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THE
BRITISH AMERICAN
CULTIVATOR.

W. G. EDMUNDSON, EDITOR AND PROPRIETOR.

VOLUME II.

TORONTO:
PRINTED AT THE BANNER OFFICE, 142, KING STREET.
1843.

CONTENTS.

	PAGE.		PAGE.		PAGE.
Chapter on Improvements	29	Cheese making	101	Hemp, culture of	135
Comparative scale of duties in the	137	Cheese, complete direction	138 & 189	Hemp and flax culture	50
British markets	137	Cheese, reports on different modes of	10	Hemp culture and dairy business	78
Advice to young men	175	making	16	Home education of daughters	157
Advice to farmers	66	Cisterns, modes of building	118	Home District cattle show	69
Advice on the management of tools	71	Chemical preparations by Dr. Playfair	11	Home District cattle show	116
Advantages of scientific farming	182	Chfology of improvements	95	Hops	135
A good cow	4	Clean cellars	67	How to be rich	142
Agricultural report for January	35	Coffee, mode of making	58	How to make money	155
Agricultural report for March	53	Comparative value of fodder	95	Horses, general management of	19
Agricultural report for April	57	Corn stalk sugar	126	Hints to farmers	157
Agricultural protection	72	Corn stalk sugar and molasses	1	Hints to young ladies	87
Agricultural protection	152	Colliers	106	Hints to young farmers	187
Agricultural chemistry	154	Comparative advantages of farming	147	Illinois, price of produce	4
Agricultural education	63	Comparative advantages of hay, vegeta-	161	Improvements in agriculture in Britain	124
Agricultural experiments	46	tables and corn	174	Improvement of sandy land	144
Agricultural statistics	181	Consumption of Great Britain and Ireland	124	Improved directions to make cider, perry	144
Agricultural Society, York township	181	Consumption of food in London	42, 43, 54	and wines	144
Agricultural Socy; Scarborough township	181	Correspondence, original	124	Important inventions	148
Agricultural protection	162	Cure for salivation	90	Independence of the farmer	187
Agricultural Clubs	114	Criterion for judging stock	153	Instructions for packing beef, &c.,	183
Agriculture in Nova Scotia	162	Cranberries	77	Importance of draining	183
Agriculture, what it is, &c.,	26	Cut feed	184	Large yield of wheat	148
Alternate crops of potatoes and wheat	170	Canada Agricultural Association	185	Letters from the shores of the Baltic	5
A looking glass	159	Canadian horse	188	Lice on cattle	75
A farmer penny wise, and farmer pound	106	Cape of Good Hope wheat	181	Lime, application of	116
wise	104	Domestic manufactures	117	Large crops	179
Analysis of Indian corn	104	Dantzic wheat	165	Lime and salt as fertilisers	69
An improved churn	179	Deep ploughing	163	Literary institution, Western District	34
Anti-corn-law league	180	District Boards of Agriculture	31	Liquid manures	166
An important movement	185	Distemper in dogs	45	Lard oil	25, 26
An important arrangement	10	Durham cattle	46	Management of fowls in cold weather	6
Animal chemistry	120	Duties of farmers	8	Management of the dung heap	58
Ammonia	122	Education, letters on, by W. Evans,	22, 23, 38	Management of cattle	182
Amateur farming	167	Esq.	179	Management of calves	58
Ashes as a fertiliser	167	Education, letters on, by do.	143	Man's ingratitude	175
Ashes, leached	57	Education	172	Manures	149
Asparagus	166	Economy,	7	Manures, accumulation of	149
Attention to cattle in winter	174	Emigration,	177	Making vinegar	75
A word for the boys	188	Experiments on seed wheat	186	Mildew on gooseberries	121
A large pear	117	Extraordinary sample of wheat	123	Milk	147
August, the weather and prospects	130	Early rising	61	Milking cows	7
Autumn ploughing	75	Farm accounts and labour book	91	Necessity of a change of crops	71
Bacon, to preserve from flies	39	Farming, its pleasures and profits	11	New sources of wealth for husbandmen	134
Bees	107	Farming Clubs	39	New grain fork	141
Bees, winter management	95	Female nobility	84	Newmarket agricultural exhibitions	141
Bees, multiplying and equalising hives	174	Feeding cattle	62	Niagara District Agricultural Society	182
Bees house, Beards improved	85	Flax	154	Normal schools	34
Belgian husbandry	32	Flax culture	158	Normal schools	41
Beef, milk, butter and cheese	177	Flax, culture of	34	Occupations	58
Berkshire hogs	110	Flax, culture of	176	On clearing land	164
British American Cultivator	56	Flax, culture of	124	On politeness	171
Blacksmiths work	88	Flax, culture of	77	Of the management of milk and cream	108
Boards of Agriculture	105	Flax, culture of	6	Orcharding	47
Boards of Agriculture	16	Flax, culture of	124	Oxford sausages	90
Boards of Agriculture	83	Flax, culture of	77	Pages portable saw mills	2
Brock District cattle show	151	Flax, culture of	60	Pages portable saw mills	19
Breaking colts	124	Flax, culture of	71	Pages portable saw mills	87
Broom corn	124	Flax, culture of	71	Ploughing match	95
Butter, interesting experiments in making	39	Flax, culture of	111	Ploughing	82
Butter, table	61	Flax, culture of	12	Potatoes, cultivation of	44
Burns, a cure for	82	Flax, culture of	173	Potatoes, planting	30
Care of animals	120	Flax, culture of	12	Poultry	70
Canadian thistles	1	Flax, culture of	11	Plums	75
Canadian tariff	15	Flax, culture of	40	Poll evil	103
Candies, improvement in making	95	Flax, culture of	25	Preparation of seed wheat	109
Cabbages	31	Flax, culture of	51	Preparation of seed wheat	153
Cause of and cure for hard times	31	Flax, culture of	81	Proper disposition of farming capital	85
Castle building in the air	31	Flax, culture of	155	Proper period for cutting wheat	147
Castering male quadrupeds	31	Flax, culture of	143	Praises of a rural life, a poem	122
Cement to mend china or glass	67	Flax, culture of	143	Principles of vegetation and tillage	155
Charcoal, nutritive qualities of	31	Flax, culture of	143	Preparation of hams and bacon for the	34
Cheese	31	Flax, culture of	143	British markets	34

CONTENTS.

	PAGE.		PAGE.		PAGE.
Present state of Agriculture in Canada	178	Stall-feeding	24	Things worth knowing	128
Preparation of light soil	31	Steaming potatoes	17	Things that have been seen	159
Prognostics of the weather	47	Substitute for glass in hot-beds	183	Timber, the proper time for cutting	83
Pruning fruit trees	71	Strawberry, culture	61	Time of applying manures	76
Preserving eggs	183	Stump machines	169	To wash woollen goods	31
Provincial Board of Agriculture	163	Sunflower seed	106	To preserve pears	178
Pulmonary consumption	86	Summer fallows	98	To preserve quinces	173
Reasons why farmers are not factious	4	Surface water	63	To prevent the decay of wood	110
Qualifications of farmers' wives	186	Subsoiling	150	To make permanent marking ink	90
Rearing chickens	74	Subsoil ploughing	34	Tomatoes	151
Receipt for making cloth water-proof	72	Smut in wheat	127	Treatment of infants	60
Remedies for cattle	111	Suggestions to parents	158	Tropical climate	7
Remedies for scab in sheep	155	Small and large farms	50	Turning under green crops	15
Religious education	160	Sir Robert Peel's speech at Litchfield cattle show	163	Turnip culture	59
Roap walks	7	Siberian wheat	127	Transplanting fruit trees	140
Rose water	94	The wheelbarrow	85	Unburnt brick houses	21
Rhles of conduct	158	The weather and the wheat crops	73	Unburnt brick houses	40
Rules for improvement in breeding stock	169	The Hessian fly	100	Useful receipts	76
Rules worth being observed	50	The milk cellar	107	Useful receipts	119
Russian stoves	18	The farmer's life, a poem	119	Vermin on vines	108
Saltpetre in meat	7	The farmer, his sons and daughters	186	Valuable agricultural report	127
Salting horses	75	The provision trade with England	156	Warts on horses and cattle	9
September, prospects	129	The farmer's remedy for hard times	175	Western competition	45
Sheep husbandry	140	The benefits of industry	173	Weight of oxen	21
Sick headache, cure of	106	The farmer's hall, a poem	170	Wheat culture, preventive of rust	18
Soap-making	106	The mechanic's Saturday night	166	Wheat, mode of selecting seed	71
Soap-suds on cabbages	93	The anti-corn-law League	179	Wheat, species of	104
Spaying	74	The turnip fly	179	Wheat, general remarks on cultivation	104
Sowing Indian corn, broadcast	51	The Canadian tariff	146	Work for April	52
Sources of happiness	75	The coming harvest	100	Wool	32
Stacking grain	27	Things a farmer ought not to do	111	Winter	30
Standard of weights and measures	24			Yeast, mode of making	81

J. Brown

88

THE BRITISH AMERICAN



CULTIVATOR.

"AGRICULTURE NOT ONLY GIVES RICHES TO A NATION, BUT THE ONLY RICHES SHE CAN CALL HER OWN."—*Dr. Johnson.*

VOL. 2.

TORONTO, JANUARY, 1843.

No. 1.

At the commencement of the New Year, we beg to offer our congratulations to our Subscribers, and to assure them of our most sincere wishes that health, happiness, and prosperity may be enjoyed by them in full measure and running over, throughout the present, and very many succeeding years. It is impossible for us to know what the present year shall bring forth to each of us, but of this we may be assured, that if each of us endeavour to do our duty properly, we may confidently rely upon the Almighty Ruler of the universe, that all events that shall happen to us will be for the better, and enable us to produce our happiness, either in this life or the next, and perhaps, to a certain extent, in both. With good intentions, upright conduct, and humble reliance on the goodness of God, we may dare to expect as many blessings in the year now commencing, as we have obtained in any former one, and more than this it might be unreasonable for us to expect, in our present state of existence and trial.

In this our first Number for the year 1843, we beg leave to appeal to our agricultural friends and solicit their support. During the past year our exertions as editor, may not have given perfect satisfaction to our Subscribers, and for this we might offer a reasonable excuse, but we forbear, and hope that in future we shall be more successful. It is our earnest desire, by our humble efforts, to conduce to the improvement and prosperity of agriculture, and our Subscribers may be assured that our efforts shall be unceasing. It may not be in our power to effect so much good as would be expected from us, and our manner of attempting it may not be approved of; but these are objections which we fear we cannot well remedy. One thing we are certain would assist us and greatly increase our confidence, and that is—the unanimous support

of agriculturists, and of all who are friends to agriculture. We certainly cannot entertain a very flattering opinion of our exertions to promote the object we profess to have in view, if this Periodical is not considered worth the small charge of *Five Shillings* annually to a farmer, or the friend of farmers. During the past year, we thought it necessary to occupy considerable space in advocating agricultural protection, because we deemed it useless to produce largely, and well, if a market could not be had for the produce at moderate, but remunerating prices. It may be expedient to confine to a debate on this subject, that is of so much consequence to the vast majority of the Canadian community. It is right, we presume, that our Representatives, if they are ignorant of our wants and wishes, should be made perfectly acquainted with what they are, and it will be for agriculturists to judge hereafter what attention they will have given to their affairs. We do not ask for, or expect any thing that is unreasonable, neither shall we be satisfied if our interests are not decidedly provided for by those who represent the agricultural class. Other classes of this community will discover, we believe, that they cannot be permanently prosperous, while agriculture is in a depressed and unprosperous state. We are firmly persuaded, that protected and encouraged as agriculture ought to be, in a country encircled as this is, it might be in a prosperous condition. Let measures be adopted to protect, encourage, and instruct, and if it fails to produce prosperity in our agriculture, we shall then admit we have been in error with regard to the capabilities of the country, but not until all that is necessary and expedient is first tried and has failed. In England, the first of agricultural countries, they are now adopting every possible means of instruction and encouragement to effect the improvement of agriculture. Here, on the contrary, where instruction and improve-

ment is so much required, agriculture is left altogether to itself, to advance or retrograde as it may happen. In the forthcoming Session of the Provincial Parliament, we hope the subject will, at last, receive some consideration. If it is found upon a full investigation of its present state, that it would not be expedient to adopt any measures in reference to it, we must only submit, and wait with patience for a coming period that we may have in our power to make more favourable for us. We recommend this matter to the most serious attention of our Subscribers who, we suppose, are all agriculturists, or the friends and supporters of agriculture.

COUNTRIES.—Dr. Walsh has thus described two of the less common harbingers of cholera, and fire-damp, those ministers of death, whose approach is frequently as insidious as it is destructive:—"At one time, an odour of the most fragrant kind is diffused through the mine, resembling scent of the sweetest flowers; and while the miner is inhaling the balmy gale, he is suddenly struck down and expires in the midst of his fancied enjoyment; at another, it comes in the form of a globe of fair glassed in a filmy case; and while he is gazing on the light and beautiful object floating along, and is tempted to take it in his hand, it suddenly explodes, and destroys him and his companions in an instant."
History of Fossil Fuels.

IMPROVEMENT IN MAKING CANDLES.—The editor of an exchange paper says, that by making the wicks of candles about half the common size, and then wetting them with spirits of turpentine and then drying them again in the sunshine before moulding or dipping, they will last longer and make clearer light than when made in the ordinary way.

He that is contented is rich indeed.

We copy the following from *The American Farmer*, published at Baltimore, which will give our readers some idea of the distress in the "Fa West." The Illinois fever raged very high throughout a portion of the inhabitants of this Province only a few years since, and some hundreds of families actually sold their property at a very great sacrifice, in order to obtain a portion of the "promised land."

We have heard from many of those persons since, and they invariably express that their "cup of sorrow" is full, and would anxiously return (if they could do so with credit), to the associations of their friends and relatives, and to all that was near and dear to them in their boyhood. We have no doubt as to the correctness of the statement below; as we have seen nearly the same corroborated in almost every American paper that we take. We consider, however, that the item of straw is comparatively worth nothing. At the most it is not worth more than \$1. per ton, which would leave the Illinois wheat-grower fifty per cent. out of pocket at the year's end.

"PRICE OF PRODUCE IN ILLINOIS.—We take the following extract from a letter to the editors of *The Washington Globe*, which was published in that paper a few days since. The picture which it draws of agricultural distress in Illinois is truly appalling, and should serve to reconcile the people of the old states to their condition, however hard and adverse that may now be; for of a truth, if they will study their own interests, and consult the comforts and conveniences of themselves and families, they will find that the day for bettering their conditions, by removal to the West, is for the present, at an end. And surely if they will reflect upon the facts developed in the extract below, they will agree with us, that the inducements to emigrate westward, are not such as to justify a man in breaking asunder the associations of friends, relatives, and home, to seek now once in a region where the products of an acre of ground, devoted to the most profitable culture, will bring at home but four dollars, and but six and two-fifths dollars after all the expense and trouble of waggoning it 140 miles. Well may the writer exclaim when making known these facts to the editors of the *Globe*—"you have no idea of the poverty of the farmers of Illinois!" for no one, who was not familiar with the true state of things in that region, could have anticipated any thing like the sad reality which the writer has disclosed. Let us look at this picture as it stands before our eyes, and endeavour to make something like a computation of the profit arising to the grower of the wheat.

"In the calculation of relative profit or loss, which we are about to make, we can only promise the desire to arrive at the truth, because, in the absence of positive data with regard to the expense of culture, harvesting, thrashing, cleaning, and conveying to market, we have to assume the cost of each particular item, and it is, therefore, impossible to arrive at any thing more than an approximation to these several expenses. In assuming them, however, we shall endeavour to be considerably under what they would be with us. We will presume, in the first place, that an acre of land after being cleaned and improved, is, together with its first cost, worth \$10; that the ploughing it cost \$1—this is one hundred per cent. less than we have paid for the same service, having repeatedly paid \$2—seed wheat, say 1½ bushels at 40 cents, 60 cents; seeding, ploughing and harrowing, \$1; harrowing, \$1; thrashing and cleaning 16 bushels, the product of the Illinois acre, at 10 cents per bushel, \$1.60 cents; proportioned part of the expense of transporting 20 bushels to market, requiring one man, two horses, and a waggon two weeks, which at \$16 per month, would be \$6.40 cents. These charges we are sure are low. Against them we have 15 bushels of wheat and probably one ton of straw. The price of the wheat we will set down at what it sold for in Chicago, as per statement, and allow \$5 for the

ton of straw, a price much greater, we should think, than can be obtained for it where grown, if we are to judge of its value by that of the grain.

