To the Editor of the Canadian Agriculturist.)

SIR,—It is part no of the design of this communication to give an exposition of the system pursued at the farm, rented by the Lower Canada Agricultural Society for the term of five years: that will probably be done through the medium of their journal. The bare fact may be mentioned, that the proprietor being dissatisfied with its management, had notified the Society that he will take it into his own hands on the 1st September of the current year.

The cultivation of wheat was formerly remunerative. It is now intended to be chiefly devoted to meadow and pasture, with so much of grain crops as is necessary to the successful development of such a system of husbandry.

This establishment, better known by the name of La Tortue, situated six miles west of La Prairie and south of the St. Lawrence, consists of 500 acres, and possesses a generally level surface.—It is intersected by La Tortue creek, which is bordered on each side by intervale land; affording excellent shade, and the sweetest pasture.—The soil consists for the most part of a tenacious clay that *bakes* after heavy rains. This quality,

as most farmers know, is not a very desirable one; but is here overcome, in some measure, by the use of a *compost of lime and muck*. Limestone of the Trenton formation crops out near the bed of the stream, and may be easily obtained. The proprietor, taking advantage of this, has constructed a kiln where he can burn all that is required for agricultural operations.

I have not seen, in any part of America that I have visited, buildings for stock so commodious and extensive as those of La Tortue. They are on a scale commensurate with a very successful system,—one into which order and economy with a view to profit should largely enter. The winter stable can accommodate sixty cows in one apartment, arranged across the building in double rows with heads and passages between for feeding and milking. They can drink at pleasure from water supplied by a chain pump from a capacious cistern. This arrangement is necessary, resulting from the confinement of the cattle for the greater part of winter.

The urine has free passage from each range to a large tank, from which it can be taken for any required purpose. A somewhat novel method has been tried for its distribution. Pipes lead from the cistern in the yard to a reservoir in the field,—which is on wheels, and can be drawn from place to place by horses. An engine, similar in construction to that used in cities by the fire department, is then put in operation for scattering it. The reason of this complicated machinery, finds an explanation in the system of cultivation it was intended to promote. Soiling of cattle was contemplated; to the success of which, the use of the application of liquid manure is well known.

A summer milking stable has been erected which holds sixty-four cows. To those desirous of building after improved plans, a visit may be safely recommended; which, I have no doubt, will be amply repaid. All hay before going into the barns passes through a weigh-house, where the weight of each load is carefully noted, and that of the aggregate found, thereby affording material for an estimate, if not true, at least approximate, of the number of cattle to be wintered.

The stock on the farm is grade. Ayrshire and Native blood chiefly prevails. It has been said that a cross between the Durham and Native breeds is good at the pail. I do not know that many comparisons of the yields of both are before the public which safely decide in favor of either. We, however, find the Durham grade in more frequent numbers.

A great variety of improved implements has not yet been introduced. The Scotch Plough is preferred; although I noticed one of Prouty & Mears of Boston, and one lately imported from France. Neither of these has been carefully tested, nor is a decision likely to be given in their favor. The use of the grain drill has been rejected. Time indeed will be required before its general introduction into the country, as many of our men can produce in most soils the same effect with the plough;—a statement anything but disparaging to them as a class.

I regret that the present position of the farm, and the parties who superintend it, prevents the publication at present of data, whereby a truthful representation of its management and profits might be derived. If, in any farming establishment, the expenditure exceeds the returns; dependence of others on the system pursued is fallacious; and if its recommendations for practice are inapplicable with the great body of farmers, it can never be viewed as a model.

I am,
Respectfully yours,
A. KIRKWOOD.

Quebec, 21st June, 1852.

EFFECTS OF CHARCOAL—REMARKS ON
CATTLE, &c.

Piffardinia, Livingston Co.,
New York, June 21, 1852.

DEAR SIR,—My time is now so much occupied that I cannot find enough to answer Mr. Croft as I would wish, but I will state what has come under my observation for his consideration and study for the present.

Some time since, I found charcoal left from an old pit about twelve inches in thickness. The blacksmith who made the coal told me that it had laid there thirteen years, and he left it about in the same state as when I found it. It was exposed to alternate rain and sunshine, snow and frost, for that length of time, without any sign of decay.

I made a compact heap of slaughter house manure, night soil, barnyard and street manure. I drew this charcoal, and spread it over the top, probably from an inch, to an inch and a half thick, and when put on it was in as dry a state as when first made, although thirteen years old. In less than a month it began gradually to decay, and all of it was changed in appearance to something like black salt, when worked with a shovel. This was one point, with some others, that convinced me that charcoal was an absorbent of the stench that evaporates; for there was none of it floating in the atmosphere as previously and which I think was the cause of its decay. Had it been put on the manure heap the first day it was made it would have had the same effect. I turned over this Composition, and mixed the various kinds of manure together, and when drawn out on the land the charcoal was scarcely perceptible; it would spit out with a spade or shovel and had scarcely any smell to it.

I put this mine on a piece of impoverished clay soil—grass land, in the following manner, as top dressing: first from eight to ten loads per acre. Secondly, from sixteen to eighteen. Thirdly from twenty-eight to thirty. The first was exhausted after two years mowing, and became as much impoverished as formerly. The second proved the benefit for years, and returned to its impoverished condition. The third was not exhausted in seven years. This convinced me in my own mind that there was no loss from evaporation, and that the stench that escaped from the manure into the charcoal, decayed that also, or why was

it not decayed by the rains, sun, and atmosphere, in its previous situation; it might have laid there thirteen years longer, had it not come in contact with this stench (I will not call it ammonia, as there seems to be some *mystery* about the term.) By this *proof* satisfactory to me, I thought the sooner I put my manure on, or into the soil, the better, if in a situation where the rains could not wash it away. I highly approve of manure being put on the soil from the stables in its green state, and when long, if ploughed in it will very soon decay, and the nearer you get it to the surface the better.