"With such an exhibit before him, we think the man who may have been born in the old states, who can live at all where he is, should pause before he breaks up those ties to which we have before alluded, to go in search of the land of 'milk and honey,' which may, after all, prove as delusive to him as it has proved to thousands of others, who have gone before him, buoyant of hopes, and realized for their golden anticipations of riches, a bountiful crop of disappointment. How much better would it be for us all, to become reconciled with our altered circumstances, return thanks to God that things are not worse, resolutely resolve to stem the adverse current until it shall have spent its anger, and by a strict observance of economy, arm ourselves to meet the exigency of the times—we say how much better would it be for us to act thus, than to turn our backs upon the haunts and associations of our youth—to quit the comforts and enjoyments of present homes, to find discomfort, privations, vexations, and disappointment in a distant and far-off land.

"This is the paragraph upon which we have been commenting, and we ask you to read it attentively:—

"RIDGE-FARM, Vermillion Co.,
Illinois, Nov'r. 14th, 1842. }

"Our most profitable business is raising wheat, which we carry in waggons one hundred and forty miles to Chicago, and there sell it for forty cents per bushel. A good two-horse team will draw twenty bushels and feed for the journey, and thus we go to market; camp out, and cook our own food. A load will bring eight dollars; we make a trip in two weeks. 'Truly you have a hard row to hoe, you will say; 'why don't you sell your wheat nearer home?' Alow me to tell you, that you could not cash a bushel of wheat in Vermillion county for twenty-five cents; so that, to raise two dollars, it would require eight bushels of wheat—the product of half an acre, and a week's labour; or, to raise that sum from pork, you must sell two hundred pounds."

PAGE'S PORTABLE SAW MILL.

We mentioned, in our last, that we had written to Mr. PAGE, through the editor of *The American Farmer*, Baltimore, for further information on this important and invaluable labour-saving machine, and have since been favoured with a letter from the editor of the *American Farmer*, accompanied with a pamphlet containing a full specification of the Portable Saw and Grist Mills, besides a variety of other machines mentioned of decided merit, which might be brought into advantageous use in this Province. His Morticing and Tenoning Machines would, no doubt, be found an acquisition to Carpenters.

As we mentioned in our last, we have offered our services to Mr. Page as an Agent, to sell his machines to parties who may feel disposed to purchase in this Province; and lose no time in giving them all the information in our power. We feel satisfied that they are no humbug, as they have been favourably mentioned in almost every paper we receive from the South. We give the following extracts from two respectable journals to show the correctness of our statement:—

"Page's Portable Saw Mill is certainly one of the greatest achievements in mechanics of which the present age can boast. Besides the rapidity and exactness with which it does its work, its truly portable size, increases its value greatly, as it can be removed with ease by a common team, and made to follow the supply of timber, thus saving all the trouble and expense of transportation."—*American Farmer*.

"Page's Portable Steam Saw Mill—the first of the kind we ever saw—attracted much attention. It seemed to perform its functions quite intelligently—certainly with more regularity and exactness than some creatures of volition than we have seen. By the watch, we thought it was giving about five feet of plank per minute, from very solid timber—perhaps more, perhaps less. It certainly must be a very valuable machine in sections where water facilities are scarce."—*Democratic Record*.

The following extracts are from Mr. Page's Pamphlet:—

"PAGE'S PORTABLE SAW MILL.—To this hitherto powerful machine, I have recently made additions of such intrinsic value as to entitle them to be emphatically called improvements. They consist of machinery for the cross-cutting and splitting of cord and other wood, which they will do with a rapidity as astonishing as beneficial. This Saw Mill is intended to be propelled by horse power. I state this explicitly, because it has been often confounded, in the public mind, with my Portable Steam Saw Mill.

The cost of one of these Portable Saw Mills, to be worked by horse power, for sawing lumber 12 feet long, including a 4 feet saw and largest sized horse power, is \$500. For all lengths over 12 feet, which it may be desirable to cut the lumber, \$2½ per foot extra will be charged.—Band \$10.

Extra Carriage for cutting cord wood, \$50.
Prices of extra Saws, according to their respective diameters, viz.: 3 feet Saw, \$23; 33 inch do. \$27; 40 inch, do. \$33; 42 inch do. \$40; 44 inch do. \$48; 46 inch do. \$57; 48 inch do. \$67; 12 inch do. \$2.85; 16 inch do. \$4.40; 20 inch do. \$6.40; 24 inch do. \$8.60; 28 inch do. \$12; 32 inch do. \$16.50.

All extra head blocks, \$10 a piece, or \$20 per pair.

Long Rollers for scantling, \$7 per pair.
Upright Guide Roller, for long plank, \$17.55.
Waggon body to put horse power on, (which either for transportation or being worked on, renders it more permanent and less difficult to adjust), \$10.

This Saw Mill is, what its name imports it to be, a portable machine, in every sense of the term, as it can be removed, in a common waggon, drawn by 3, 4, or 6 horses, oxen, or mules, from one part of the woods to the other, or wherever else its services may be required, and put in operation again without delay or difficulty, thereby saving the heavy, tedious, and difficult operation of transporting large logs. It is, owing to the strength of its construction, not easy to get out of order, and its great simplicity places its repair within the ability of any country carpenter, or smith of ordinary capacity. To say that such a machine would prove an invaluable acquisition to any gentleman owning timber lands convenient to market, is not to claim for it more than it deserves. With a view of giving to the reader an idea of its intrinsic value, the inventor will state a few facts connected with its successful operations, and he may here observe, that it has succeeded wherever it has been tried. Though this machine is intended to be worked by horse power, it is equally applicable to any other motive power; whether of steam or water, as the following facts and certificates will show.

With a four horse power, it has cut from 1,000 to 1,500 feet of plank a day; with a six horse power, it has cut daily from 1,800 to 2,000 feet in the same time. Six horses have raved off yellow pine boards, 2,800 feet in one day, and have sawed, by pushing, 1,200 feet in one hour, as will be seen by the certificates of the men who have tended the mill. John S. Selby, Esqr., of Anne Arundel County, Md., whose one has been set up, propelled by steam, equal to the power of ten horses, connected with which there is one of my Patent Grist Mills, with a consumption of only ¼ of a cord of wood, cut in one day 10,000 feet of lumber, and ground 75 bushels of meal. I have sold within the present year 45 of these machines, and it gives me pleasure to know, that their performances have more than justified every anticipation I had formed of their intrinsic value. To show their durability, I will state a single fact connected with one of those I have sold—it speaks volumes in its favour. I have learned from the purchaser, that from May to October,

a period of five months, he had cut with it 200,000 feet of lumber with four horses, and that it had not got materially out of repair.

TO THE PUBLIC.—Frequent inquiries having been made of the amount of work done by Page's Portable Saw Mill, and also of its portability—liability to get out of repair—the number of horses required to work it, and remove it—the cost of the mill with, or without the horse power—the number of hands requisite to work it—weight of the Mill, &c., &c.

We hereby certify that we have worked one of Page's Portable Saw Mills, from the 24th of April, 1841, until the present, November 23rd, and have sawed in that time, 200,000 feet of boards. We moved the first mill from the Victory turnpike, a distance of thirteen miles in one day, and it was sawing boards by ten o'clock the next day.

We have also put in operation four other mills, which would be equal to removing one mill five or six different times, taking into consideration the rainy weather, and not having the mill under cover. We are certain that we have not been in operation more than four months, and have at no time used more than six horses, and the greater part of the time not more than four; we have cut as high as 2,800 feet of plank per day; and have, by pushing the horses, cut 1,200 feet in one hour. The weight of the machine is not more than thirty hundred pounds; one team and a carry-all have removed one several miles. The cost of the machine varies according to its length—most of the bills for horse power included, are as high as \$450. The mill to cut 12 feet long, is \$300. The horse power is \$150. Extra Saws according to their size.

JAMES T. BURNEY, JNR.
OLIVER R. BISHOP,
ELISHA MELTON,
G. B. TAYLOR,
C. A. SHARP.

To George Page, Esquire,

DEAR SIR,—I have had affixed to a water power, which I own in the county of Albemarle, Va., one of your Patent Portable Circular Saws, and now, with pleasure, bear testimony to its astonishing powers. The Saw whilst cutting, and under some disadvantages of fixtures, cut through a log twelve and a half feet long, and one thick, *in half a minute!* This fact I know will be doubted, except by those who have witnessed and will attest to the truth of what I state. The invention is surely one of immense value to the world, and I trust it may be of eminent to yourself. You are at liberty to use this communication in any way you may desire.

Your obedient servant,

Wm. F. GORDON,

Albemarle, December 9th, 1843.

(To be Continued.)

Any inquiries on the subject (post-paid), will be answered without delay, by the Publisher of *The British American Cultivator*, Toronto.

LETTERS FROM THE SHORES OF THE BALTIC.

From a very interesting work, lately published, we make the following selections, which will give some idea of winter travelling in Russia. The writer describes it thus:—

"Just as my foot was descending very nimbly into the sledge, I felt myself pulled back by my tender hostess, who, beneath the wools and furs of our outer habiliments, had espied a most unguarded satin shoe and silk stocking. I was hurried back again into the warm hall, where, before I well knew what they were about, my feet were in the firm grasp of two buxom, smiling Es-oman hand-maidens, the one pulling on a red worsted sock, the other a fur boot. This necessary preamble finished, for the thermometer stood at 5° of Fahrenheit, we seated ourselves, or rather sank into the bed of down, with which the seat and floor of the sledge were

spread, when the men-servants and maid-servants crowded jealously round the smooth and fold our cloaks firm about us; which done, several large loose down cushions were tumbled in, and tucked over our knees, and down into every spare corner—a bear skin drawn firm over all—and the leather finally hooked tight above. And now the coachman, a bearded Russian, with bare neck, and grey cloth coat of home-sown wool well stuffed beneath with a warm sheep skin, and indented at the ample waist with a belt of bright colours, threw one last look behind him to ascertain that his ladies were in their right places—bless him! we could not have stirred—and a man-servant in a ponderous cloak having mounted beside him, now gathering his round braided reins in a whole handful together, and set off the four eager horses galloping abreast like the steeds in a Roman car. These sledges may be best understood as a slight brouche, put upon soles instead of wheels, with long transverse poles to prevent them from overturning, and stretchers of leather like extended wings in front to screen the traveller from the showers of snow which fly from the horses hoofs. It must not be supposed that sleighing is here such smooth gliding work as it is generally represented, on the contrary, a succession of drifts, worn into deeper declivities and higher ascents by the continual traffic, will subject you to a bumping kind of movement, which, in spite of your solid feather-bed casing, is neither convenient or agreeable. Then suddenly the sledge declines a fathom deep on one side, and out flings the coachman's or footman's leg to act as an additional prop, and you lie comfortably cradled upon your half-suffocated companion, when with a loud jingle of all four horses, the sledge is jerked out of the hole, and the travellers once more stuck upright. And then, perhaps, when the track becomes narrower, the outer horses are driven into the loose deep snow, and one of them tumbles over head and ears into an invisible ditch, whence, his long traces giving him perfect liberty, he clambers out again unassisted, shakes the snow from his sides, and snorts and stamps with the utmost impatience to be off again. The two centre, or pole-horses, are fastened higher, and the middle of the track being always the best, the most spirited of the horses are generally placed here, while the side-horses take the lool of the road, jumping over loose drifts, or picking their way over any roadside encumbrance, and, with their graceful necks and gleaming eyes at full liberty, are never frightened and never at a loss to extricate themselves from any difficulty. Hedges and walls are the destruction of sledging roads; wherever there is a barrier, there the snow collects, and a line of battened fences, here the usual partition, will ruin the track—sunk ditches are the only mode of divisions advisable for snow countries. The intelligence of the coachman is no less surprising than that of the horses; regardless of the summer line of road, he steers straight over bank, river, and morass for his object, and like a bird of passage, seldom misses the mark. Thus it is that in the dull long season of winter, when friends are most wanted, they are here brought closest together; for the same morass which in summer is circumnavigated by a drive of twenty worts may in winter be crossed by one of half an hour's duration."

The same author in describing the cold of Russia, says:—"Returning from a drive in an open sledge the air struck us as most unbreathably cutting, and upon inspection the thermometer was found at 12° below Zero. Before night it fell to 25°, where it has since remained pretty stationary; while a sun, in a sky maliciously serene, shines

cloudless from morn till night, and then abdicates this snow landscape and frozen ocean, to a moon, soft, full, clear, and yellow, with not a breath of halo betwixt its bright edge, and the deep, blue sky.

It is remarkable that when the atmosphere without averages 10° Fahrenheit, a temperature of 64° in doors is ample for comfort; but when the outer cold sharpens to 20° below Zero, and downwards, not even a heat of 70° in the rooms will keep the person sufficiently warm. We walk nevertheless in moderation, and in order to spare servants and horses, who at such seasons are great sufferers for the pleasure of their employers, abstain as much as possible from evening amusements. These are most unsocial expeditions, for no more air is admitted to the face than is necessary for the tightened respiration, and more light to the eyes than to guide you on your way; while in the walking bear or wolf who stalks past you, the roof of his fur cap meeting the fence of his fur collar, and nothing visible of the 'human face divine' but the sharp end of a very red nose, no one would recognize their nearest relative. No rude wind, however, is to be apprehended on such occasions, for intense cold is here accompanied by perfect stillness of the air. Difficult as it may be to promote circulation under ordinary movement in such an atmosphere, there is nevertheless, a peculiar pleasure in braving its utmost pinch—in sallying out behind a barricade of furs and hearing the snow crisp and creak beneath your footsteps, with the comfortable conviction that where neither warmth or wet exists, neither dirt or corruption can assail the senses."

The cold in Canada might be very accurately described in the same terms. The climate of Russia is very similar to that of Canada, except that the winter is somewhat longer in the former country. There is also a similarity in the soil, plants, hot summers, and rapid vegetation. We shall give some further selections from this work.

We have seen a report in an English paper, of a farmer having expended £1,800, in two years, in draining 500 acres of land, held on a 19 years lease, and in expectation of being amply remunerated for the outlay, 33 per cent. of the proceeds of this farm was appropriated for rent; 47 for expenses of working, &c., and 20 for profit, and interest of capital in stock, implements, &c. What is appropriated to rent in England, may be appropriated in Canada to the interest of capital invested in the purchase of land, and in its improvement, &c. The proportion of the proceeds that is required for expenses, &c., will depend upon the mode of cultivation that is adopted, and the proceeds is likely to be increased or diminished as the mode of cultivation is judicious or otherwise. The profits, under present circumstances will, we fear, bear a very small proportion to the other items chargeable on the gross produce.

WOOD PAYMENT.—The first wood pavement that was put down in London, at the east end of Oxford-street, four years since, is now being reversed and relaid, and causes much surprise by its great durability, many of the blocks not being reduced half an inch of their original length, which was one foot, though exposed to all the traffic of Oxford-street.—*Eng. pap.*

The efforts making in the British Isles at the present time for the improvement of agriculture are very great; and we perceive that the principal improvement recommended as necessary before all others, is thorough draining. No land can be fit for cultivation that is wet, nor will manure be beneficial to such land, therefore sufficient draining must be essential. From the very depressed state of our agriculture at present, in consequence of the low price of produce, we know that farmers have not the means generally to expend much labour in draining or improvements. It would, however, be more profitable not to cultivate any land that cannot be thoroughly drained, because labour and seed is only thrown away on land that is not sufficiently dry. In Yorkshire, England, they have proposed a "Land-Draining Association," to have a capital of £500,000, in 20,000 shares of £25 each. The authority under which the association is proposed to be established, is based upon an Act passed in the Session of 1839-40. The principal object of the association, as set forth in the prospectus, is:—"To provide the requisite amount for either owner or occupier, or the two conjointly, to thoroughly drain their land, repaying the same with interest, by half yearly instalments, during a series of years to be fixed, either by an agreed rate per cent., or by a certain charge per acre to be determined by competent parties, in proportion to the benefit the land has derived from the work; and which work shall in all cases be done under the direction of the association." In reference to this association, the *Lords Intelligencer*, observes:—"The adoption of the joint stock principle of raising capital for agricultural purposes may be, we conceive, one of the most beneficial applications of that principle that has ever been proposed; there being some known methods of improving the land, and making it permanently more productive than it now is, which are manifestly impracticable to most agriculturists, simply from the great outlay required in the first instance, and the comparatively slow returns of the benefits. These, however, though more tardy than the profits of trade and manufactures, are more certain. And while they must eventually repay the cost to the adventurer, with interest, they will become a national boon, by increasing the productiveness of the soil. This applies especially to the question of thorough draining." The great want of capital that is generally felt in this country, will be sure to retard the progress of the most necessary improvements in agriculture, and we fear there is not any good prospect of a change for the better immediately.