Yours sincerely,
WM. HV. SOTHAM.

P. S.—I do not consider Professor Low any authority on cattle, nor any other Professor, who professes to write a book, for the sake of the money he can gain by it; that is the object, not the truth about the cattle; for such writers will praise that breed the most, whose breeders pay the most for it. If the large sums of money that have been given to authors, by short horn breeders, was to be brought before the public, for puffing that particular breed, it would astonish those who know nothing about it. I can do it if you think it worth noticing in your paper. Professor Low would not escape this censure, and I will give you one sentence from "Youatt" the celebrated text-book, which is sufficiently to show he knew nothing of the qualities of cattle. In page 11 he says speaking of Devons, "They have been long celebrated as a breed of cattle, beautiful in the highest degree, and in activity at work, and aptness to fatten, unrivalled." In speaking of Herefords, page 32. "They are even more kindly feeders than the Devons, and will live and grow fat when a Devon will cease to live." And further in the same page. "The Devon will acquire bulk and hardihood, and the Herefords a finer form and activity." We know that Youatt "wrote a book," but do these conflicting statements make any sense of it. I can show you statements of Professor Low much in the same style, which it may suit my purpose to do at some future day.

I think breeders ought to give their own statements, and if they do not tell the truth, they will soon with meet opposition; and then the public will be able to judge which differs from it. The columns of agricultural papers should always be open to these discussions with a fair and liberal view to both parties, and without fear or favour. Yours is the best paper I have ever dealt with for this purpose. The Editors on this side the lake are partial, or are afraid of giving offence to part of their correspondents. Others get up a paper purposely to puff the commodity they sell, and make that the first object.

Let us hear what more Mr. Parsons has to say on Short Horns, and when the discussion is ended let the public judge between us.

HEREFORDS *versus* SHORT HORNS.

By Mr. Sotham's request we insert the following letter from the pen of the late Rev. J. E. Smythies

and published in the *Mark Lane Express*, a short time previous to his decease. We would have liked the communication much better had it been written in a less boastful spirit; and we by no means agree with the respected writer, that from any facts or reasonings he has adduced, the much disputed question "has now been set at rest forever." Our readers will take nothing for granted, but examine *both sides* candidly for themselves:—

To the Editor of the *Mark Lane Express*.

DEAR SIR,—One nut more for Mr. Kearey to crack, and I have done with him. Soon after Mr. Kearey's prize essay appeared in the *Journal of the Royal Agricultural Society*, I addressed a letter to you objecting in the strongest terms to an assertion contained in it, "that it took ten months longer to make up a Hereford than it did a Shorn-Horn." Since that essay and my letter were published we have had two Smithfield shows. Now, what have they done to prove the truth or falsehood of this dogmatical assertion? In the show of 1850 the gold medal was awarded to a Hereford steer, two years and ten months old, though there were at least forty short-horns in the show yard with him, at least thirty-five that were from one to two or three years older than he was! This year the Herefords take seven prizes; while the Short-horns get only one, and that a second prize.

This question is now set at rest for ever; and after all the bragging, boasting, and false assumption of superiority, the Short-horns must be contented in future to put up with the second place as a breeding stock. And how has this been accomplished? Has this result been brought about by a large expenditure of money to breed a few superior Herefords for the occasion? Just the contrary. On the side of the short-horns you have all the rank, the wealth, the influence and intelligence of the great nobles of the land—The Duke of Rutland, the Marquis of Exeter, the Marquis of Northampton, Earls Spencer, Ducie, Carlisle, Hardwicke, Fitzwilliam, and Burlington, Lords Feversham, Berners, &c.; Sir Charles Knightly, Sir Charles Morgan, Sir C. Isham, with a long list too numerous to set down. Whom have we on our side to oppose this host of influence, wealth, intelligence, and perseverance but about a dozen little tenant-farmers in the county of Hereford and on the borders of Shropshire about Ludlow? How wonderful is truth; nothing can repress it! There has been an expenditure of many thousands of pounds to try to establish the superiority of the Short-horns; but in spite of every adverse circumstance the truth will out—the Hereford is the best breed to supply London with beef.

This question is set at rest forever; but our triumph would not have been complete if the Short-horned men had not gone to the members of the Smithfield club, and requested them to hide their disgrace in future by letting them take their prizes in their own class, that they may no more come in contact with those horrid Herefords. I hope and trust those true, honest-hearted, sensible sons of John Bull will not consent to any such thing. The club was established to discover by competition which was the best breed. It has answered the purpose for which it was established; and I hope they will not alter it. It is the only course upon which we can have a fair, unobscured fight; and I hope we shall not be deprived of that. If the cost of one of those herds of Short-horns from the beginning could be laid before the public, it would make Mr. Mechi's balance-sheet appear like a fixed star at noon on a summer's day.

I cannot write any more on this subject at present, as I am now so ill I can hardly hold my pen. If you will give this a place in your next week's paper you will very much oblige.

Yours truly,
J. R. SMITHIES.

East Hill, Colchester.

IMPROVEMENT IN BUTTER MAKING.