In a paper submitted to the Royal English Agricultural Society, the 9th of November last, by an English farmer, on the "Criteria of Breeds in Prize Animals," the author observes:—"That if the society wish to encourage the improvement of distinct breeds of neat cattle, and sheep, no animal that does not clearly and purely belong to the distinct breed in which it is entered, should be allowed to compete." This gentleman appears to be of opinion, that most of the stock exhibited at cattle shows, are not of pure blood of distinct breeds. He recommends the society to establish a committee of competent individuals to erect a standard of character for every class of cattle and sheep which they intend to encourage, and who should exclude from the show every animal that does not show the breed intended. He further suggests that they should establish a standard of form, and every point ne-

cessary to constitute a perfect animal. The paper concludes in these words:—"I would also mention the necessity of confining prize animals to a system of feeding, for how frequently, after the natural appetite is appeased, are they literally crammed with stimulating drugs, to increase the desire for food, with which they are most extravagantly supplied, by which means many defects are concealed, and the natural size, form, and fattening qualities, unfairly presented." We do not think it would be expedient to be so particular with regard to pure blood, and distinct breeds, in Canada at present; but nevertheless, it would be proper, that all cattle exhibited at Cattle Shows, should have the breeds accurately described, whether pure or mixed, otherwise, how are we to judge of the merit of distinct breeds, or the true benefit obtained by crossing. We may know a perfect and profitable animal when we see it, but how are we to produce another like it, if we do not know the particular breed from which it has been raised, whether from pure blood, or by crossing.

In a late number of *The London Morning Herald*, the editor of that paper, observes:—"It is because domestic agriculture is the sheet anchor of our national prosperity and tranquility; it is because the agriculturists know that the cultivation of the soil is the foundation of our greatness; it is because that cultivation begets a continuous, regular, and permanent demand for the labour of man, and it is because the employment of such labour is favourable to deferential and sober habits, to humbleness of disposition, to simplicity of mind, to local and consequently national attachment, and to contentment, and thankfulness that the agriculturists do not exhibit the faction, the violence, and the agitation of the manufacturers." Here is a flattering, and we presume, a well merited compliment to agriculturists, and if it is so, their interests, in every country, deserves the first consideration of governments and legislatures. The article from which we have made the above selection, concludes in these words:—"Agricultural improvement, and increased production arising therefrom, are subjects of the highest national interest; there is a vast body of information afloat thereon, and many practical and useful suggestions are continually made: still agriculture in reference to the future, has been little discussed in Parliament, and much good might, we think, be accomplished by its submission to the consideration of parliamentary committees in the forthcoming Session, more particularly as to the best modes of establishing such a general system of drainage as shall promote cultivation, and, at the same time, improve the sanitary condition of the labouring classes." This is a suggestion that may be very properly offered to our Provincial Parliament previous to their forthcoming Session, and we trust that a committee will be appointed to inquire into the state of Canadian agriculture, and what means would be the most judicious to adopt, in order to promote its improvement, and secure its prosperity. No subject that will come under discussion in the approaching Session, is of any thing like the same importance to this country as that which we refer to.

There is nothing purer than honesty; nothing sweeter than charity; nothing warmer than love; nothing richer than wisdom; nothing brighter than virtue; and nothing more steadfast than faith. These united in one mind, form the purest, the sweetest, the warmest, the richest, the brightest, and the most steadfast happiness.

By the latest English papers, we perceive, that the price of neat cattle, sheep, and both fresh and salted meat, has fallen very greatly in the British Isles, and it is expected the fall in price will be still greater than it is at present. If the Tariff should continue unaltered, there is scarcely a doubt that prices will be low for agricultural produce, of every description, in the British Isles, unless in adverse seasons. If proper encouragement had been held out to the colonies of England, they would be able to supply her amply with all she might require of agricultural produce, and they would be in a condition to consume and pay for English manufactures in the same proportion. No reasonable prospect exists at present that foreign nations will increase their purchases of British manufactures. Every country are anxious to establish manufactures for themselves. They are forced to do this, because otherwise they could not maintain their constantly increasing population. It is impossible to prevent English skill and capital from being employed, where both will find most encouragement; and hence foreign nations can soon obtain all the advantages which they have in England, so far at least, as will enable them to commence manufactures, and acquire skill to work them. In our humble judgment, therefore, England will find in her own colonies, her best and most permanent customers, and it is her own subjects that should be encouraged. Every colony of Britain should be considered as provinces of the same Empire, and the inhabitants of these colonies be in the full enjoyment of all the privileges and protection that the inhabitants of the British Isles enjoy, both as regards agriculture and commerce.

AGRICULTURAL REPORT FOR CANADA EAST.

The winter may be said to have commenced about the last week of November, and since that time considerable snow has fallen, more than usual at this season of the year. We have no doubt, that on an average, there is from eighteen; to twenty-four inches of snow at present throughout Canada East, and in some sections of the country more than this. There is also passable ice bridges formed over the rivers and waters in many places, though the ice has not yet taken on the St. Lawrence near Montreal. Many are of opinion that we shall have a severe winter, and so far it has been severe; but whether it will continue so to the end, we do not pretend to conjecture. We would always prefer a good covering of snow upon the land, and a safe bridge of ice upon the waters, from the beginning of December to the beginning of April, or about four months. This, we conceive, would be most favourable for the country, and its inhabitants, for the farmer, and the merchant. Our forests of valuable timber would be useless to us here, unless we had snow and ice to enable us to carry them to the shipping places. Some may object to our severe winters, but without such winters Canada would not be so valuable a country for its present thin population. It is not the severity of our winters that will injure our agriculture. It certainly shortens the time for work in the fields, but there is, nevertheless, sufficient time to execute the work and raise good crops, by adopting a proper system, and executing the different work in the proper time, and not allow them to interfere with each other. The manner may be all brought to the fields in winter, when

it will be required in spring, and it put up properly in heaps, it will suffer less injury from the snow and thaw, than it would in most farm-yards. In very many farm-yards much of the best of the manure is washed away and lost to the farmer. If it were possible, the manure should be under cover in the yard, so as to prevent its being washed by heavy rain and snow water. When carted to the fields, where to be made use of in spring, what may be washed from the manure heap will remain in the field, and will not be lost. A large quantity of snow generally collects in a sheltered yard, and when a thaw comes there is so much water made that it must run off and carry away a large portion of the manure with it. Manure is of so much consequence to agriculture, that every means should be adopted to increase its quantity and preserve its qualities until applied to the soil. We never can increase the quantity of matter which constitutes our earth, but by changing the forms of this matter, we may cause the earth to produce what is more useful for man, than that which it would naturally produce. What we collect as manure, is derived from the earth in different forms, and the crops that are produced from its judicious application of this manure, returns again in some form to the earth. We have no power to create matter, but we have power to change the forms of that which is already created, so that it may be much more useful to man. By this means we can improve the texture of soils by mixing different earths, and by applying the manure collected from one soil to improve another. We cut down the forests of Canada, and caused the land upon which large trees grew, to yield corn and cattle for the use of man; but man, his corn, and his cattle return to the earth again which originally produced them. Doubtless, man, by judicious management, has in his power to increase greatly the produce of what is useful, but all this returns to its original earth in due time. The atmosphere is connected with the earth, and both have influence upon production—the atmosphere giving to plants what it has received from the earth, and from plants in different forms. Judicious cultivation will cause the earth and the atmosphere to yield to plants what is required for their perfect production. Man cannot create one new seed, plant, or animal that is not already in existence; but nevertheless, he possesses much power over all those to improve their form, and increase their quantity and usefulness. It is in effecting these purposes in the best manner, that the improvement of agriculture consists. We submit these observations in order to remind farmers that all the materials that are necessary for improvement are already in existence. What they require is the skill and the means to convert these materials, in the best manner, to the most useful purposes. We possess the soil, and it is from this soil alone the materials are to be obtained for its improvement and production, by the aid of the skill and labour of man. Hence it is, that land is the source of all the production and wealth of the world: but it can be obtained from it only by the skill and labour of man. The agriculture of a country cannot be in a healthy or prosperous condition, if the produce obtained from it will not remunerate the capital and labour expended in its judicious cultivation and management. Something

must be wrong when this is not the case; and it becomes the duty of our Government and Legislature, to inquire into the causes that prevent a fair remuneration to the Canadian farmer, if he does not obtain it under present circumstances. The earth was given to man, furnished with all the means of providing for his comfortable subsistence, and there is no part of the habitable globe that is not capable of affording this subsistence to the skill and industry of its inhabitants. Every part may not yield all that is necessary to man's comfort in the present state of society; but it will yield him a produce which he can exchange for what is necessary, and which another part produces. Thus it is with the inhabitants of Canada—the country does not produce every commodity necessary for their comfort and convenience; but under proper management and judicious employment of their capital and industry, it would be capable of furnishing the most ample means of providing for their comfort and convenience. These remarks may be thought unsuitable in an agricultural report, but we trust they may be useful at this time, that both our agriculture and commerce are so greatly depressed. If the propositions we advance be correct, we may safely attribute to our own mismanagement, and the misapplication of our capital and industry, the languishing state of our agriculture and commerce at present. It is our own firm persuasion that to these causes chiefly we owe the backward state of our agriculture, and the depressed state of our commerce. Capital has been employed in the encouragement of foreign industry, while our own was neglected, and capital has been lost in this way to foreigners. A large quantity of British goods has been imported, when there is no produce raised in the country to pay for them. This latter circumstance is the consequence of the total neglect of instruction and encouragement to the improvement of agriculture. Had the agriculture of Canada been in a healthy and prosperous state at present—which we maintain it might have been with judicious encouragement—a large surplus produce might have been raised, that would have relieved much of the embarrassments we now labour under. We stated, on a former occasion, that Eastern Canada had sustained a loss in wheat, by the ravages of the wheat-fly, within the last eight years, of over four million pounds currency, according to the closest estimate we could make. And though this ruinous loss was sustained, no measures were adopted either of inquiry or remedy. Agriculturists were left to get over this misfortune as they best might. It was of no consequence that wheat should have failed in Canada, while it could be procured in the United States. There was not any attempt made to encourage the people to direct their industry to the raising of any new produce, that would make up the loss of wheat to them, and the country. We now experience the results we might reasonably expect from all this. All our affairs must be deranged here, if the country do not produce what will pay for what we import. At present there is scarcely any part of the produce of Eastern Canada exported; and there is a large quantity of foreign agricultural produce consumed by the inhabitants of our cities and towns, in flour, butchers' meat, and the produce of the dairy. Under such circumstances, we could not expect any better state of things than we have. We have over three million acres of land in cultivation in Eastern Canada, with a population, perhaps, of 700,000. Of this population, at least, 600,000 are agricultural, and the

whole amount that is annually sold by them at present, in our cities and towns, we are confident, does not amount to six hundred thousand pounds currency. Out of this amount a part is paid by agriculturists for foreign flour. We may judge from this what is the state of agricultural prosperity, and the degree of encouragement offered for its improvement. We submit these observations to the consideration of agriculturists, and all others who wish the prosperity of their country. We have no other view in offering them, but a sincere desire to promote the general prosperity of the land of our adoption.

At this season farmers are chiefly occupied with the care of stock, and the sale of sparrow produce. We are sorry that we cannot hold out any hope that prices will improve this winter. They are certainly very low at this moment for every description of produce. We need not state the price of wheat, as there is very little of that to sell. Barley, 2s. 3l. to 2s. 6d.; Oats, 19l. to 1s. 3l.; Peas, 1s. 8d. to 2s. 6d.; Buckwheat, 2s.; Potatoes, 1s. to 1s. 3d. per tub; Hay, 15s. to 20s. per 1,000 lbs.; Straw, 7s. 6d. to 10s. per 1,200 lbs.; Beef, 15s. to 20s.; Pork, about the same per 100 lbs. Inferior beef is sold in the market for much less than these prices. Mutton is equally cheap in proportion. We believe these prices are not likely to advance much this winter. Fresh butter from 8d. to 10d.; Salt, from 5s. to 7s. per bbl.; Cheese, 3d. to 4d. per lb. We conclude this report, by recommending to our brother-farmers, the serious consideration of the present state and prospects of our agriculture, in order to devise the most judicious means that may be practicable for their improvement. The time is fully come that every exertion should be made to obtain that degree of protection and encouragement for Canadian industry, that it has so long required, and has been withheld from it hitherto. We should not desire or ask for what would be unreasonable; but what is reasonable we may obtain, if we are united and true to our own interests. This alone is what is essential to our success.

Cote St. Paul, 23rd December, 1842.

A GOOD COW.

The following song descriptive of the points of a celebrated Durham Cow was chanted amidst great applause at the Darlington Agricultural Society's Meeting:—

She's long in her face, she's fine in her horn,
She'll quickly get fat without oil, cake, or corn.
Hurrah! hurrah for this beautiful cow!
She's clear in her jaws and full in her chin,
She's heavy in flank and wide in her loin,
She's broad in her ribs and long in her rump,
Has a straight and flat back with never a hump.
Hurrah! hurrah for this beautiful cow!

She's wide in her hips and calm in her eyes,
She's fine in her shoulders and thick in her thighs.
Hurrah! hurrah for this beautiful cow!
She's light in her neck and snail in her tail,
She's wide in her breast and good at her pal,
She's fine in her bone and silky of skin,
She's a grazier's without and a butcher's within.
Hurrah! hurrah for the beautiful cow!

—Gateshead Observer.

Traverse the world, go fly from pole to pole,
Go far as winds can blow or waters roll,
All, all is vanity, beneath the sun,
To certain death, through different paths they run.
Where then is sovereign bliss—where doth it grow?
Know, mortal! happiness is not of this world,
Look toward East, and the heaven say only in
Spurn the vile earth—



MANAGEMENT OF FOWLS IN COLD WEATHER.

Many persons complain that hens are not profitable, as they must be fed a number of months in cold weather, without any profit, as they do not lay in the cold season. This depends very much on management. Hens are as profitable as any other stock, if managed with the same care, and we believe more profitable, as there is a more ready return. Pullets generally begin to lay when five or six months old, with good attention, and there is a quick return in eggs to pay for trouble and expense; and in raising chickens, if hatched in season, a good return will be made in a few months, as they bring a good price in July and August, though but partially grown, if they be fat and have yellow legs.

When hens do not lay in cold weather, it is generally owing to their not being kept warm and comfortable, and being well supplied with suitable food, gravel lime, water, &c., &c.

We do not intend to give a description of a hen house, but would remark that it should be dry and warm, and during warm and moderate weather, it should be ventilated; the amount of fresh air should be according to the temperature of the weather. In very cold weather the house should be kept closed, to keep it comfortable. The manure should be often removed, especially when the weather is mild, that the air may be pure. White-washing occasionally, when the weather is mild, will have a good effect, though it is not so necessary in cool, as in warm weather. It is best to have boards directly under the roost to catch the manure, that it may not fall on the ground; in this way the place may be kept much neater. When the manure is removed from the boards, which should be often when it is not frozen, some ashes or lime should be thrown on the boards to absorb the moisture and keep the air pure.

Grain of different kinds is excellent food for hens. Corn, barley, wheat, rye, oats, buckwheat, rice, are all good, and the cheapest kinds may be used. Corn and barley are about as good as cheap kinds of grain as any. It is better to have a part of the corn ground and make a dough with hot water, and use this as a part of their food; and better still to mix the meal with other articles as named below.

It is best to keep two or three kinds of grain by hens, and let them eat which they choose.

Hens will do better to have other food than grain, or grain ground and cooked. Potatoes, apples, pumpkins, squashes, turnips, parsnips, beets, &c., boiled, several kinds together, is the better way, and then while hot stir in meal and bran till sufficiently dry, and mix intimately together. Give this moderately warm, as often as once a day. It will be a very acceptable dish. Much stuff may be used up in this way that would otherwise be wasted; and fowls thus fed will lay better than if kept wholly on grain.

Besides the common food of hens they should have lime, in some state, gravel, meat, and green food. Lime is necessary in forming the egg shell. Old mortar pounded fine, pounded or ground oyster or clam shells, or bones, ground or cut or pounded fine, are good. Fresh bones should be preferred, as they contain animal matter, and will be eaten freely and abundantly.—Some persons first burn the bones, but this is wrong, as it will destroy the oily part which is at least one-half the value, and this causes hens to eat bones more readily. Chalk, which is a carbonate of lime, may be pounded fine and mixed with their food. An abundance of gravel should be kept by hens at all times, as they cannot live without it. With this they grind their food in the gizzard. It is generally allowed that hens will do better to have a portion of animal food when they are confined, or in cold weather when they cannot obtain insects, of which they eat a great many when they can obtain them. In cities and large towns, cheap animal food may be obtained, such as liver, kidneys, and scraps which can be had at one or two cents a pound. Fresh fish will answer a good purpose. Some persons have succeeded well with hens without giving them animal food, but most persons consider this food necessary. Hens are very fond of it, and when they run at large they prefer this food to a large amount.

When hens run at large they eat much green food, such as grass and various kinds of herbage, and when they have been confined some time, without this food, they eat it very greedily when they get out. From this, it is evident that they should have a supply in winter. The best kind is cabbage leaves, cut up fine or fed in whole leaves. This food may be saved and fed through the winter.

As a substitute for green herbage, we have given hens turnips, cut into large slices, and potatoes and apples, and from the manner in which they disposed of them, it was evident that they were very acceptable, not-

withstanding they had grain and other food by them.

We will name an instance of the good effects of extra attention to fowls in cold weather. We had a lot which were supplied with grain, water, and gravel in the cold season. They did not lay till the latter part of February. They were cold hens. The next winter, in addition to grain, we gave them warm food of potatoes, meal, &c., and green food of raw turnips, apples, and potatoes; we gave them a fresh lot of gravel every week, and pounded bones, and oyster shells, and care was taken to keep the hen house clean. In January, the second winter, the same hens laid abundantly. The eggs were worth three times as much as the food they consumed.

A friend who is well skilled in *hen-ology*, gave us his method of managing, which we published in *The Yankee Farmer*. He had 1,900 eggs from 150 hens in the month of January. Another person gave us an account of his management, which was published in the same paper. Five pullets produced 25 dozen of eggs from the middle of October to the middle of April, which is the coldest part of the year.

When the weather is mild and there is no snow on the ground, it is best for hens to go out to the ground. If they do not run at large, they should have a yard where they can go out in suitable weather. They should have a lot of fine sand loam or ashes to dust themselves in.

The person who had so many eggs in January, lives in a colder climate than this, as it is 160 miles farther north. He gave no meat to his hens, but says it may be the better way to give them meat, though he has not tried it.

Some persons give their hens red pepper, salts, and lard, occasionally, in cold weather to make them lay. As eggs are liable to freeze in cold weather, pieces of chaff will answer for nest eggs. Fresh water should be given daily, and twice a day when it freezes.—*Farmers' Journal, Boston.*

A CATECHISM OF GEOLOGY.—By JAMES NICHOL.—This is one of the series of catechisms of elementary knowledge, published by Messrs. Oliver and Boyd, Edinburgh. It is a most useful little hand-book for the young scholar, and equally suited for the instruction of many children of a larger growth. The practical applications of the science of geology (as the author well observes) are, perhaps, more numerous and evident than in most other sciences; mining, agriculture, and geography, closely depend on it; the engineer in forming canals and roads, the architect and sculptor in the materials they employ, the physician and politician in estimating the health and resources of a country, are all indebted to information derived from geology. To the agriculturist, a knowledge of geology is essential to the success of his operations; the various soils depend in a great measure on the inferior rocks, and the plants best qualified to succeed on each, and even the best mode of culture may thus be ascertained. Without this knowledge all application of the experience of one country to another must be uncertain. Much evil has also been done to land from the use of magnesian and other lime-stones, containing substances hurtful to vegetation, which a knowledge of geology would have prevented.—*Selected.*

There was cut last week, in a field at Whissendine, belonging to the Earl of Harborough, a stalk which had on it 80 pods and 275 beans.—*Id.*

MILKING COWS.

The owners of cows should pay particular attention to milking. Children must not be trusted with this business, and there are many grown people who never milk well though they have been brought up to the business.

If you would obtain all the milk from the cow, you must treat her with the utmost gentleness; she must not stand trembling under your blows nor under your threats. She may at times need a little chastisement, but at such times you need not expect all her milk.

Soon after the bag has been brushed by your hand and the ends of the teats have been moistened a little with milk, it flows in rapidly and all the veins or ducts near the teats are completely filled. Then it must be drawn out immediately or you will not get the whole. You must not sit and talk—you must not delay one moment if you would have all the cow is then ready to yield.

The udder should be moved in every direction at the close of milking, and the hands may beat it a little in imitation of the beating which the calf gives it when he is sucking. An expert milker will make the cow give one quarter more in butter, than a majority of grown milkers will.

One season, at Framingham, we kept four cows in the home lot; there was but little difference in the quantity of milk given by each. We had a very steady hired man of forty years of age; he had carried on a farm in New Hampshire and had always been used to milking; but he was so slow the cows had no patience with him.

We milked two of the cows and he the other two, and we were but little more than half as long as he in milking, though we got the largest mess by about one quart. On our remonstrating that he did not draw out all the milk, he said his cows would not yield so much as those milked by us. We then made an exchange: he milked our two and we milked his. In three weeks time the case was reversed; our mess exceeded his by nearly one quart. He never failed to strip his cows to the last drop; out his intolerable moderation prevented his obtaining what an active milker would have done.

Young learners may practice on cows that are to be soon dried off. They should be taught at first how to take hold of the teats and they will remember it; but how common it is to let each child choose his own mode of milking! Learners should know that the hand should be kept very near the extremity of the teat, if they would milk with ease. The left arm should always press gently against the leg of the cow; for if she is inclined to kick, she cannot with any force; she cannot strike an object that leans against her; but if she raises up her foot, as she often will when her teats are sore, the milker will be ready to ward off and keep it from the pail much better than when he sits far off from the cow.

If handlers are made tame and gentle by frequent handling when they are young, they are not apt to kick the milker; their udders should be rubbed gently before calving; it is quite as grateful to them as carding. But if they are suffered to run wild till after they have calved, they cannot be expected to be gentle when you first attempt to milk them. They often acquire bad habits and are not broken of them through life.—*Massachusetts Ploughman.*

LONDON in length is eight miles, in breadth three, and in circumference twenty-six, and contains 1,250,000 inhabitants.

WITHAM AGRICULTURAL SOCIETY.

At the Witham Agricultural Meeting, the following paper by Mr. Lungley was read:—

“At Witham agricultural meeting last October, 1841, the subject of sowing best seed was introduced; one gentleman recommended the planting of best beans, and it was understood a trial was made in a garden, and the inferior beans planted produced weak short straw and a light crop, compared to the best seed planted. On the 15th of February last, two acres of beans were planted—one acre of the best sifted and picked over, and the other acre of tail beans, with the best picked out. The quantity planted is here produced:—

	Qrs.	Bu.	Pk.
Thrashed 1st Sept., the best produced.....	4	4	2
Net weight per bushel 68½lbs. or 19 stone 6 lbs. per sack, (very dry).			
Produce from the tail planted	4	4	0½
Weight per bushel 63 lbs., or 19 stone 4 lbs per sack.			

Difference per acre..... 0 0 1½

Mr. Lungley had also tried the following experiment:—

The following is the test of two samples of wheat here produced, one acre of each was drilled the 18th of October, 1841:—

	Qrs.	Bu.	Pk.
One acre of the best wheat produced.....	4	5	1½
Weight per bushel, 64½lbs.			
Produce from one acre of tail seed wheat.....	4	3	3
Weight per bushel, 64½lbs.			

Difference..... 0 0 2½

The straw was all weighed, and there were not 20 lbs. difference in the weight.

The best was drilled 10 pecks per acre. The inferior..... 7

Very little difference was observed from its coming up to harvest. By close inspection the tail wheat appeared to have rather a narrower blade and somewhat thicker plant, a stranger could not tell the difference by walking across the field.

It is not by any means recommended to sow such inferior wheat. The intention of the trial is to prove that a fair sample of small-berried wheat will produce as much, and as of good a quality as the very superior, and in very wet weather more likely to secure a plant.

The President said there could be no difference of opinion on this experiment. He had heard the same statement before, but he had not known it before so correctly and satisfactorily tested.

SALTPETRE IN MEAT.

Messrs. Gayford & Tucker:—In the 12th number of the last volume of *The Cultivator*, there appeared a communication on the use of saltpetre in curing meat, and the following reason was assigned for abandoning its use, viz. —“It ought to be known, that saltpetre absorbed by the meat, is nitric acid, or aqua fortis—a deadly poison, whereby our salt meat becomes unpalatable and pernicious, a sufficient answer to which is found in the fact—that one of the constituents of common salt, is muriatic acid, as deadly a poison as the nitric acid of the saltpetre, and we might with as much propriety say, that the salt absorbed by the meat is muriatic

acid, as to say that the saltpetre is nitric acid or aqua fortis. Therefore, the objection applies with as much force and truth to the use of the one as the other.

Saltpetre is the product of a chemical union between nitric acid and potassa, (potash), and salt, of a like union between muriatic acid and soda—and in these, as in all other cases of chemical combination, the substances combining, not only lose their properties, but the substances produced generally possess properties entirely different—frequently the very opposite of those of either of their constituents. From which it follows, that a perfectly innocent compound may be produced by the combination of two noxious substances—or a noxious compound, by the combination of two innocent substances; and it is very improper, and well calculated to mislead, to designate a compound substance by the name of either of its constituents, as in the communication referred to, in which nitric acid and saltpetre are several times used as if they were but different names for the same thing.

Some persons think a small quantity of saltpetre very beneficial to their meat—others think it useless—the former need not be frightened from its use by the fear of being poisoned with aqua fortis—nor the latter deterred from trying it.—*Alb. Cul.*

A TROPICAL CLIMATE.—The beauties and blessings of a tropical climate, are thus described by a writer who has experienced it:

“Insects are the curse of tropical climates. The vetic rogue lays the foundation of a tremendous ulcer. In a moment you are covered with ticks. Chicoes bury themselves in your flesh, and hatch a large colony of chicoes in a few hours. They will not live together, but every chico sets up a separate ulcer, and has his own private pus; flies get entry into your mouth, your eyes, and your nose. You eat flies, drink flies, and breathe flies. Lizards, cockatrices, and snakes get into your bed—antae the books—scorpions sting your feet—every thing stings, bites, or bruises—every second of your existence you are wounded by some piece of animal life, that nobody has ever seen before, except Smammerdam. An insect with seven legs is seen swimming in your teacup—a nondescript with nine legs is struggling in the small beer, or a caterpillar with several dozen eyes in his belly is hastening over your bread and butter! All nature is alive, and seems to be gathering her entomological hosts to eat you up as you are standing, out of your coat, waistcoat, and breeches. Such are the tropics. All this reconciles us to our dews, fog vapour, and drizzle—to our apothecaries rustling about with gargles andunctures—to our British constitution, cough, sore throats, and swelled faces.”

OF ROAD WALKS.—Of road walks in the United States, it seems that there are 553. The capital invested in these, amounts to \$2,465,577, producing a value of \$1,078,366. It appears that one-third of these road walks (111), are in Kentucky; and that the capital invested in them is \$1,023,120, or a little less than half the entire capital employed. The value produced is \$1,492,273, or more than a fourth of the entire production of this branch of industry in the United States.

CROONING BEES.—Place your ear close to the hive, and give it a tap; if the inmates give a short and sudden buzz, all is right but if it be a languid hum, or rather a purring sound, the hive must be rejected for the bees are weak.

EDUCATION.

We have invariably advocated a general and judicious system of education, but from what we have learned lately of the effects produced in other countries, by general systems of education, we are led to believe that no judicious system can be adopted, unless based upon religious instruction.—It is a great advantage to us that we have before us, the workings and results of general systems of education in other countries, and we shall be without excuse if we do not profit by these examples and guard against the evils, which we find to have proceeded from modes of general instruction, already adopted both in Europe and America. In 1837, we published a small volume, containing a series of letters, addressed to Canadian Farmers, on the subject of education. In these letters, we have submitted our views and opinions, and these views and opinions remain unchanged now. The letters, are twelve in number, and we shall give one in each number of the Cultivator for the ensuing year, making, perhaps, some trifling additions and corrections. On the present occasion we shall give a few selections from a chapter in Alison's, "Principle of Deputation," on the "Advantages and Dangers of Popular Instruction." The chapter, altogether, is highly interesting, but we can only give a part:—

"Education," says M. Cousins, "if not based on religious tuition, is more than useless," and every days experience is adding additional confirmation to the eternal truth. The Almighty has decreed that man shall not with impunity forget his Maker, and that no amount of intellectual cultivation—no degree of skill in the mechanical arts—not all the splendours of riches, or the triumphs of civilization, shall compensate for the want or neglect of this fundamental condition of human happiness. The proofs of this great truth are overwhelming, universal; they crowd in from all quarters, and the only difficulty is to select from the mass of important evidence that which bears most materially upon the question at issue.

That education, based upon religion, may be expected to produce very different results, from education left to run riot for itself, or left under the flimsy guidance of intellectual cultivation, is self-evident. The great cause of the total inefficacy of the latter for preservation, viz: the extremely small portion of mankind, over whom it ever can exercise any sensible influence, compared with the multitude with whom pleasure and excitement, are the ruling principles, is in no way applicable to religious feeling. Every man has not an understanding capable of cultivation; but every man has a soul to be saved. Universal as is the stimulus of the senses and passions, as universal, if early awakened, are the reproaches of conscience and the terrors of judgment to come. Doubtless, there are great numbers in every age, and especially in every opulent age, to whom all the exhortations of the Gospel will be addressed in vain, and in whom the seductions of present interest or pleasure, will completely extinguish all the effects of the most pointed denunciations of future danger, within this world or the next. But, still, the number of those whose religion can prevent from sinning, or reclaim from vice, is incomparably greater than those whom science or philosophy can

effect. The proof of this is indecision!—Every age of the world has shown numerous examples of nations convulsed, sometimes to the last degree, by religious ferour and sectarian enthusiasts, but no body ever heard of the masses being moved by science or philosophy. Chemistry and mechanics are very good things, but they will never set the world on fire.

It is self-evident therefore, that, as the degrees of unregulated education consists in this, that works which are to do the people good, appear like the paths of virtue, thorny and uninviting in the outset, and are felt to be beneficial only in the end, while dileterious and exciting productions, like the temptations of vice, are exciting and agreeable in the outset, and to every capacity, and are perceived only to lead to sackcloth and ashes, when it is too late for any effectual amendment of life or manners; we must look for a preventative to this general and serious evil, in some counteracting principle of equally universal application, and equally powerful efficacy. The experience of ages, not less than the feelings of our hearts tell us, that the only antidote to it, is to be found in the intimate blending of education with religious instruction. It is by this union alone, that the antagonist power of good and evil can be equally developed by the powers of education, that the attraction of sin be counteracted by opposite principles of equal force and general efficacy; that we can give its true developements to the principles of christianity, and screen public instruction from the obvious reproach of adding fever to the dissolving powers in the many, and imparting strength to the counteracting forces only of the few. These, accordingly, are the principles of M. Cousins on this subject. "Religion is, in my eyes, the best, perhaps the only basis of popular instruction. I know a little of Europe, and have never witnessed any good popular schools, where christianity was wanting. The more I reflect on the subject, the more I am convinced with the directors of the *Écoles Normales*, and the ministerial counsellors, that we must go hand in hand with the clergy, in order to instruct the people, and make religious education a spiritual and large part of instruction in our primary schools. I am not ignorant that these suggestions will sound ill in the ears of some, and that in Paris I shall be looked upon as excessively devout; but it is from Berlin, nevertheless, not Rome, that I write. He who speaks to you is a philosopher, one looked upon with an evil eye, and even persecuted by the priesthood; but who knows human nature and history too well, not to regard religion as an indestructible power; and christianity, when rightly inculcated, as an essential instrument for civilizing mankind, and a necessary support to those on whom society imposes hard and humble duties, unchanged by the hopes of future fortune, or the consolation of self-love. * * *

But though the dangers of education, if not based on the most sedulous moral and religious culture, are thus formidable, the addition which intellectual cultivation makes to the powers of mankind is prodigious. The extrication of the talent, which is buried in the obscurity of humble life, has the most important effects on every branch of public prosperity; on the growth of opulence—the improvement of art—the extension of industry—the enlargement of knowledge. From the vigour which emanates from the middling and lower orders, is derived the energy which upholds the cause of public freedom, and resists the corruptions of ancient dynasties. In the obscurity of the cottage, far from the seductions of rank and affluence, is nursed the virtue which

counteracts the decay of human institutions; the courage which defends the national independence; the industry which maintains all the classes of the state. When the public prosperity is founded on this broad and undecaying basis, the fabric of security, like the pyramids of Egypt, may long stand unshaken, amidst the convulsions of fortune.