The following directions and suggestions relative to this important department of rural economy have been sent us by the enterprising Senior Vice President of our Provincial Agricultural Association, who will, we trust, forgive us for publishing his accompanying letter, as a sense of duty impels us not to withhold its contents from our readers. The more this subject is examined, the more clearly does it appear that large portions of this Province may be profitably devoted to the Dairy and raising of Cattle, to an extent which at present is but little understood. When our American cousins have properly learnt wherein their true interest lies, and respond to our fair and reasonable offer, now so long and urgently made for an unfettered system of reciprocal trade, the intercommunication of the two countries will proceed in the ratio, measured by the rapid growth and increasing wants of these British Provinces, and the already gigantic neighboring republic. Let us hope in this age of steamboats and railways, the people occupying both sides of the line of 45°, who speak the same language, and trace, in great measure, a common descent, will ere long recognise a fair, reasonable and common principle of exchanging their productions to the great and permanent advantage of both.

Brockville, May 29th, 1852.

MY DEAR SIR,—

With this I send you a handbill of which our firm have issued and circulated about 25,000, containing some suggestions on the very important subject, to Leeds & Grenville, of improving the quality of our butter. Much of the information I have culled from various publications—the rest has been suggested to me in the course of our trade in that article. They, although common place, I trust will be the means of doing some good. If you think the contents of the bill worthy of a place in your journal, and will serve the cause of agriculture, in the smallest degree you are at liberty to publish it.

By the last Agricultural Census for Leeds and Grenville, I observe that the quantity of butter made in these Counties for 1851, was 1,251,250 lbs. taking out for consumption, if you please, say, 451,230 lbs., would leave for export, say, 800,000 lbs., which at 7½ per lb., is £25,000—no small item in the exports of our Counties. Our continuity to Boston and New York by Railway, by which such produce as butter may reach either of these two great consuming places within two days time, will undoubtedly hereafter, as it has indeed already done, enhance the value of not only butter, but coarse grains and many other agricultural products, which have hitherto found but a very indifferent market near home.

The article of cheese is now being made in Leeds & Grenville to some extent;—a number of large farms have been let out as dairy farms.—From one of these our firm was interested in the purchase last fall of about eight tons, which was sent to Scotland for sale. With respect to the quality of this shipment we were advised that the firm to whom we consigned had, at that date, recently effected sales of 1800 boxes of cheese from the United States, which they stated was inferior in quality to our shipment, and further that ours would compare most favorably with any cheese consigned to them from the United States. This being the case, it offers good encouragement to the farmers to enter more vigorously into competition with the daring-men of the United States in the European market.

The past winter our Counties have been visited by buyers from the United States of Horned Cattle, Horses, Sheep, and even pigs have been bought and driven across the lines in large numbers. The question arises whether such sales have been profitable to our farmers,—if they have, then breeding and raising stock for a foreign market should hereafter have the farmers increased and best attention.

In view of the present low price of wheat and flour in the markets that we have heretofore exported our surplus to, I think it incumbent upon our farmers to turn their attention less upon wheat, and divide their industry upon other products,—say, Pork, Cattle, Horses, Wool, Butter, Cheese, &c.

I hope we shall have a good fair in September at your city.

With best regards,

I am,

Dear Sir,

Yours truly,

WM. MATTHIE.

NECESSARY IMPROVEMENTS TO BUTTER MAKERS.

SALT.

Use fine salt ground from Turk's Island Rock Salt, having first been thoroughly washed and sifted. This salt has recently been prepared at Boston, and introduced into our country, and may be had from most of the merchants. *Avoid using the Onondaga Dairy Salt.* If the Turk's Island cannot be conveniently had, then use clear, white stoved Liverpool, after pulverising. This can be done by rolling it with a bottle, or any other round smooth hard substance. *Much good butter is spoiled by using bad salt!*

MILK DISHES.

Use shallow, well glazed earthen pans, carefully scalded and exposed to the air, out of doors, if possible, for a few hours, before each time of using.

KEEPING MILK.

Keep your milk, in a cool, quiet place, free from foot damp, where there is a good circulation of fresh air; the dishes resting on stone, or when stone is not to be had conveniently, upon narrow strips of board placed about one inch apart, which will admit of cool air circulating immediately underneath the pans, away from the wall, and raised not less than three

feet from the ground; no meat or vegetables should if possible, be kept in the milk room.

CHURNING.

The best temperature for cream when about to be churned, is said to be sixty-two degrees, which is a little cooler than the medium heat between new drawn milk and cold well water. When the butter is churned and gathered, draw off the milk, then put in a few quarts of cold spring or iced water, and wash out all the milk, while the butter is still in the churn, and by the same process as you churned the cream. When sufficiently washed, which should only be enough to free the butter from the milk, that being all that is required—too much working is not good, the former makes it waxy, and the latter bleaches it—keep your butter as rich a yellow in the color as possible. To every pound of butter add threefourths of an ounce to an ounce of the salt named above, and work it in by the same process as churning or by a wooden ladle—never by the hand, as the heat of the hand is injurious to the butter.

TUBS OR KEGS.

The tub is the best for the American market; the keg the only package suitable to ship to Europe. They should be made to hold about 80 or 90 lbs., and of the best sound, seasoned white oak, or white ash timber, clear of sap and knots—avoiding bass wood heads in all cases—made in the best possible manner, and having due regard to their being neatly and strongly hooped, uniform in size, and perfectly tight—half round hickory for kegs, and split ash hoops for tubs.

PACKING.

Before using the package, let it be soaked two or three days in strong brine, then correctly weighed, and weight in figures marked on the head. When ready to commence packing, sprinkle of this salt in the bottom of the keg, about one fourth of an inch deep, and over it spread a piece of thin well washed brown cotton, cut one and a half inches larger than the bottom of the keg or tub, and then pack your butter solid. If you have not sufficient butter so fill your package at once, be careful to spread on a similar piece of cotton to that on the bottom over the butter, with about half an inch of damp salt on the cotton, so as to exclude the air until you have another packing—*bear in mind*, that lengthened exposure to the atmosphere is injurious to butter. When your package is full, after making the surface smooth and level, put your cotton cloth, first washing it carefully over the top, "*tuck*" it down well around the tub or keg, drive back the hoops, and cover it with about one-fourth of an inch of this salt. Wet the salt enough to form paste; let it dry, put the head or cover on tightly, and put the package away in a cool, airy place. Your butter will then keep for months.