Indirectly, therefore, the education of the lower orders of the people, has a general effect, and produces lasting consequences upon the whole classes of the people. The talent which it develops—the wealth which it accumulates—the energy which it calls forth, constitutes the great sources of public prosperity. The whole community is varied and sustained, by the qualities which it draws forth from a limited class of the people.

(To be Continued).

AGRICULTURAL IMPROVEMENT BY THE EDUCATION OF THOSE WHO ARE ENGAGED IN IT AS A PROFESSION.

BY WILLIAM EVANS,

AUTHOR OF THE "TREATISE ON AGRICULTURE," &c.—LETTER I.

"Whatever be the position of man in society, he is in constant dependance upon the three kingdoms of nature. His food, his clothing, his medicines, every object either of business or pleasure, is subject to fixed laws; and the better these laws are understood the more benefit will accrue to society. Every individual, from the common mechanic, that works in wood or clay, to the Prime Minister, that regulates with a dash of his pen the agriculture, the breeding of cattle, the mining, or the commerce of a nation, will perform his business the better, the better he understands the nature of his things, and the more his understanding is enlightened. For this reason, every advance of science is followed by an increase of social happiness"—Says political economy.

The citizens of Montreal and Quebec appear to have been a good deal interested lately on the subject of education. The excellent lectures of Dr. BARBER, have, I believe, increased this interest, and there is every reason to hope, that much good will be produced in consequence. Whether it is in contemplation to extend the benefits of education beyond the bounds of those cities, I am unable to say, and from this uncertainty, I am induced to address the Agricultural population, and endeavour to convince them, that if education is useful and necessary for the inhabitants of cities and towns, it will be found equally advantageous and pleasing for those of the country. I am sorry to say, there is practical proof in most countries, that education is not considered by all, to be essential to render every man competent for performing the part which he undertakes, or which his circumstances oblige him to perform in life, with advantage and satisfaction to himself and others. Hence it is that education is much neglected, and from this cause agriculture must languish, and never will be in a flourishing condition, unless a larger proportion of the occupiers and cultivators of the soil are usefully and practically educated. There are many circumstances connected with agriculture, besides ploughing, sowing, planting, and harvesting, that require to be perfectly understood by the farmer, in order to ensure his success, and which an ignorant man never can understand. I would not continue a farmer for one day, were I convinced that it required neither education or science to practice my profession profitably. From my

youth I have been taught to look upon the profession of a farmer, as above all other professions, and I confess this opinion has "grown with my growth and strengthened with my strength." In the British Isles, I never heard this fact disputed. It is only when education is wanting, that the profession is lowered in estimation. From the very nature of things, agriculture being the source of all wealth, and more particularly so in Canada, why should education be less necessary for those who practice it, than for the merchant, manufacturer, or shopkeeper, the brewer, the baker, and a host of other mechanics and tradespeople? To view the matter in another light, education increases knowledge, and knowledge gives power, which must be desirable, because it may be exercised advantageously in various ways. It then becomes a question of some consequence to ascertain how the power which knowledge confers is at present shared between the several classes which compose the population in Canada. I am sorry to say, that though the agricultural class forms an immense majority, that they are by no means educated in proportion to their numbers, compared with the other classes; and that consequently, a minority possess a preponderating power and influence. There are various causes to which this state of things is to be attributed. It has often been to me a matter of regret, that few of the young men educated at the colleges and seminaries in Canada, hitherto, have become farmers. I suppose they must have considered that were they to settle on farms, their education would be of no value to them. They almost invariably apply themselves to the professions of lawyers, doctors, notaries, merchants, shopkeepers, or any other rather than to agriculture. This is one that it would appear, is looked upon as a degrading profession for an educated young man. How strangely do men differ in their estimation of things! The greatest men of former ages, and Washington, of our own times, when they retired from public life, occupied themselves in husbandry, as the only enjoyment fit for great men.

How injurious it must be, that those who are the best qualified to promote agricultural improvement, and raise the character of agriculturists, are withdrawn from that occupation, which ought to be honourable, and that station in society where, of all others, they might be most useful to the community. Farmers cannot occupy that high station they may and ought to do in British America, without a sufficient education. It is this alone that is necessary to qualify them to fill this station, and retain it. I will freely admit that a man may be well educated and not be a good farmer, because a practical knowledge of agriculture is necessary to constitute one. I am persuaded, nevertheless, that it will be difficult to find an uneducated man a good practical farmer, capable in all seasons, and in every circumstance, to make the most profitable use of his farm and opportunities. If education is necessary for men that are engaged in pursuits of infinitely less consequence to the world than agriculture, how can it be dispensed with by the farmer?

I would appeal to those who have had the advantage of education, and who make a good use of it, by continuing to be reading men, what would compensate them for the want of education? Without including any of that knowledge obtained by education that is useful and profitable in common life, the man of science has other exquisite enjoyments to which the ignorant must ever be entire strangers. I cannot forego the opportunity to copy here a few lines from Dr. Dick—"If substantial happiness is chiefly

seated in the mind, if it consists in the vigorous exercise of its faculties, if it depends on the multiplicity of objects which lie within the range of its contemplation—if it is augmented by the view of scenes of beauty and sublimity and displays of infinite intelligence and power—if it is connected with tranquility of mind, which generally accompanies intellectual pursuits, and with the subjugation of the pleasures of sense to the dictates of reason, the enlightened mind must enjoy gratifications as far superior to those of the ignorant, as a man is superior in station and capacity, to the worms of the dust."

My object in this communication, and those which I propose shall follow, is, to endeavor to engage the attention of agriculturists, in particular, to the all-important subject of education. Without presuming to dictate, I shall simply submit for their consideration, in the clearest manner I am capable, the advantages and pleasures that would be likely to result from them, and to the whole community, from the useful, practical and general education of the agricultural class. When I have done this, I shall next state what, in my humble judgment, is necessary to constitute this education, and how, subsequently to the period of leaving school, education may go on constantly, extending and improving during the full term of existence, with all such as are desirous of attaining useful knowledge, without in any way interfering injuriously with their business as farmers. This latter point, I think, it must be essential to prove, and I expect I shall be able to do so satisfactorily. If I shall be unable to accomplish what I undertake, I trust, however, that what I may advance will be the means of inducing those who are more competent, to take the subject into consideration. If the prosperity of agriculture is promoted, it is of no consequence to me who shall be the instrument.

LEACHED ASHES.

A few experiments made with leached ashes, by Mr. Albert, a German, has been the rounds of most of the American Agricultural papers, and it would appear as though their fertilizing properties were comparatively unknown.

We have long since been thoroughly acquainted with the extraordinary effect of leached ashes, and are of the opinion that their fertilizing qualities chiefly consist in imparting to the soil a capacity to appropriate and disseminate more abundantly the fertilizing constituents of the atmosphere.

In the Spring of 1839, we applied three wagon loads of leached ashes to five roods of old meadow land, that had been mowed and occasionally pastured for 35 years. The crop, which was cut from this meadow, the year previous to the top-dressing, did not yield more than one ton of hay, and that of an inferior quality; whereas the one which succeeded the dressing, yielded upwards of two and half tons of the best quality of hay, and the following crop produced nearly a like quantity. The influence of the single dressing was visible the two last years. We confidently state that the additional quantity of hay realized from the three loads of leached ashes, equal to 80 bushels, was not less than three tons. The most extraordinary effect produced from this experiment, was the action of the ashes on the common white clover, indigenous to the country, which grew

to the height of twelve inches, and apparently as thick as it could stand on the ground.

We made another experiment with leached ashes, which may be worthy of notice, on a crop of rutabago, which proved not only of great importance to the plants, but was a great preventative of injury from the little tormenting fly, which has been the great bane to successful turnip culture in Canada.

It has been a practice in England for many years, to pare and burn certain lands that had been unoccupied for many years previous, the sole object of this process being to give a dressing of ashes to the land. In this country the cultivators of the soil, instead of being intelligent, are allowed to grope along in the dark without the aid of science to direct them in their onward career. We promise them if they only heed our advice, that we will give them all the proper information they require, to make them intelligent in their business and respectable in their circumstances. To do all this, they must read and "inwardly digest," the remarks given periodically in our journal, and bring reason and common sense to bear on the operations of their farming transactions.

By the aid of the science of Agriculture, the intelligent practical farmer may learn important lessons on the analysis of his soils, and may not only ascertain their original constituents, but the degree of fertility or poverty incident to each. By adopting proper means to renovate soils which have been exhausted by unskillful cultivation, they may be brought back to their virgin qualities, and be made the most profitable lands in cultivation. The two most powerful agents that are abundantly accessible in Canada, are gypsum and ashes. The important and various uses of these agents will be subjects of our most constant care and interest to communicate to our readers.

In the mean time we beg to enforce the importance of the subject, particularly upon our kind friends, and solicit them to procure a few loads of ashes, which they may obtain from any soap chandler in British America, and spread them broad-cast on their meadow or pasture grounds, at the rate of 70 bushels per acre. The effect produced will remunerate them ten-fold for their trouble, and act to stimulate them to renewed exertions in making other interesting experiments.

Leached ashes will be found particularly efficacious to oats, pease, buckwheat, turnips, potatoes, and the broad leaved grasses, and in no case will be found injurious to other crops.

CURE FOR WORTS IN HORSES AND CATTLE.—A valued friend of great experience in horses and cattle, and who has imported and bred many of the best in the U. States, says that a strong wash made of pearl ash and water, applied thrice a day, will remove tumors and warts.

We select the following statements, from *The Albany Cultivator*, made by the successful competitors for cheese, at the late Cattle Show and Fair of the New-York State Agricultural Society held at Albany:—

Mr. Cheesebro's Statement.

Number of cows kept 50; keep them stabled through the inclement season; feed them from three to four times a day with good hay; when near coming in feed one peck of potatoes each a day, till turned to pasture; salting twice a week in summer, and once in winter, and water accessible at all times; milking very regularly.

The rennet is prepared by taking some whey and salting it till it bears an egg; it is then suffered to stand over night; it is then skimmed off clear; to this is added an equal quantity of water brine strong as the whey; add to this some sweet brier; thyme, clover, or other sweet herbs, also a little saltpetre; the herbs are kept in the brine three or four days, after which it is put into a tight vessel clear from the herbs; add a little essence of lemon or orange; also four large rennets to six quarts of liquor; rennets saved in the ordinary way; cheese made from two milkings, no addition of cream.

Treatment of Milk.—The milk at night is strained into tubs, cooled by setting stone crocks filled with water in them; stand till morning, then dip the top of the milk into a kettle placed over a slow fire, continually stirring till sufficient to warm the whole blood heat, then add the morning's milk; very essential to have it a proper—which is of a blood heat; then add the rennet, two quarts to eighty gallons of milk; let it stand about 30 minutes, then cut it into checks about an inch square with a cheese knife; then gently break it with the hand and whey off; then work it fine with a sharp knife; then add the scalding whey; have it a light scalding heat; let it stand about half an hour, then separate the whey from the curd; then add one teacupfull of ground Onondaga salt to every 15 or 20 pounds of curd; if the curd is very dry of whey to 20 pounds of curd; then dip it into the hoop and put to press; press in a lever press two days, turned once in the meantime; then taken out, rubbed with annatto, soaked in ley, then rubbed with lard, placed on shelves and turned daily through the season.

ELIZA CHEESEBRO.

Fleming, Sept. 24, 1842.

Mr. Fish's Statement.

The cheese presented with this statement was made in the month of — from the milk of twenty cows; one day's milk or two milkings; the quantity of salt one pound of refined Salina salt to forty pounds of curd; the quantity of rennet no more than sufficient to digest in 30 minutes; curd prepared for the hoops and put to the press; turned down the first day and pressed in all 48 hours; then taken from the press, placed upon tables prepared for the purpose; turned and rubbed daily, and moistened with whey oil as often as necessary to keep them smooth and prevent cracking.

A. L. FISH.

Litchfield, Herkimer Co., N. Y.

Mr. Green's Statement.

The cheese presented with this statement was made in June last, from the milk of twenty-three cows; one day's milk or two milkings; no addition of cream, the quantity of salt, one teacupfull refined Salina salt to 20 pounds curd, or about 2½ pounds salt to 100 pounds curd; rennet prepared by steeping several at a time until the

strength is obtained, and then straining off the liquor; use a sufficient quantity to digest in 45 minutes; one teacupfull to 30 pounds curd, generally answers the purpose when prepared as above; curd prepared and put into the hoop, pressed one hour, then turned and change of cloths, and pressed from six to eight hours; then turned and cloths changed again, and pressed in all 24 hours; then taken from the press; placed upon tables prepared for the use; turned and rubbed daily, and moistened with whey oil as often as necessary.

SAMUEL GREEN.

Fairfield, Herkimer Co.

Mr. Haswell's Statement.

My cheese was made in the month of July from eight cows, with two milkings; with no addition of cream. I used Liverpool salt, about half a pint; the rennet used in quantity about two inches square, and steeped in half a pint of cold water eight hours previous to its being put into the milk; they were put in a lever press and remained there 44 hours; were turned three times, and salted in the press; were taken into the cheese room and rubbed and turned every day.

ISAAC HASWELL.

Waterchiet, Sept., 1842.

Mr. Burch's Statement.

The cheese exhibited here were made on the 20th and 22d of May, from 44 cows and two milkings; 47 cows were milked in the dairy in all the season; no additions were made of cream, but the cream from the milk kept over night was put in. We use the Onondaga salt—the purest we can get—in the proportion of a common teacupfull to 16 pounds of cheese; after the curd is broken up fine in a machine with two cylinders set with small wire teeth, the salt is put in and the whole well stirred and mixed.

The rennet when taken from the calf is turned inside out, and stripped clean with dry hands, no water being used; after laying in salt three days, it is turned, stretched on sticks and dried. When wanted for use, one rennet is soaked in two quarts of warm water, and one teacupfull used for one cheese, weighing as these do, 115 and 116 pounds. The cheese is pressed in "Hales' Patent Self Acting Lever Press," 24 hours, and turned once in the time.

From the press the cheese goes on to the tables; is coloured with annatto, and rubbed over with butter made from cream taken from the whey. Bandages are put on the first day; the cheese turned, rubbed, and greased at least twice a week, and through the early part and warm season, nearly every day; much depends upon the faithful performance of this part of the treatment.

The cows are always milked in the stanchels, and the milk conducted from the barn to the cheese-room, a distance of 118 feet, in ¾ inch lead pipe. The advantages gained by this are: keeping the milk from the impurities unavoidable from milking out in rainy weather, and in muddy and filthy yards; and the greater comfort in milking.

THOMAS BURCH.

Little Falls, Sept., 27, 1842.

The following statements, are copied from the same paper, being those made by the successful competitors for butter, at the same Cattle Show and Fair:—

Mr. Cooley's Statement.

Made from 13 cows, from 16th to 24th September, and seven pounds of salt and a teaspoonful of saltpetre, used in keg of 80 pounds.

Cows kept in usual way, and run in grass; had pure water daily, and salt twice a week.

Milk set in pans until cream rises and becomes thick; then churn all the milk immediately; dog churn used.

Method of freeing butter from the milk is to skim out the butter with a ladle, and work out the milk with a ladle with pure cold water, but using as little water as possible, as the water has a tendency to take away the good flavour or sweetness of the butter; and care must be taken not to work it too much, as it will become greasy. The best method of keeping butter in the summer, is in a cool place in white oak firkins, covered with a weak brine.