SELLING AND REMOVING IT FOR SALE.

Do not sell your butter in pailsful if you can possibly avoid it, rather sacrifice a little and pack your butter in a keg or tub yourself; you can do it better than any storeman, and if it pays him to pack it, it will pay you; but if necessity compels you to sell, then carry your butter in a well scalded wooden tub or pail free from paint, and covered with a thick, clean, wet cloth; surround the package with grass, and be careful not to allow it to stand an hour or two in the waggon exposed to the rays of the sun, after you have arrived at the place of sale, before removing it to the buyer's cellars.

Avoid removing your keg butter in hot weather the place of sale. Either select a cool day, or remove it in the evening or early morning, taking care to have a little hay under the keg, and plenty of grass or wet hay over the package as it lies in the waggon.

MERCHANTS.

If you buy butter in pailsfuls, sort carefully the colours so as to pack that of like shade in the same keg—layers of white and yellow are sure to ruin the value of your butter. Avoid keeping it too long before packing, and never, except in extreme cases, attempt working it for the purpose of extracting milk after it reaches your cellar—this should be done before it leaves the milk-house—you are more likely to injure the nature of butter by making it tough and waxy than improve it. Pack all you get in during each day before the following morning—as before remarked lengthened exposure is most injurious to butter. While collecting the pailsful, keep the butter in a large covered tub, full of weak cold stoved salt brine, use ice if at hand, taking care to scald your tub well at least once each week.

Encourage small farmers, by furnishing them with proper packages, to pack their own butter and bring and sell it to you when full. And to throw some responsibility upon and directly identify them with the character of the country in the quality of this article, as well as to bring home to their pockets the advantage of making good butter, put their initials upon their own kegs or tubs, and when sold take a little pains to inform the maker of the result of the inspection, and occasionally when good make them a little extra allowance—it will be a gift at interest—when poor explain and point out the great advantage to be derived by making it good, it will stimulate to improvement.

FARMERS.

Bear in mind as the season for making butter is just beginning, that good butter, which is sold for 7^d per pound, is made from the same quality of milk as poor butter, which is often a drug at 5^d per pound, and all that is required to make the bad equal to the good is, no additional expense, but only a little more care and attention to small details while making. The character of our Country, Canada, and especially of Leeds and Grenville, as butter producing Counties, is something well worth sustaining in the present age of progress and improvement, and the saving to you, individually, in money, if you each only make two kegs or tubs, of 50 lbs. each, is over \$50, and on the aggregate quantity made in the United Counties of Leeds and Grenville, which is supposed to be about 10,000 kegs or tubs, makes the enormous difference of about \$33,000 in the year, a sum well worth saving in these hard times.

A valuable portion of the suggestions embraced in the foregoing is taken from an American handbill, headed "Butter Makers."

The present handbill contains some suggestions made by friends and otherwise collected since the first fifteen hundred were issued and circulated, and which the writer trusts will be found important, as bearing upon the subject of securing an improvement in the quality of the butter made in Leeds and Grenville in 1852.

Brockville, May 1852.

JETHRO TULL.

On the 3rd of June, 1740, died Jethro Tull, the inventor and unwearied advocate of drill sowing and frequent hoeing—the greatest improvements which have been introduced into the modern practice of tillage. The saving of seed effected by this practice is no small consideration; for, let it be remembered, that millions of acres are annually sown to grow food for man and his assistant animals, and that by drilling, more than one-third of the requisite seed is saved. But this is of trivial importance when compared with the facility that drilling affords for the

destruction of weeds, and loosening the soil by the hoe. Every weed, living as it does, upon the same food as the cultivated plants among which it grows, is really a robber, depriving them of a certain portion of their nourishment, and rendering them less vigorous by depriving them of light and air proportionate to its own size. On the importance of loosening the soil we need not farther insist, for we have repeatedly explained that importance, and our coadjutors almost weekly advocate the benefits derivable from the practice. Before Tull's time, thick-sowing broadcast and the scanty employment of the hoe, were the established mode; and when Tull adopted and published a work recommending a practice totally the reverse, though many came to see him: "new system of husbandry," yet they, for the most part came to deride it, and his very labourers thwarted him in "his new fangled ways." Yet he wrestled firmly and undauntedly against all difficulties; and so nobly does he stand forth in every period of his life, that we must glance over its prominent passages, and hold them up to the cultivators of the soil, to cheer them as well as warn. Tull was educated for the legal profession, but acute disease drove him from a sedentary life, but not into idleness. During his travels in search of health he directed his attention to the agriculture of the countries through which he passed, and finding that they never manured their vineyards, he rashly concluded that all plants might be similarly cultivated. On returning to England he occupied his own farm of Prosperous, at Shalborne, in Berkshire, and commenced that warfare, to win success against adverse circumstances, from which he only ceased on his death-bed. If any cultivator de-pairs over a thin and hungry soil, let him take courage, for Tull won crops from a soil of the same character; nor let him be subdued though sickness enervate him, for Tull was afflicted with agonizing disease; yet was never cast down. The tradition of his neighbourhood is that when confined to his couch by incurable maladies, he carried on his experiments in boxes placed before his windows—sowing his seeds and trying his surface-stirring processes with all the enthusiasm of an inventor. If stupid, prejudiced, and perverse servants encumber and thwart the cultivator, this too, was Tull's fate; and like him let the cultivator meet such obstinacy and ignorance with a firmness that will defy all such opposition. He is still spoken of by the old labourers of the district as being a man whom it was impossible to oppose with success, and the secret of his triumphs over peasant prejudices is told in this, his own apothegm, "There is more than a rent odds in saying to the husbandry servants, *Go and do this, or Come, let us do it.*" Like many other inventors he arrived at some conclusions not justified by his experiments; and among these errors was the opinion that loosing and pulverizing the soil might supersede the use of manure altogether, but he lived to see his mistake, and, which is still more worthy to acknowledge it. Our space warns us to conclude, and we will do so in the words of Mr. Cutbert Johnston, who well appreciates his merits! "Tull lies buried without even a stone to indicate where such a benefactor of agriculture reposes. His grave is even undetermined, and if he died at Shalborne, there is no trace of burial in its parish register. The tradition of the neighbourhood is, that he died and was buried in Italy. His deeds, his triumphs, were of the peaceful kind with which the world in general is little enamoured; but their results were momentous to his native land. His drill has saved in seed alone, the food of millions; and his horse-hoe system, by which he attempted to cultivate without manure, taught the farmer that deep ploughing and pulverization of the soil, render a much smaller application of fertilizers necessary."—*Collage Gardener.*

W.



SHORT HORN BULL, "HALTON," THE PROPERTY OF S. P. CHAPMAN, ESQ., GLOCKVILLE, N. Y.

"HALTON."

We are enabled this month to present our readers with a portrait of this distinguished Short Horn Bull, whose many superior excellencies are well known and appreciated, both in Canada and the United States. HALTON was bred by *George Vail, Esq. of Troy, N. Y.* (who has been a most successful breeder, as well as importer of Short Horns, for a number of years,) and was purchased when only three months old for \$300, by the late John Wetenhall, Esq. and his near neighbour, the Honourable Adam Fergusson, for the improvement of their respective herds. Halton became the sole property of Mr. Fergusson upon the lamented death of Mr. Wetenhall. The improvement effected by Halton on Mr. Fergusson's herd was of the most striking and satisfactory nature, as numbers of his progeny fully testify; and it was with much regret that Mr. Fergusson found it necessary to part with him, from a dread of breeding too much "in and in." He was purchased by an eminent American Short Horn breeder, *S. P. Chapman, Esq. Clockville, Madison County, N. Y.*; who, we are informed, is highly delighted with him, as well he may; and considers him a Bull as near perfection in form and handling, as any animal can possibly attain.

Halton is of a rich dark roan, and was dropped in August 1848. Got by Meteror; Dam, Lady Barrington, both of whose pedigrees are duly recorded in the *American Herd Book*. The *Duchess* family of Short Horns, which is considered by many of the best judges superior to any other of that world renowned breed, has thus been successfully introduced both into Canada and the United States, as the splendid herds of Messrs Fergusson and Vail, to say nothing of others, amply show. The late celebrated English breeder, Mr. BATES, of Kirkleavington, Yorkshire, originated, or at least, greatly improved the Dutchess' blood, and we purpose giving in our next some account of his proceedings, both as a breeder and a farmer, with a general notice of the history and progress of Short Horn Cattle.

There are but few who know how to be idle and innocent; by doing nothing we learn to do ill.

HORTICULTURE.

THE SCIENCE AND PRINCIPLES OF GARDENING.

No. VII.

PROPAGATING BY SEEDS.

The most common way of procuring a great number of plants of one kind, is by sowing seed; indeed, this is the means which nature herself has provided, and, of course, it is the most simple and efficacious.

Every seed has a shell more or less hard, to protect it from external injury, and its base is furnished with what is called the *seed-pore*, (popularly the *eye*,) which performs two important functions, viz., conveys the nutrient pulp to the seed while in a young and green state, and previous to its becoming ripe, and also is the point from which the roots and stem of the young plant proceed after sowing.

Within the shell is the kernel, consisting of the embryo plant, with its radicle or root, its gemlet or stem, and the neck between these, which afterwards becomes the crown, besides the seed lobe or lobes containing materials for nourishing it in the first stage of growth.

In order to excite the embryo into action, and induce it to grow, four things are indispensable—heat, water, air, and darkness.

The heat is required to soften the nutrient materials in the lobes, but without water it would be more likely to harden these. Pure water is more appropriate than water containing humin or other rich materials, that which is contained in the lobes being sufficiently rich.

Freely circulating air is indispensable for supplying oxygen gas, and carrying off carbonic acid gas, a process the reverse of what takes place in leaves exposed to sun-light. For the same reason light is injurious, by carrying off the oxygen gas requisite in this stage of growth.

In sowing any sort of seed, these four circumstances must be carefully attended to. On account of the absence of heat, accordingly, seeds will not vegetate during frost; without a sufficient supply of water, they will not come up when sown in dry sand; for want of air they will not come up if too deep in the ground; and if not duly covered, they will not come up from having too much light.

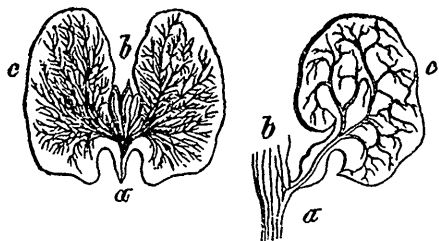
Seeds, however, often germinate in the light, such as corn in wet seasons, before it is cut; but they do not, in these cases, produce strong plants, as the root requires to shoot away from the light, as much as the stem into the light. Birch seed succeeds best when not covered. These are exceptions, not rules.