GEORGE COOLEY.

Blooming Grove, Orange Co.

Mr. Goodwin's Statement.

Time of Making.—Since the first of the present month; number of cows kept, fourteen.

Mode of Keeping.—Mostly in stable in winter, and feed hay; and in the spring roots or some grain; in summer, grass.

Treatment of Milk and Cream.—Strain in tin pans, and set in a room that has a northern aspect and free circulation of air; set the cream in a cellar till ready to churn.

Mode of Churning in Summer.—In a barrel churn, in a cool room.

In Winter.—Keep the milk and cream in a warm, instead of a cool room; churn in the same manner.

Freeing Milk from Butter.—By pressure.

Salt Used.—The best quality of Onondaga ground salt; the quantity is tested by the taste of the dairywoman.

A very delicate tincture of the best loaf sugar is used, but care should be taken not to use too much; no other substances used.

Best time for Churning in Summer.—In the morning, or when it is cool.

Best manner of Keeping in Summer.—Keep the butter in tubs, jars, or firkins in a cool cellar; I think jars are best.

I. F. GOODWIN.

Westmoreland, Sept. 28, 1842.

Mr. Morrison's Statement.

Made in September; ten cows kept; milk kept in tin pans; churned by dog machine; freed from milk by ladle and water; fine rock salt; no other ingredient used; churned in the morning; preserved in firkins.

H. MORRISON.

Montgomery, Orange Co.

Mr. Hall's Statement.

The undersigned offers for the New-York State Agricultural Society's Premium, 87 pounds butter, made from seven cows in two weeks of the present month. The cows were kept on grass feed only; the milk set in tin pans for 48 hours; the cream then taken from the milk, and kept in stone jars three or four days; churned in a circular churn with revolving paddles; the butter freed from the milk by the use of a wooden ladle; the salt the best of blown or rock salt, and the quantity regulated altogether by the taste, as it requires more salt in warm weather, as more passes off with the milk; no other substance is used except a slight addition of refined lump pulverized.

The best time for churning in hot weather is in the coolest part of the day; and the best mode of preserving it at any time of the year is in stone jars; pack it in solid, and exclude the air from it entirely.

B. A. HALL.

*New Lebanon, Col. County, }
September 23th, 1842. }*

Mr. Bull's Statement.

The butter was made from the 6th to 20th September, from nine cows; the cows were kept on a part of the farm known by the name of the Clinton farm, Governor Clinton's birth place; the quantity of salt used in said firkin of butter was 6½ lbs. fine salt, called Ashton salt; no saltpetre nor any other substance used.

J. S. BULL.

CHRONOLOGY OF SOME IMPORTANT IMPROVEMENTS, &c.

Maps, Globes, and Dials were first invented by Anaximander, in the sixth century before Christ. They were first brought into England by Bartholomew Columbus, in 1489.

Comedy and Tragedy were first exhibited at Athens, 562 B.C.

Plays were first acted at Rome, 239 B.C.

The first public library was founded at Athens, 526 B.C.

The first public library was founded at Rome, 167 B.C.

The first public library was founded at Alexandria, 284 A.D.

Paper was invented in China, 170 B.C.

The Calendar was reformed by Julius Caesar, 46 B.C.

Insurance on ships and merchandize, first made in A.D. 43.

Saddles came into use in the fourth century.

Horse-shoes made of iron, were first used A.D. 481.

Stirrups were not made till about a century after.

Manufacture of silk brought from India into Europe, A.D. 551.

Pens first made of quills, A.D. 635.

Stone buildings and glass introduced into England, A.D. 674.

Pleadings in Courts of Judicature introduced A.D. 789.

The figures of Arithmetic brought into Europe by the Saracens, A.D. 991.

Paper made of cotton rags invented towards the close of the 10th century.

Paper made of linen in 1300.

The degree of Doctor first conferred in Europe at Bologna, in 1130; in England, 1200.

The first regular Bank was established at Venice, 1157. The Bank of Genoa was established in 1407. That of Amsterdam in 1609. That of England 1694.

Astronomy and Geometry brought into England 1220.

Linen first made in England, 1253.

Spectacles invented 1280.

The art of weaving introduced into England 1330.

Gunpowder invented at Cologne by Schwartz, 1320—40.

Cannon first used at the siege of Algeziras 1342.

Muskets in use 1370.

Pistols in use 1544.

Printing invented at Mentz, by Guttenberg, 1440.

Printing introduced into England, 1471.

Post Office established in France 1464, in England, 1531; in Germany, 1611.

Turkeys and Chocolate introduced into England from America in 1520.

Tobacco introduced into France by Ni ot, 1650.

First coach made in England, 1561.

Clocks first made in England, 1569.

Potatoes introduced into Ireland and England in 1650.

The circulation of the blood discovered by Harvey, 1619.

The first newspaper published at Venice, 1630. First in France, 1631. First in England, 1665.

Coffee introduced into England, 1641.

Tea do. do. England, 1666.

The steam engine invented by the Marquis of Worcester, 1655.

Fire Engines first invented, 1663.

Turnpikes first made in England, 1663.

Bayonets invented at Bayonne (whence their name), 1670. First brought into use at the battle of Turin, 1693.

Stereotype printing invented 1725.

New style of calendar introduced into England, 1722.

Air Balloons and Aerostation invented in France, 1782.

The first mail carried into England by stage coach, 1785.

The cotton gin invented in Georgia, 1794.

Life boats invented in England, 1802.

The first steamboat on the Hudson, 1807.

The streets of London first lit with gas, 1814.—*Selected.*

TO CURE HAMS, &c.

A writer in *The Philadelphia Ledger* gives the following directions for curing hams, shoulders, rounds of beef, tongues, &c., for drying, which he says he has followed successfully for twenty years, and that hams thus cured, were sold this last spring for eleven cents per pound, to sell again, when thousands of the common quality were bought of the grocers for 6½ cents.—*Far. Cabinet.*

"To one gallon of water add eight pounds coarse rock salt, one pint of molasses, and two ounces saltpetre; mix the ingredients, in these proportions, well together, and let them remain until dissolved, say twelve hours, and then assort your hams so as to have them of the same or similar sizes in the same tubs, packing them *either end downwards*, but not flat or horizontally, until the cask is full; then pour the brine, as above prepared, over them, and your work is about done. Hams of about ten pounds weight should remain in this pickle about four weeks, and larger ones in proportion, and *no longer*; (six weeks in common being quite too long for pretty large hams)—or they will become too salty, a great fault indeed for this article. All the various laborious and tedious methods we hear of, such as dry rubbing with saltpetre, sugar, &c., may be very good indeed, but quite unnecessary, inasmuch as precisely the same end is attained by the above process, with comparatively little trouble. After the hams have lain a sufficient time in pickle, take them out and let them drain for a day or two, before hanging them up to smoke; for which purpose hickory wood is much the best; and when brought to a proper colour, they may be packed in casks of any size, in *dry saw-dust*, in medium coarse salt, (as they will take no more salt), or any compact article, or they may be packed without any thing, if not intended for export; in which case it is better to interlay them with something to keep out flies.

"The above receipt is unsurpassed for curing rounds of beef, tongues, &c., for drying; but they must not remain in the pickle more than *ten days*, then to be taken out, washed and hung up to dry. I do not profess to be acquainted with the best mode of putting up beef for shipping. But pork seems simple enough—cleanliness, despatch and plenty of salt, are the principal requisites. By despatch I mean, that the meat should not be suffered to remain unpacked so long as to become partially tainted before being salted. It is thought by some, that it

is sometimes left to lay too long in bulk before salting, which accounts for so much un-saleable meat received from the interior.—To obviate all this, let the pork remain as short a time as convenient, after becoming perfectly cool, before it is cut up into proper sizes; and begin to pack in *sweet* casks, by first putting in the bottom salt to the depth of two inches; then begin to put down a layer of pork, in a circular form, round next the staves, with the skin next the wood, and so on filling up the middle last, throwing in between each layer a sufficient quantity of salt to fill all the interstices, and to cover them partially; after which take a wooden rammer and ram the meat down for some time. Let 2½ or 3 inches of salt remain on the top—(in no case using any other than the *best rock salt*)—then let the meat stand thus for a week or ten days, after which pour in as much pure clean water as will nearly fill the cask; and if well hooped and headed, it may be sent to Calcutta and back again, and be as good on its return as it ever was."

IMPORTANT INVENTION.—Mr. Miller, an ingenious saddler, of Lothian-street, Edinburgh, has devised a mode capable of preventing even the strongest and wildest horse from escaping the controul of its rider or driver. On Wednesday last Mr. Miller made a public trial of his invention in Queen Street, in presence of Professor Dick, Mr. Wordsworth, and a number of individuals, including several of the county gentlemen, and all of approved knowledge. For this purpose, a strong, active, hard-pulling, and notorious run-away horse was procured, and yoked in a gig, when Mr. Miller boldly took his seat, and requested some of the company to irritate the animal, with which desire they reluctantly complied. Off set the horse, but he had scarcely made a few springs, when Mr. Miller at once subdued him, bringing him to a literal stand-still. This was repeated several times, every means being employed to provoke still further the restive animal; but he was as often brought up by Mr. Miller, and apparently with a ready facility. All present expressed themselves delighted and surprised, not more by the efficiency than the neatness and simplicity of the invention. The apparatus can, we understand, be obtained at a trifling cost, and can, besides, be used with any harness or riding-bridle, without alteration.

TRUE FEMALE NOBILITY.—The woman, poor and ill-clad as she may be, who balances her income and expenditure—who toils and sweats in unrepining mood among her well-trained children, and presents them morning and evening, as offerings of love to her husband, in rosy health and cheerful cleanliness, is the most exalted of her sex. Before her shall the proudest dame bow her jewelled head, and the bliss of a happy heart dwell with her for ever. If there is one prospect dearer than another to the soul of man—if there is one act more likely to bend the proud and inspire the broken-hearted—it is for a smiling wife to meet her husband at the door with his host of happy children. How it stirs up the tired blood of an exhausted man, when he hears a rush of many feet upon the staircase—when the crow and carol of their young voices mix in glad confusion—and the smallest mounts or sinks into his arms amidst a martial shout.—God! it was a halo from every countenance that beamed around the group! There was joy and a blessing there.—*Chambers's London Journal.*



To the Editor of The British American Cultivator

ON THE COMPARATIVE NATURE OF GRAY AND WHITE PLASTER AS MANURE.

Mr. Editor:—

To those who have experienced the beneficial effect of this material, as a cheap manure, the result of experiments calculated to show the respective merits of the two varieties of plaster, may not be unacceptable to your practical readers generally.

It is a remarkable fact, that the beds of plaster near Paris, are chiefly of the grey variety, but having occasional seams of white, some of which are crystalline and others radiated, similar to the stielactites found in ancient mines; but the plaster at the beds near Seneca is almost entirely of the white variety.

It is difficult to see much, if any difference in the first crops succeeding the application, but in the second crops the Paris plaster has the decided advantage, especially on all soils, in which the calcareous ingredients is deficient, which is the case in the greater part of the oak plains. This fact may be explained from the circumstance, that the Paris plaster contains a considerable portion of carbonate of lime, in the shape of indurated marl, while the Seneca plaster is purely sulphate of lime. The experiment may be satisfactorily tried, by filling two wine glasses about three parts full with diluted nitric acid, in the proportion of three parts of water and one of acid; or if this be not at hand, the best distilled vinegar will show the experiment, put into each glass about a spoonful of pulverized or ground plaster, the effervescence and consequent expansion in the Paris plaster will immediately flow over the top of the glass, while but little effervescence could be seen in the Seneca plaster. It may be unnecessary to state that the cause of this is the superior affinity in the nitric acid for lime, and consequently the carbonic acid is expelled by it.

A great deal has been written by scientific men, intending to show the chemical agency of plaster, but without controverting any of those ingenious theories, there are certain practical facts, which afford amusing criteria, and in which any one may in the proper seasons satisfy himself by going over a field in the morning or evening, which has been partly pastured and partly not; when vegetation is in full vigour he may observe large dew-drops in the grass or grain, where plaster has been sown, but the grass or grain on other parts of the field will be quite destitute of dew or moisture; this fact seems to be a convincing proof that affinity for moisture is one cause of its fertilizing power.

Another way in which plaster exerts a beneficial agency, is in correcting the acidity which exists more or less in all soils in this part of Canada, especially on the oak plains, as before alluded to, and I find that repeated dressings of plaster will have the same effect in destroying the wood sorrel oxalis acotosa, as the application of chalk in England, in removing the very same weed. The practice of chalking in the south of England, within the past fifteen or twenty years, has been carried to much greater extent than ever before known, and the effect on some soils is similar to that of plaster here. The pungent acid, in some soils, before being chalked, is such as to be destruc-

tive to sheep; but this will not be surprising, when it is known that the ozallic acid of the shops, is found in the common wood sorrel oxalis acotosa, or acotosalla, analogous to chalking, is the practice of marling in Somersetshire and the western counties, where they have no chalk. The application of marl on their pastures will produce great crops of white trefoil, precisely the same herbage as the application of plaster produces on the oak plains in Upper Canada. It seems therefore conclusive evidence, that the chemical agency of both are similar;— Providence in Her own kind provision for our wants has given abundant stores of these minerals, and it is a remarkable fact, that when most needed they are in general to be obtained with the greatest facility. The Somerset and Devonshire plaster is more compact than either of our varieties—I have some specimens for inspection.

With regard to the indications in searching for plaster, its geological position, &c., experience has suggested certain general practical observations, which shall be communicated hereafter.

In the mean time,

I remain your obdt serv't,

H. MOYLE.

SHEEP WALK, near Brantford,
December 10th, 1842.

To the Editor of The British American Cultivator.

GUELPH, 21st Dec., 1842.

DEAR SIR,

The second exhibition of stock, by the Agricultural Society of this District, took place in a beautiful meadow, immediately adjoining this town, on the 11th October last, and excited the greatest possible interest, not only amongst the Farmers, but amongst the gentlemen, merchants and other inhabitants of the District.—The day was exceedingly auspicious, and the quantity of stock exhibited was immense. Long before the hour appointed for the commencement of the exhibition of the stock, by the judges, the show ground was thronged by anxious spectators, the most knowing of whom were kindly pointing out to their uninitiated friends the merits and demerits of the animals placed in review before them. The judges, (who were very experienced graziers, from the District of Gore, and to whom the Agricultural Society of this District are under great obligations for their valuable services,) commenced their very arduous duty precisely at noon, and it is from notes, with which they were kind enough to favour me, that I make the following report. The arrangements for the accommodation of the stock were excellent, and reflected great credit upon the managing committee. The stallions exhibited, appeared to be hardy and useful animals. The mares were something of the same character as the stallions, not handsome, but tolerably adapted to the circumstances of the District. There was a large lot of horses, exhibited as hackneys, and their appearance, (which was certainly pretty,) excited great and general interest: they were most of them nice tits, but those possessing action were deficient in point of strength, and those possessing strength were deficient in point of action; in fact, an experienced horseman, would have considered that there was scarcely a thorough good hackney in the lot. Mr. Howitt produced about a dozen head of his Durham cattle, which would cut a good figure in any place, but in this District they are unrivalled. Several young bulls were exhibited, which had received a drop or two of Durham blood into their veins, and it was admitted

on all hands to have been a great advantage to them. A very great number of cows were exhibited, and they were of a quality so good as to do their owners infinite credit. The two years old heifers were good, and the yearling ones particularly fine. The one produced by Mr. Thring was very much admired. The four years old steers were very good ones. There were some very fine Leicester sheep on the ground, but they were not so numerous as last year, in consequence of the whole of Mr. Jackson's splendid flock having been withdrawn from competition. The South Downs were not very numerous, but they were good. There were about twenty pens of grade Leicesters exhibited, and they were of very superior quality; the judges had much difficulty in deciding which were the best. Many of the ewes, (having raised lambs,) would weigh from twenty six to twenty eight pounds per quarter. The hogs were all of the Yorkshire breed, and were highly commended by the judges and by the spectators. At the conclusion of the exhibition, about eighty gentlemen and farmers partook of an excellent dinner at the Union Hotel, roast Beef and Plum Pudding, being the most prominent dishes. In the unavoidable absence of the President, the chair was taken and most efficiently filled by Thomas Saunders, Esquire.