Most seeds are benefitted by steeping them for an hour or two, previous to sowing, in pure water, which, in the cold weather of spring, may be made milk-warm. Pickles, train oil, urine, and other steeps, must in most cases, be injurious; and will never, as is ignorantly pretended, destroy the eggs of insects, even if such be among

the seed, of which we know not a single instance, not even the eggs of the turnip fly, as lately asserted.

Too much water, however, will be certain to injure the seeds, by gorging them, and rendering them dropsical and liable to rot. But, on the other hand, many seeds will vegetate in water alone, provided the vessel in which they are placed be open at the top for the admission of air; so that a good supply of water is absolutely essential for furthering this process. It is important, however, to avoid both extreme drought and moisture, in the propagation of plants by seed, either of which is more or less injurious. Hence the propriety of sowing seeds when the weather is only moderately wet, and the ground not saturated with moisture, in order that the seeds may obtain a due supply, but not a redundancy of water.

The seed lobes, after having parted with some of their nutrient matter, for the production of the roots, protrude themselves from the soil, expand and are changed into seed leaves. They then perform functions of a totally different nature, and proceed to prepare pulp from the sap now taken up by the young root, for the support and development of the stem and leaves. When these latter have become sufficiently expanded to be capable of providing pulp for themselves, and the other parts of the plant, the seed leaves, having fulfilled the office assigned to them by nature, soon wither and decay.



Seed lobes in the bean, with the nutrient vessels branching through them magnified. *a*, *a*, root; *b*, *b*, gemlet; *c*, *c*, seed lobes.

The seed leaves are, therefore, of such vital importance to plants, at an early stage of their existence, that if they are destroyed at this period of their growth, either by insects, such as the turnip fly, snails, slugs, or grubs, or by birds, frost, or other casualties, they seldom recover, and the whole crop generally perishes. This is not unfrequently the case with young turnips, radishes, and cabbages; and the only alternative, where it is permitted to occur, is to dig the ground slightly over, and sow it afresh. The greatest care, however, should be exercised to prevent such an accident, as it will frequently throw the crop too late to be of any real use.

Propagation by seeds, then being the most natural and easy means of multiplying plants, should ordinarily be preferred. But some plants, as the foreign geraniums, and most double flowers, do not ripen seed; in others, as the rose, the seeds are generally two years in the ground before they

vegetate, and do not produce flowers for several years after; and in other cases, each seed will produce a plant essentially different from the parent species. This latter circumstance has been taken advantage of by gardeners and florists, and hence are produced the almost innumerable beautiful varieties of the dahlia, chrysanthemum, heart's-ease, tulip, ranunculus, and many others too numerous to mention. In culinary vegetables, also, most of our best sorts of cabbage, lettuce, and other similar kinds, have been produced from seed. These are only to be obtained, however, by what is termed "cross-fertilization," or hybridising, which is simply transferring the pollen, or small yellow or red dust, from the anthers of a flower of one sort, to the summit of the pistil or female part of the flower of another sort, and thus producing seed, the plants which will partake of the nature of both the parent species.

A continuation of such circumstances as those before mentioned, has led to the application of art in the propagation of plants, and several methods have successively been devised, for multiplying particular kinds, in a different manner than by sowing seed. Indeed, to such an extent have the various systems been carried, that propagation by seed has been almost entirely superseded, except with such kinds as are annual or biennial duration, or are of herbaceous habits. In the following arrangement, it will be seen that the different methods have been treated of in the order in which they were naturally suggested.

ROSE INSECTS.—If our lady readers are desirous of keeping their rose bushes free from the small green vermin that so frequently infect them, the following remedy will be found a most effectual one:—To 3 gallons of water add one peck of soot and one quart of unslacked lime. Stir it well—let it stand for 24 hours, and when the soot rises to the surface skim it off. Use a syringe for applying it.—*N. E. Farmer.*

DIRECTIONS FOR BOILING RICE.—Take one pint of good clean sound rice, wash it well in several waters, rub it well between the hands, and pour off the water at each washing as soon as possible, to take off all the small particles that would be likely to color the rice.—This done, take one quart of water to one pint of rice, put in one-half teaspoonful of fine salt, put it over the fire, let it boil fifteen minutes without stirring, and then take it off. If the rice has not taken up all the water, pour it off; if it is good rice it will take it all up. When this is done, give the rice one good stirring, and the only one, place the kettle on some hot embers where it will simmer for fifteen minutes longer, this is done your rice will come on the table, each grain separate, as white as snow and well cooked.—*New England Farmer.*

CURD CHEESE-CAKE.—One quart of milk, half a pound of sugar, a quarter of a pound of butter, five eggs, one teaspoonful of grated nutmeg, a quarter of a pound of currants

Warm the milk, and turn it to a curd, with a piece of rennet, or a tablespoonful of the wine in which a rennet has been soaked. As soon as the milk is a thick curd, take it out with a broad ladle or spoon, and lay it on a sieve to drain. Beat the eggs, and add the drained curd, also the sugar and butter, which must have been beaten to a cream, then the spice and fruit. For those who would prefer it sweeter, more sugar may be added. Line your pie plates with paste, fill them with the above mixture, and bake in a moderately hot oven.

The Forest Trees.

BY ELIZA COOK.

Up with your heads ye sylvan lords,
Wave proudly in the breeze,
For our cradle bands and coffin boards
Must come from the forest trees.

We bless ye for your summer shade,
When our weak limbs fail and tire;
Our thanks are due for your winter aid,
When we pile the bright log fire.

Oh! where would be our rule on the sea,
And the fame of the sailor band,
Were it not for the oak and cloud-crowned pine,
That spring on the quiet land?

When the ribs and masts of the good ship live,
And weather the gale with ease,
Take his glass from the tar who will not give
A health to the forest trees.

Ye lend to life its earliest joy,
And wait on its latest page;
In the circling hoop for the rosy boy,
And the easy chair for age.

The old man totters on his way
With footsteps short and slow;
But without the stick for his help and stay
Not a yard's length could he go.

The hazel-twigg in the stripping's hand,
Hath magic power to please;
And the trusty staff and slender wand
Are plucked from the forest trees.

Ye are seen in the shape of the blessed plough,
And the merry ringing flail;
Ye shine in the dome of the monarch's home
And the sacred altar-rail.

In the rustic porch, the wainscotted wall—
In the gay triumphal car—
In the rude-built hut or the banquet hall,
No matter! there ye are!

Then up with your heads, ye sylvan lords,
Wave proudly in the breeze;
From our cradle bands to our coffin boards
We're in debt to the forest trees.

BRITISH POLYTECHNIC FIRE.

On Saturday evening there was a private view at the Polytechnic Institution of the "new fire," recently patented by Dr. Bachhoffner and Mr. Defries. The process consists in substituting for coals in the ordinary grate, thin laminæ of indestructible metal, which being acted upon by gas, instantly become red hot, and expose a large amount of radiating surface, securing a cheerful bright open fire. It is proposed to employ a non-carbonised gas, obtained from the decomposition of water, which has no unpleasant smell or injurious effect incident to the use of any other gas. There is a complete absence of smoke, dust, ashes, soot, sparks, and other annoyances which attend upon the present system of coal fires. It can be lighted at a moment's notice, and the material being indestructible, the only

expense is that of the gas, which can be supplied at the cost of 1s. 6d. per 1000 feet. The advantages are manifold. The gas is not open to the usual objections entertained against its adoption in private residences. It is perfectly clean, gives a great heat capable of being regulated to the greatest nicety, and consequently well adapted for culinary purposes. For this reason also it will prove a great boon to invalids. From experiments which have been made, the saving is about 30 per cent. over that of a coal fire, the cost for a single one in a large room being about 3d. per day. In a sanitary point the benefit conferred will be immense; for the heat produced from the combustion of gas far exceeds that of any other material, and the atmosphere will at once be relieved from the injurious effects of smoke, either from dwelling-houses, furnaces, or factories. There is, therefore, no longer any reason why the atmosphere of the metropolis and other densely crowded cities should not be rendered as clear and uncontaminated as that of the purest country district. It is the intention of the patentees to form a company to carry out this invention, and to apply for an Act of Parliament.

NO MATTER DESTROYED IN COMBUSTION.

When a body is subjected to the action of heat, its elements are decomposed, and its constituent particles separated, many of them combine with other particles of matter, and form new substances possessing other qualities. Thus, when coal or other fuel is burned, the carbon enters into combination with one of the constituents of the atmosphere called oxygen, and forms a gaseous substance called carbonic acid, which rises into and mixes with the atmosphere. Another element, hydrogen, combines with the same constituent of the atmosphere and forms vapour, which also disperses in the atmosphere. Sulphur, which is also occasionally present in fuel, combines with the same constituent of the air, forming a gas called sulphurous acid, which also escapes into the atmosphere. Thus the entire matter of the fuel, with the exception of a small portion of incombustible matter, which falls into the ash-pit, is dispersed in the air, and no destruction or annihilation takes place. That no portion of the matter of the fuel is destroyed or annihilated can be established by the incontrovertible experimental proofs of the chemist, for by the expedients of his science all the products of the combustion which have been just mentioned can be preserved, weighed, and decomposed. The oxygen which has entered into combination with each element of the fuel can be reproduced, as well as the constituents of the fuel itself, the latter of which being weighed, as well as in the incombustible ash, the weight of the whole is found to be precisely equal to the weight of the fuel which was burned and apparently destroyed.

JOHN ABERNETHY, the eminent surgeon, used to tell his scholars that all human maladies arose from two causes—stuffing and fretting.

MINUTENESS OF ANIMALCULES—THEIR ORGANIZATION AND FUNCTIONS.

The globules of blood, small as they are, are exceeded in minuteness by innumerable creatures whose existence the microscope has disclosed, and whose entire bodies are inferior in magnitude to the globules of blood. Microscopic research has disclosed the existence of animals, a million of which do not exceed the bulk of a grain of sand, and yet each of these is composed of members as admirably suited to their mode of life as those of the largest species. Their motions display all the phenomena of vitality, sense, and instinct. In the liquids which they inhabit they are observed to move with the most surprising speed and agility; nor are their motions and actions blind and fortuitous, but evidently governed by choice and directed to an end. They use food and drink, by which they are nourished, and must therefore, be supplied with a digestive apparatus. They exhibit a muscular power far exceeding in strength and flexibility, relatively speaking, the larger species. They are susceptible of the same appetites, and obnoxious to the same passions as the superior animals, and though differing in degree, the satisfaction of these desires is attended with the same results as in our species. Spallanzani observes, that certain animalcule devour others so voraciously that they fatten and become indolent and sluggish by over-feeding. After a meal of this kind, if they be confined in distilled water so as to be deprived of all food, their condition becomes reduced, they regain their spirit and activity, and once more amuse themselves in pursuit of the more minute animals which are supplied to them. These they swallow without depriving them of life, as by the aid of the microscope, the smaller, thus devoured, has been observed moving within the body of the greater. The microscopic researches of Ehrenberg have disclosed most surprising examples of the minuteness of which organized matter is susceptible. He has shown that many species of infusoria exist which are so small that millions of them collected into one mass would not exceed the bulk of a grain of sand, and a thousand might swim side by side through the eye of a needle. The shells of these creatures are found to exist fossilized in the strata of the earth in quantities so great as almost to exceed the limits of credibility. By microscopic measurement it has been ascertained that in the slate found at Bilin, in Bohemia, which consists almost entirely of these shells, a cubic inch contains forty-one thousand millions; and as a cubic inch weighs two hundred and twenty grains, it follows that one hundred and eighty score millions of these shells must go to a grain, each of which would consequently weigh the 187,000,000th part of a grain. All these phenomena lead to the conclusion that these creatures must be supplied with an organization corresponding in beauty with those of the larger species.—*Lardner's Hand-Book of Natural Philosophy.*

WONDERFUL AND TRUE.