Alexander Dingwell Fordyce, Esq., acting as Croupier, some very excellent and appropriate speeches were made by the Chairman, by the Hon'ble Adam Ferguson, and by other gentlemen, and the evening passed in the most agreeable manner. I hope to be able in the course of a few days to send you an advertisement of an exhibition of grain, roots, &c., to be held by the Agricultural Society of this District, in January next, by which you will perceive that the Canada Company have placed a sum of money, in the hands of the Directors of the Society, enabling them to give the sum of forty dollars, to the growers of the first and second best samples of fall wheat. This generous conduct of the Canada Company, entitles them to the warmest acknowledgments, not only of this particular Society but of the agriculturalists throughout the Province. The above report would have been made to you several weeks ago, had I not been effectually prevented from writing, by a severe illness, from which I have not yet perfectly recovered. Here follows a list of premiums.

I am, Sir,

Your obedient Serv't,

J. HARLAND.

HORSES.

	£	s	d
Best Stallion, John Mitchells...	2	10	0
Second do Thos. Nichols.....	2	0	0
Best Mare, James Wright,.....	2	10	0
Second best do, Alex. Drysdale..	1	5	0
Third best do, James Cowan....	0	15	0
Best Hackney, John Harland....	1	5	0
Best Colt Foal, George Armstrong	1	0	0
Best Filly, do, Alex. Blyth.....	1	0	0

HORNED CATTLE.

Best imported Bull, John Howitt..	2	10	0
Second best do, Richard Jackson..	1	5	0
Best dp. Cow, John Howitt.....	2	10	0
Best do. do, Richard Jackson....	1	5	0
Best Bull, not thorough bred, Jas. Hudson.....	2	0	0
Second best do, not do, Joseph Parkinson, Esq.....	1	0	0
Best Cow, not do, R. Jackson....	1	10	0
Second best do, not do, Joseph Parkinson, Esq.....	1	0	0
Third best do, not do, Matthew Sweetenham.....	0	10	0

Best two years old heifer, Evan Macdonald.....	1	0	0
Second best two years old do., R. & W. Martin.....	0	10	0
Best yearling do., Wm. Thringl.	1	0	0
Second best do. do., John Howitt.	0	10	0
Best Yoke of Oxen, Wm. Parker.	2	10	0
Second best do. of do., Joseph Parkinon, Jun.....	1	5	0
Best do. 4 years old Steers, James Peters.....	2	0	0
Second best do., 4 years old, do. John Howitt.....	1	0	0

SHEEP.

Best Leicester Ram, S. Proudfoot.	2	0	0
Best pair do. Ewes, John Smith..	2	0	0
Best South Down Ram, Walter King.....	2	0	0
Best pair do. do. Ewes, J. Howitt.	2	0	0
Best 3 Ewes, not thorough bred, James Ross.....	2	0	0
Second best 3 Ewes, not do., Jas. Cowan.....	1	0	0
Best 4 Lambs, not do., Joseph Parkinon, Esq.....	1	0	0
Second best 4 do., not do., John McNaught.....	0	10	0

HOES.

Best imported Boar, J. Marland..	2	0	0
Second best do. do., J. Morning..	1	0	0
Best do., Sow, John Harland.....	2	0	0
Second best do. do., R. Greet....	1	0	0
Best Sow, not thorough bred, Mr. Card.....	1	0	0
Second best do., not not do., W. G. Parker.....	0	10	0
Best pair o' Spring Pigs, E. A. Harland.....	1	10	0
Second best pair of do. do., John Harland.....	0	10	0

CALVES.

Best Calf, J. G. Husband.....	1	10	0
Second best do., W. G. Parker....	1	0	0

A premium of £2 10s., was awarded to S. Proudfoot, for having raised more Lambs, in proportion to his flock of Ewes, than any of his competitors, he having raised thirty-five Lambs from nineteen Ewes.

HEMP CULTURE—AND DAIRY FARM.

We have frequently brought the subject of cultivating a small parcel of ground with hemp for experiment, before our readers, and we fear our suggestions have not been acted upon, and neither will be, unless encouragement be given by the Government to its growth, by awarding premiums for the best samples, giving the greatest return from a certain quantity of ground. We must acknowledge that the experiment has been tried, and the results have been so far unsatisfactory, owing to the infancy of the colony when the experiment was made and the peculation of the individuals to whom its management was entrusted. The failure was not in its growth, or unsuitableness of climate for its culture, but may be attributed to the above cause and the unskilfulness of the managers in the rotting and dressing.

We have, the last summer, grown two rods of this plant within a few miles of this City, and feel well satisfied that it would make a most profitable crop for the cultivators of the soil, under certain restrictions, viz: in the Eastern portion of the Province, where wheat has become a total failure within the last few years; in sections of Western Canada, where winter wheat can-

not be grown with success; without a great outlay for drainage; and lastly, and not least, in the back townships and neighbourhoods so remote from market, that wheat and other staples cannot be grown with profit.

If it were possible to initiate the hardy backwoodsman into the practice of growing and dressing a portion of hemp and flax yearly, as an article for export, the remote settlements might be made as profitable as those laying contiguous to market. These plants exhausts the soil fully as much as wheat, and unlike the latter plant, gives no return to the soil. The intelligent agriculturist will clearly see the propriety of adopting, with his hemp and flax culture, a system of grazing. The two most profitable modes which presents themselves to the farmers of British America, under "Sir Robert Peel's Corn Law," are grazing horned cattle, to be converted into cured beef, for the British market, and directing more attention to the products of the dairy. To the latter, we would draw the attention of our farmers particularly—as we conceive it will, ere long, be a profitable business, owing to the differential duties in favour of the colonies, and the great probability that the Legislature will levy a scale of duties on the United States dairy products, commensurate with the importance which the subject demands. It is a source of regret with us that the dairy has been almost totally neglected in Canada. Instead of having a surplus of dairy produce, thousands of pounds in specie have been sent to the United States annually for this article. We know of only three gentlemen in Canada West, that are engaged extensively in this business; the one a Scotchman—who has become independently rich—the other two Americans, who are in easy circumstances. We were assured by one of the latter gentlemen, a few weeks since, that although the price of cheese was extremely low, it was the most profitable business that the farmers in Canada could turn their attention.

We have asserted that the hemp culture, in connection with the dairy business, might be made a most profitable employment for the backwoodsman. To illustrate the subject, let us give a practical example. Suppose a new settler may have brought sixty acres of his bush farm into cultivation, and had sown down forty acres with English grasses with his first crop, which would be wheat; two thirds of which might be allotted for pasture grounds for twenty-five milch cows of good quality, and the remaining one-third to meadow. Six or eight acres of the remaining twenty might be cultivated properly with either hemp or flax, and the remainder to bread stuffs, oats, roots, &c., for domestic purposes.

The produce of our supposed backwoodsman, in ordinary seasons, would be as follows:—His milk cows would produce, during the five summer months, 2,500 lbs. of butter, or 3,300 lbs. of cheese. The price per hundred pounds of each, may be safely reckoned at £2 10s.,—being for the former

£62. 10s., and the latter £83. 10s. The price at which we rate the article does not exceed the average for the last fifteen years, and the quantity might be doubled, if the cows were of good quality, and the food abundant. We think we have now shown that our supposed settler, may have realized the nett sum of £33. 10s. if engaged in the manufacture of cheese. It will be for us next to return to the subject with which we introduced this article, and examine the profits of the lot of eight acres which we allotted for the growth of hemp or flax.—The produce in fibre, from the above quantity of ground migh. be rated at three tons, which would require the labour of one man for four months to dress it and preparo it for market. The Warden of the Provincial Penitentiary, at Kingston, employs a number of convicts in manufacturing ropes, the raw material being Russian growth, purchased in the English market, at prices varying from £35. to £50. per ton. So that no obstacle lies in the way to hinder the Canadian farmers of trying the experiment at once, as a good return and sure and profitable markets are inevitable.

Three tons of hemp, at a certain price of £35. per ton, would equal £105. Added to the product from cheese equal £188. 10s. Although the labour of rotting and dressing the three tons of hemp for market, may at first sight appear a task too heavy too be borne; yet it must be remembered that one man and a boy of 12 or 14 years of age, can do the whole work of such a farm as above described, with more care than the ordinary management of similar farms. The water-rotting is, perhaps, the most difficult part of the operation, but a plan may be devised by which the difficulties may be pretty much obviated. We will advise our readers on this part of the subject, when we have made a few experiments ourselves upon its practicability. The whole of the produce of a farm, managed as above, may be brought a distance of seventy or eighty miles to market, in the winter season, with a comparative trifling cost.

As we intend to give the subject of dairy farming and hemp culture due attention in future numbers of *The Cultivator*, we recommend the class of farmers to whom we first alluded, to purchase seed the present winter, so that they may make a few trials and prove its adaptedness to their soil.—We will endeavour to answer satisfactorily any inquiries that may be made, and give such information as may be suited to the wants and wishes of our readers.

By way of establishing a good example, we intend to sow, in a proper manner, not less than two acres the ensuing spring, and will in due time give a detailed account of its management, with profit and loss.

There are on the Grand River, upwards of 50,000 acres of the best land in the world, and peculiarly adapted for the growth of hemp and flax. We look forward to the day—which we flatter ourselves is not far distant—when hundreds of these broad acres will be cultivated with these plants. Canada might almost supply the demand of the British market with hemp in its raw state, if proper instruction and encouragement were given to her settlers.

ANIMAL CHEMISTRY.—BY PROFESSOR LIEBIG.

WE shall occasionally give selections from this most interesting work. We think it would be very desirable that agriculturists should make themselves acquainted with animal economy, and that it is a subject well deserving their study. We are not acquainted with any work better calculated to enlighten them on this subject than that of Liebig. The following extract is from PART I. :—

“Two animals, which in equal times take up by means of the lungs and skin unequal quantities of oxygen, consume quantities of the same nourishment which are unequal in the same ratio.

The consumption of oxygen in equal times may be expressed by the number of respirations; it is clear that, in the same individual, the quantity of nourishment required must vary with the force and number of the respirations.

A child, in whom the organs of respiration are naturally very active, requires food oftener than an adult, and bears hunger less easily. A bird, deprived of food, dies on the third day, while a serpent, with its sluggish respiration, can live without food three months and longer.

The number of respirations is smaller in a state of rest than during exercise or work. The quantity of food necessary in both conditions must vary in the same ratio.

An excess of food is incompatible with deficiency in respired oxygen, that is, with deficient exercise: just as violent exercise, which implies an increased supply of food, is incompatible with weak digestive organs. In either case the health suffers.

But the quantity of oxygen inspired is also affected by the temperature and density of the atmosphere.

The capacity of the chest in an animal is a constant quantity. At every respiration a quantity of air enters, the volume of which may be considered as uniform; but its weight, and consequently that of the oxygen it contains, is not constant. Air is expanded by heat, and contracted by cold, and therefore equal volumes of hot and cold air contain unequal weight of oxygen. In summer, moreover, atmospheric air contains aqueous vapour, while in winter it is dry; the space occupied by vapour in the warm air is filled up by air itself in winter; that is, it contains, for the same volume, more oxygen in winter than in summer.

In summer and in winter, at the pole and at the equator, we respire an equal volume of air; the cold air is warmed during respiration, and acquires the temperature of the body. To introduce into the lungs a given volume of oxygen, less expenditure of force is necessary in winter than in summer; and for the same expenditure of force, more oxygen is inspired in winter.

It is obvious, that in an equal number of respirations we consume more oxygen at the level of the sea than on a mountain.—The quantity both of oxygen inspired and of carbonic acid expired, must therefore vary with the height of the barometer.

The oxygen taken into the system is given out again in the same forms, whether in summer or in winter; hence we expire more carbon in cold weather, and when the barometer is high, than we do in warm weather; and we must consume more or less carbon in our food in the same proportion; in Sweden more than in Sicily; and in our more temperate climate a full eighth more in winter than in summer.

Even when we consume equal weights of food in cold and warm countries, infinite

wisdom has so arranged, that the articles of food in different climates are most unequal in the proportion of carbon they contain. The fruits on which the natives of the south prefer to feed do not in the fresh state contain more than 12 per cent. of carbon, while the bacon and train oil used by the inhabitants of the arctic regions contain from 66 to 80 per cent. of carbon.

It is no difficult matter, in warm climates, to study moderation in eating, and men can bear hunger for a long time under the equator; but cold and hunger united very soon exhaust the body.

The mutual action between the elements of the food and the oxygen conveyed by the circulation of the blood to every part of the body is THE SOURCE OF ANIMAL HEAT.

All living creatures, whose existence depends on the absorption of oxygen, possess within themselves a source of heat independent of surrounding objects.

This truth applies to all animals, and extends, besides, to the germination of seeds, to the flowering of plants, and to the maturation of fruits.

It is only in those parts of the body to which arterial blood, and with it the oxygen absorbed in respiration, is conveyed, that heat is produced. Hair, wool, or feathers, do not possess an elevated temperature.

This high temperature of the animal body, or, as it may be called, disengagement of heat, is uniformly and under all circumstances the result of the combination of a combustible substance with oxygen.

In whatever way carbon may combine with oxygen, the act of combination cannot take place without the disengagement of heat. It is a matter of indifference whether the combination take place rapidly or slowly, at a high or at a low temperature; the amount of heat liberated is a constant quantity.

The carbon of the food, which is converted into carbonic acid within the body, must give out exactly as much heat as if it had been directly burnt in the air or in oxygen gas; the only difference is, that the amount of heat produced is diffused over unequal times. In oxygen, the combustion is more rapid, and the heat more intense; in air it is slower, the temperature is not so high, but it continues longer.

It is obvious, that the amount of heat liberated must increase or diminish with the quantity of oxygen introduced in equal times by respiration. Those animals which respire frequently, and consequently consume much oxygen, possess a higher temperature than others, which, with a body of equal size to be heated, take into the system less oxygen. The temperature of a child (102°) is higher than that of an adult (95.5°).—That of birds (104° to 105.4°) is higher than that of quadrupeds (98.5° to 100.4°) or than that of fishes or amphibia, whose proper temperature is from 2.7° to 3.6° higher than that of the medium in which they live. All animals, strictly speaking, are warm-blooded; but in those only which possess lungs is the temperature of the body quite independent of the surrounding medium.

The most trustworthy observations prove that in all climates, in the temperate zones as well as at the equator or the poles, the temperature of the body in man, and in what are commonly called warm-blooded animals, is invariably the same; yet how different are the circumstances under which they live!

The animal body is a heated mass, which bears the same relation to surrounding objects as any other heated mass. It receives heat when the surrounding objects are hot-

ter, it loses heat when they are colder than itself.

We know that the rapidity of cooling increases with the difference between the temperature of the heated body and that of the surrounding medium; that is, the colder the surrounding medium the shorter the time required for the cooling of the heated body.

How unequal, then, must be the loss of heat in a man at Palermo, where the external temperature is nearly equal to that of the body, and in the polar regions, where the external temperature is from 70° to 90° lower.

Yet, notwithstanding this extremely unequal loss of heat, experience has shown that the blood of the inhabitant of the arctic circle has a temperature as high as that of the native of the south, who lives in so different a medium.

This fact, when its true significance is perceived, proves that the heat given off to the surrounding medium is restored within the body with great rapidity. This compensation takes place more rapidly in winter than in summer, at the pole than at the equator.

Now, in different climates the quantity of oxygen introduced into the system by respiration, as has been already shown, varies according to the temperature of the external air; the quantity of inspired oxygen increases with the loss of heat by external cooling, and the quantity of carbon or hydrogen necessary to combine with this oxygen may be increased in the same ratio.

It is evident that the supply of the heat lost by cooling is effected by the mutual action of the elements of the food and the inspired oxygen, which combine together.—To make use of a familiar, but not on that account a less just illustration, the animal body acts, in this respect, as a furnace, which we supply with fuel. It signifies nothing what intermediate forms food may assume, what changes it may undergo in the body, the last change is uniformly the conversion of its carbon into carbonic acid, and of its hydrogen into water; the unassimilated nitrogen of the food, along with the unburned or unoxidized carbon, is expelled in the urine or in the solid excrements. In order to keep up in the furnace a constant temperature, we must vary the supply of fuel according to the external temperature, that is, according to the supply of oxygen.