With a very near approach to truth, the human family inhabiting the earth has been estimated at 700,000,000; the annual loss by death is 18,000,000. Now, the weight of the animal matter of this immense body cast into the grave is no less than 624,400 tons, and by its decomposition produces 9,000,000,000,000 cubic feet of gaseous matter. The vegetable productions of the earth clear away from the atmosphere the gases thus generated, decomposing and assimilating them for their own increase. This cycle of changes has been going on ever since man became an occupier of the earth. He feeds on the lower animals and on

the seeds of plants, which in due time, become part of himself. The lower animals feed upon the herbs and grasses, which, in their turn, become the animal; then, by its death, again pass into the atmosphere, and are ready once more to be assimilated by plants, the earthy or bony substance alone remaining where it is deposited; and not even these, unless sufficiently deep in the soil, to be out of the absorbent reach of the roots of plants and trees. Nothing appears to me so cannibalising as to see a flock of sheep grazing in a country churchyard, knowing it to be an undeniable fact that the grass they eat has been nurtured by the gaseous emanations from my immediate predecessors; then following up the fact that this said grass is actually assimilated by the animal, and becomes mutton, whereof, I may, perhaps, dine next week. "Truth is stranger than fiction," and here is a truth that exemplifies the proverb. It is not at all difficult to prove that the elements of which the living bodies of the present generation are composed, have passed through millions of mutations, and formed parts of all kinds of animal and vegetable bodies, in accordance with the unerring law of nature and consequently we may say with truth that fractions of the elements of our ancestors form portions of ourselves. Some of the particles of Cicero's or Æsop's body, peradventure, yield this pen. Thus saith the chemist; now listen to the words of the poet, "To what base uses may we return, Horatio!" Why may not imagination trace the noble dust of Alexander till he find it stopping a bung-hole? To follow him thither with modesty enough, and likelihood to lead it, as thus:—Alexander died—Alexander was buried—Alexander returneth into dust—the dust is earth—of earth we make loam, and why of that loam, whereto he was converted, might they not stop a beer barrel?

"Imperial Cæsar, dead, and turned to clay,
Might stop a hole to keep the wind away;
Oh, that that earth, which kept the world in awe,
Should patch a wall to expel the winter's flaw!"

SIR ROBERT GILLESPIE'S HORSE.—The General possessed a horse which has become almost historical. This was a favorite black charger, bred at the Cape of Good Hope and carried with him to India. When the noble soldier fell at the storming of Kalunga, this charger was put up for sale, and after great competition, was knocked down to the privates of the 8th Dragoons, who actually contributed their prize money to the amount of £500, to retain this memorial of their beloved commander. This beautiful charger was always led at the head of the regiment on a march, and at the station of Cawnpore, took his ancient post at the colour stand, where the salute of passing squadrons was given at drill, and on reviews. When the regiment was ordered home, the funds of the privates running low, he was bought by a gentleman, who provided funds and a padlock for him, where he might pass the remainder of his days in comfort; but when the corps had departed, and the sound of the trumpet was heard no more, the gallant steed pined away, refused his food, and on the first opportunity, being led out for exercise, he broke from his groom, galloped to his ancient station on parade, neighed loudly again and again, and there, on the spot where he had so often borne his master, he dropped down and died.—*Bentley's Miscellany.*

TRAVERSING THE EARTH.—The circumference of the earth measures 25,000 miles: if it were begun with an iron railway, a train carrying 240 passengers would be drawn round it by the combustion of thirty tons of coke, and the circuit would be accomplished in five weeks.—*Lardner on the Steam Engine.*

THE WEATHER, CROPS MARKETS, &c.

The past month has been distinguished for dryness, with sudden changes of temperature, although in some parts of the Province copious showers have fallen. The wheat upon the whole is looking well, though there are some situations, particularly in the back townships, where it has greatly suffered from the effects of the late severe and protracted winter. Spring grain and hay will probably prove light, but warm growing showers may yet do much for the former, and while we are writing, atmospherical influences are decidedly more favourable. Our exchanges speak favourably of the crops in the United States, and the last accounts from Great Britain, and several parts of the European continent, are of an encouraging character. Abundance and cheapness are therefore likely to continue in the ascendant; that is, of course, if the will of Providence, be pleased to ordain it. It is now confidently asserted and believed by all parties, that the new British ministry will not attempt any re-imposition of a duty on corn. The prospect for fruit is, in some respects good, apples will probably prove abundant, but most kinds of stone-fruit are greatly afflicted by the Curculio, whose devastations appear yearly to increase, and the fruit buds of the peach, in many situations, have been injured, or rather completely destroyed, by the severity of last winter. We get similar accounts from most of the fruit-growing districts of the States. The grain markets in England continue much the same as for some time past; and but little change has to be noted in reference to our own. Another month will enable us to speak with more confidence of the probable result of the growing crops.

Letters



Patent.

TIME & LABOR SAVED ARE MONEY EARNED!

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