In the animal body the food is the fuel; with a proper supply of oxygen we obtain the heat given out during its oxidation or combustion. In winter, when we take exercise in a cold atmosphere, and when consequently the amount of inspired oxygen increases, the necessity for food containing carbon and hydrogen increases in the same ratio; and by gratifying the appetite thus excited, we obtain the most efficient protection against the most piercing cold: A starving man is soon frozen to death; and every one knows that the animals of prey in the arctic regions far exceed in voracity those of the torrid zone.

In cold and temperate climates, the air, which incessantly strives to consume the body, urges man to laborious efforts in order to furnish the means of resistance to its action, while, in hot climates, the necessity of labour to provide food is far less urgent.

Our clothing is merely an equivalent for a certain amount of food. The more warmly we are clothed the less urgent becomes the appetite for food, because the loss of heat by cooling, and consequently the amount of heat to be supplied by the food, is diminished.

If we were to go naked, like certain savage tribes, or if in hunting or fishing we

were exposed to the same degree of cold as the Samoyedes, we should be able with ease to consume ten pounds of flesh, and perhaps a dozen of tallow candles in the bargain, daily, as warmly clad travellers have related with astonishment of these people. We should then also be able to take the same quantity of brandy or train oil without bad effects, because the carbon and hydrogen of these substances would only suffice to keep up the equilibrium between the external temperature and that of our bodies.

According to the preceding expositions, the quantity of food is regulated by the number of respirations, by the temperature of the air, and by the amount of heat given off to the surrounding medium.

No isolated fact, apparently opposed to this statement, can affect the truth of this natural law. Without temporary or permanent injury to health, the Neapolitan cannot take more carbon and hydrogen in the shape of food than he expires as carbonic acid and water; and the Esquimaux cannot expire more carbon and hydrogen than he takes into the system as food, unless in a state of disease or of starvation. Let us examine these states a little more closely.

The Englishman in Jamaica sees with regret the disappearance of his appetite, previously a source of frequently recurring enjoyment; and he succeeds by the use of cayenne pepper and the most powerful stimulants, in enabling himself to take as much food as he was accustomed to eat at home. But the whole of the carbon thus introduced into the system is not consumed; the temperature of the air is too high, and the oppressive heat does not allow him to increase the number of respirations by active exercise, and thus to proportion the waste to the amount of food taken; disease of some kind, therefore, ensues.

On the other hand, England sends her sick, whose diseased digestive organs have in a greater or less degree lost the power of bringing the food into that state in which it is best adapted for oxidation, and therefore furnish less resistance to the oxidizing agency of the atmosphere than is required in their native climate, to southern regions, where the amount of inspired oxygen is diminished in so great a proportion; and the result, an improvement in the health, is obvious. The diseased organs of digestion have sufficient power to place the diminished amount of food in equilibrium with the inspired oxygen; in the colder climate, the organs of respiration themselves would have been consumed in furnishing the necessary resistance to the action of the atmospheric oxygen.

In our climate, hepatic diseases, or those arising from excess of carbon, prevail in summer; in winter, pulmonary diseases, or those arising from excess of oxygen, are more frequent.

The cooling of the body, by whatever cause it may be produced, increases the amount of food necessary. The mere exposure to the open air, in a carriage or on the deck of a ship, by increasing radiation and apourization, increases the loss of heat, and compels us to eat more than usual. The same is true of those who are accustomed to drink large quantities of cold water, which is given off at the temperature of the body, 98.5°. It increases the appetite, and persons of weak constitution find it necessary, by continued exercise, to supply to the system the oxygen required to restore the heat abstracted by the cold water. Loud and long continued speaking, the crying of infants, moist air, all exert a decided and appreciable influence on the amount of food which is taken."

TURNING IN GREEN CROPS.

Turning in green crops, is returning only to the soil the salts, silicates and geine, which the plant has drawn out of it, together with all the organic matter, the plant itself has elaborated, from oxygen and hydrogen, carbon and nitrogen, from whatever source derived. It has decomposed, during the short period of its growth, more silicates and salts than the air only could effect during the same period, which being turned in, restore to the soil from which they grew, salts and silicates in a new form, whose action on vegetation is like that of alkalies.—But powerful as are the effects of green crops ploughed in, it is the experience of some practical men, that one crop allowed to perfect itself and die where it grew, and then turned in dry, is superior to three turned in green. The whole result is explained by the fact, that dry plants give more geine than green plants do. Green plants ferment—dry plants decay. A large portion escapes in fermentation as gas, and more volatile products are formed than during decay. The one is a quick consuming fire, the other a slow mouldering ember, giving off during all its progress, gases which feed plants and decompose the silicates of soil.

The power of fertility which exists in the silicates of soil is unlimited. An improved agriculture, must depend upon the skill with which this power is brought into action. It can be done only by the conjunction of salts geine, and plants. Barren sands are worthless; a beat bog is little better; but a practical illustration of the principles which have been maintained, is afforded by every sandy knoll made fertile by spreading swamp muck upon it. This is giving geine to silicates. The very act of exposure of this swamp muck, has caused an evolution of carbonic acid gas; that decompose the silicates of potash, converts the insoluble into soluble manure, and lo! a crop. That growing crop adds its power to the geine. If all the long series of experiments under Von Voget, in Germany, are to be believed, confirmed as they are by repeated trials by our own agriculturists, it is not to be doubted that every inch of every sand knoll on every farm, may be changed into a soil in thirteen years, of half that number of inches of good mould.

That the cause of fertility is derived from the decomposing power of the geine, and plants, is evident from the fact that mere atmospheric exposure of rocks, enriches all soil lying near and round them. It has been thought among the inexplicable mysteries, that the soil under an old stone wall, is richer than that a little distance from it. Independent of its roller action, which has compressed the soil and prevented the aerial escape of its geine, consider that the potash washed out of the wall has done this, and the mystery disappears. The agents to hasten this natural production of alkali, are salts and geine. The abundance of these has already been pointed out in peat manure. Next to this, dry crops ploughed in; no matter how scanty, their volume will increase, and can supply the place of that swamp muck. Of all soils to be cultivated, or to be restored, none are preferable to the sandy, light soils. By their porosity, free access is given to the powerful effects of air. They are naturally in that state to which trenching, draining, and subsoil-ploughing are reducing the stiffer lands of England. Manure may as well be thrown into water as on land overlaid by water. Drain this, and no matter if the upper soil be almost quick-sand, manure will convert it into fertile arable land. The thin covering of mould, scarcely an inch in thickness, the product of a country, may be imitated by

studying the laws of its formation. This is the work of "Natures' prentice hand"; man has long been her journeyman, and now guided by science, the farmer becomes the master workman, and may produce in one year quite as much as the apprentice made in seven.—*Dana's Muck Manual.*

From *The Farmers' Journal.*

CABBAGE HEADS FROM STUMPS.

FRIEND COLE,—I do not know all that your Boston gardeners are up to, but I do know, that if cabbage stumps of any variety are set out in the spring in good order, that one, two, three, or even four good sound heads will grow on them—and this they will do year after year, until they die by accident.

They are managed in the following manner:—When the upper, narrow-leaved ones, which would bear seed, are carefully rubbed off, and likewise all the lower, round-leaved ones, which will form heads, except the number the strength of the stump and soil are capable of bringing to perfection.

At our Cattle Show, last week, Mr. John Drew presented several such stumps, with one to four heads of low Dutch cabbage on each, which have borne for three years. He sets them out in earth in the cellar in autumn, cuts off the heads when required for use, and places them pretty thick in the garden in spring. The labour is trifling, the cut worm gives no trouble, and the crop sure and abundant.

JAMES BATES.

Norridgewock, Maine,
October 18th, 1842.

METHOD OF CAUSING CABBAGES TO HEAD DURING THE WINTER.—In the fall of the year when it is time to gather cabbages, we always find more or less of them that have not formed any heads. They may have grown well, and have a large stock of leaves, but have not closed up in the form necessary to make a good, solid, compact cabbage.

William Vance, Esqr., of Readfield, has practiced for many years, the following method, which effectually closes these loose leaves in the course of the winter, thereby furnishing him with a supply of the best kind early in the spring. In the fall of the year, just before the ground closes up he gathers all the cabbages which have not headed together. He then digs a trench eighteen inches or more deep, and of sufficient width to admit the cabbages. He then closes the leaves together by hand, winding a wisp of straw or something else around them to keep them together, and then puts them in this trench, with heads down and roots up. He then packs straw or leaves and earth snug about them, and rounds up the earth over them. The trench should be dug in a place where the water of the rains and snows runs off and will not stand about them. A board or couple of boards nailed together, in the form of a roof, and put over the mound, may be useful.

In the spring of the year open your trench and you will find that the cabbages are all headed firmly together, and if the water has not got in, will be solid and hard. Mr. Vance has had the goodness to send us a few heads which he has formed in this way, which were very nice. By following this plan, we not only preserve the cabbages well during the winter, but save much of the crop which is not considered worth much.—*Ms. Far.*

A gentleman of Black Torrington has an otter that is quite domesticated, and so tame that it accompanies him about like a dog.—The animal is so under command, that it will go into the river, catch fish, and bring them out to his master.—*West of Eng. Couriers.*

BUILDING CISTERNS.

Every housewife in this country, especially those living off from streams, knows the value of soft water; and next to a well, which generally in the West gives limestone water, is a cistern needed. The following plan we take from the *Peoria Press*, which says such have been built there.—*Farmers' Journal*.

"The workman proceed to dig a circular hole or pit, of the desired capacity, at the place where a cistern is wanted, and shape it after the usual form of an earthen pot, which shape is deemed best adapted to give strength. Care should be taken to have the sides as regular and smooth as the ground will admit of. The plasterer comes next, to give it a coat of mortar made of hydraulic cement and clean sand, in proportion of about one of the former to two of the latter, wet with water to a suitable consistency. This is plastered immediately against the sides of the pit, beginning at the bottom and extending upward, and on the horizontal part of the offset to the perpendicular part. If the sides should be sand, it may give some trouble to the plasterer, which an expert workman can readily overcome, and if any part should cave a little, a few broken bricks or stones may be put in to hold up the sand or caving earth till the first coat is put on, which soon hardens and sustains the earth in its place. When this coat is sufficiently dry, of which the workman can judge, a second must be added, then a third, each about half an inch in thickness.—These render the sides perfectly secure against the caving of the earth, forming a powerful stone pot or cistern which hardens and strengthens with age and proper use. The roofing or covering is lodged upon the offset, and is usually made of two inch plank, leaving a suitable hole, with a square box open at each end, inserted in the centre where the water is to be drawn out. If the cistern is large, joists or other timbers are to be put across it to support the plank and earth about a foot deep. Before throwing the earth upon the plank, their joints must be secured with cement against the admission of dirt. This is, without doubt, the cheapest way of building cisterns, and may be practiced with success wherever they are wanted. One barrel of cement is sufficient for a cistern that will hold eighty barrels of water, and more when the earth can be smoothly dug down."

BROCK DISTRICT CATTLE SHOW.

The Cattle Show and Fair for this newly established District, took place in the town of Woodstock, on the 17th of September last, and would have been noticed by us in due time, had not the article we prepared been unavoidably crowded out. The stock on the ground—although not as good as we noticed in the Gore District—was nevertheless very creditable, particularly a few pens of sheep and swine. Much credit is due to a number of Gentlemen from the British Isles, who have purchased land and settled near the town of Woodstock, for the interest they take in agricultural improvement, which we saw most strikingly manifested in their farming operations. We have no doubt but the influence produced from their good examples, will be beneficially felt throughout the whole District. At the close of the Show, the members and friends of the Society sat down to a substantial and

well-served dinner, prepared by their host Mr. J. LOVE, of East Woodstock.

Several subjects of interest to the Society were introduced and discussed with ability. The subjects of sending to other districts for judges of Stock, and the contemplated Grand Provincial Show made a part of the evening's proceedings. Our attention was particularly drawn to these subjects; which will be commented upon in our next.

ADVERTISING COLUMNS.

It has been suggested to us that our Journal would be more interesting to the agricultural community, if a portion of its columns were devoted to advertisements. We have concluded to act upon the suggestion, and rely upon the kindness of our Agents and friends generally, to assist us in the undertaking. The advertisements will be restricted to the last Page of each number, and no display lines will be given.

THE BRITISH AMERICAN CULTIVATOR, having the widest and most extensive circulation of any journal published in the Province, will be found the best medium for advertising Improved Farms for Sale; Improved Breeds of Stock; Farming and Gardening Implements; Choice Varieties of Grains and Seeds, Select Fruit Trees, &c., and all other information that may be desirable to be made known to the most intelligent of the farming community. Our terms of advertising will be considered extremely low, when the unparalleled advantages which the circulation of our journal possess, are taken into account.

TO AGENTS.

We have issued a large edition of Circulars in the hope that they would be instrumental in bringing our Journal into general notice. We conceive it would be an advantage to have one placed conspicuously in every Mill, Country Store, and Hotel in the country. Our Agents will, therefore, do us a favour by informing us the number that each may require for the above purpose.

Persons authorized to receive Subscription for *The British American Cultivator* are—All Postmasters throughout British America—all Newspaper Publishers—and all Secretaries of Agricultural Societies.

In addition to the above, we kindly solicit all Country and Village Merchants, and Farmers having influence in their respective neighbourhoods, to procure Subscribers.

ACKNOWLEDGMENT.—We beg to acknowledge the receipt of an Agricultural Almanac illustrated with beautiful engravings, published at the office of *The Western Farmer and Gardener*, Cincinnati, Ohio.

We have to apologise for the nonappearance of the articles on Horticulture and Mechanism promised in our Circular.

Orders for THE CULTIVATOR will be received at the Star and Transcript Office; British Colonist Office; Wesleyan Book Store; J. Eastwood & Co.; Lyman Farr & Co. Druggists; James Wickson, Market Block; Richard Brewer and G. F. Payne, Bookbinders; George Leslie, J. F. Westland, and J. Fleming Gardeners and Seed Merchants, and Jno. Henderson, Merchant, Lot Street, West.

CONTENTS OF THIS NUMBER.

	PAGE.
To our Subscribers—Collieries—Making Candles.....	1
Poverty in the "Far West"—Page's Portable Saw Mills.....	2
Letters from the Shores of the Baltic—Capital required in farming—Wood Pavements.....	3
Improvement in draining land—Reasons why Agriculture should be supported—Prices of neat cattle and salted provisions in the British Market—Agricultural Report for Canada East.....	4
A good Cow—Poetry.....	5
Management of Fowls in cold weather—A Catechism of Geology.....	6
Milking Cows—Witham Agricultural Society—Saltpetre in Meat—A tropical climate—Rope Walks.....	7
Education—Mr. Evans' letter No. 1, on Agricultural Education.....	8
Leached ashes as a Manure.....	9
Reports on the different methods of making Cheese and Butter.....	10
Chronology of Improvements—To cure Hams—Important Invention—True Female Nobility.....	11
Comparative value of grey and white Plaster as a Manure—Guelph Agricultural Show.....	12
Heip Culture—And Dairy Farm.....	13
Animal Chemistry—By Prof. Liebig.....	14
Cabbage Heads from Stumps—To cause Cabbage to head during winter	15
Building Cisterns—Brock District Cattle Show—Advertising Columns.....	16

TORONTO MARKETS:

For the Month ending 21st December, 1842.

	s.	d.	s.	d.
Four Farmers', in barrels.....	15	0	a	16 3
Oatmeal.....per barrel.....	18	0	a	30 0
Wheat.....per bushel.....	2	9	a	8 9
Rye.....do.....	2	3	a	2 6
Barley.....do.....	1	3	a	1 6
Oats.....do.....	0	8	a	9 0
Pence.....do.....	1	4	a	2 0
Timothy.....do.....	3	2	a	3 6
Clover Seed.....do.....	39	0	a	35 0
Pork.....per 100lbs.....	0	12	a	12 3
Beef.....do.....	15	0	a	16 0
Mutton and Veal (qr.).....per lb.	0	23	a	0 34
Pork.....do.....	0	2	a	0 34
Butter.....do.....	0	8	a	9 0
Turkeys.....do.....	2	0	a	2 6
Geese.....do.....	1	3	a	1 0
Fowls, per pair.....	1	0	a	2 0
Dicks, per pair.....	1	8	a	2 0
Eggs, per dozen.....	0	9	a	1 0
Potatoes, per bushel.....	1	3	a	1 4
Hay, per ton.....	45	0	a	50 0
Straw, do.....	25	0	a	30 0
Salt, per barrel.....	10	0	a	11 3

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