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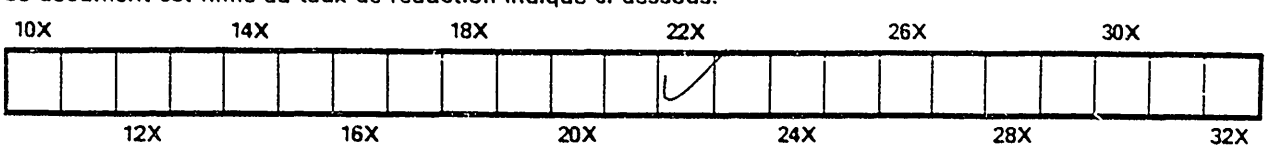

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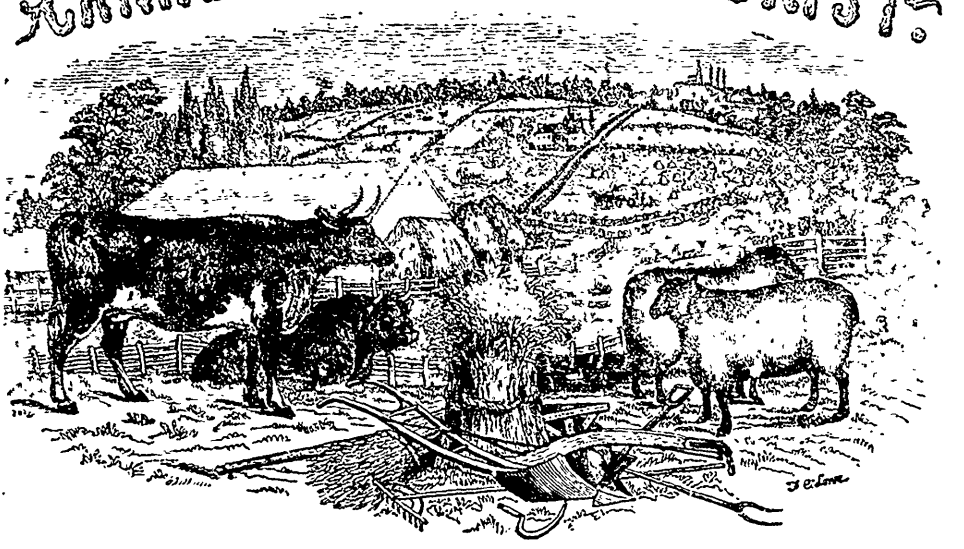

"The profit of the earth is for all; the King himself is served by the field."—Eccles. v. 9.


GEORGE BUCKLAND, WILLIAM McDOUGALL, } Editors and Proprietors.

VOL. I. TORONTO, NOVEMBER 1, 1849. No. 11.


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THE first volume of the *Agriculturist* being nearly completed, the Proprietors desire to address a few words to their Subscribers and the Public. For the support and literary assistance with which they have been favoured, they avail themselves of the present opportunity to render their grateful acknowledgments, and to express a hope that the same may be continued through another year. As the utility and profit of a paper of this character must mainly depend upon the extent of its circulation, and it being the wish of the proprietors to make this journal an efficient medium of communication between the districts of Upper Canada, on all subjects relative to agriculture, gardening, and the useful and domestic arts, they have determined on reducing the price, to Clubs and Agricultural Societies ordering 25 *Copies, directed to one address*, to Half a Dollar per Annum. This offer is made distinctly on the condition that a sufficient number of Subscribers shall be obtained, to guarantee the proprietors from a *direct pecuniary loss*. If the number should fall short of that point, the alternative will be adopted of reducing the size to 24 pages. To this the proprietors would be sorry to resort, since original matter, connected with and illustrative of the agricultural, manufacturing, and other industrial interests of the Province, is likely to increase in their hands, and therefore, instead of diminishing, they would rather increase the size of the publication. It is intended to make a proposal to the Directors of the Provincial Association, at their meeting in February next, to insert their reports and transactions; and it is believed that, if this enterprise is supported by the country, as its importance and utility appear to deserve, the *Agriculturist* may be placed in a position both remunerating and permanent, at the reduced price above proposed. No travelling agents will be employed, as the proprietors have found that such a system, with a paper so cheap as the *Agriculturist*, is certain to entail a pecuniary loss.

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Toronto, November 3, 1849.

THE

# CANADIAN AGRICULTURIST.

VOL. I. TORONTO, NOVEMBER 1, 1849. No. 11.

## ADDRESS OF H. RUTTAN, Esq.

PRESIDENT OF THE AGRICULTURAL ASSOCIATION OF UPPER CANADA,

*Delivered at Kingston, Sept. 20, 1849.*

GENTLEMEN,—It has become a custom (copying after the usage in similar institutions in Europe and the United States) to exact from the president of the association, an address, to be formally delivered at our annual meeting.

In fulfilling this duty to-day, it is not my intention to inflict upon you a long dissertation upon the science of agriculture, much less to discuss the abstruse subject of chemistry as applicable to this important art. Indeed had I the temerity, surrounded as I am by such an array of talent and erudition to grapple with these subjects, I should consider their discussion by me as out of place upon an occasion like the present. A few practical and very general remarks are all that can be expected at such a time.

My intention, therefore, is merely to take a glance at a few prominent and general features of the state of the crops for the present year, so far as I have been enabled to judge of them, and to make some suggestions as to the feasibility of varying and extending our farm productions. I shall also revert to a few incidents in the early settlement of the country—especially as they bear upon the state of agriculture from that period down to the present time—and of the prospects which are before us in our efforts for the future; and if I cannot find matter for much congratulation in the farming history of the province for the last twenty or thirty years, I hope I shall not give offence in honestly saying so—nor be deemed presumptuous in attempting to point out a course for the future, through which alone, in my own opinion, we can attain a state of prosperity, wealth and contentment. I shall also, I trust, be excused for adapting my remarks more especially to the farmers in the immediate neighbourhood of whom this exhibition is held.

So far as I have been enabled to learn, the wheat crop has, during this season, been rather over than under the average of the last five years. Most kinds of spring grain, as also hay, have evidently fallen short of an average crop—especially on the heavy clays around the bay of Quinte—and a scarcity may be depended upon.

Indian corn, which I consider as standing next to wheat in point of importance, I am happy to see, is, after a lapse of more than twenty years, again coming into general cultivation; and I hope that, by the blessing of Providence in ordering the seasons, whose alternations have so long deprived us of this valuable plant, we shall again see surrounding our barn-yards and out-houses, the old-fashioned corn crib. Peas, rye and buckwheat, are not so generally grown as they formerly were, but oats have steadily increased in quantity, and so also has barley. The regular growing of turnips upon old land dates from the first general immigration of old-country people, about twenty-five years ago, and I am happy to see the cultivation of this valuable esculent becoming general amongst my own countrymen. The potato blight, which has caused so much distress in some portions of Europe, and has, more or less, affected every country where the growth of that root was known, has, we have reason to hope, exhibited symptoms of giving way, and this valuable root will once more fill the blank in our farm productions which it was wont to do. Our pork and beef are a better article than formerly, but it appears to me that there is not the quantity in proportion to our cleared land that there was. I attribute the falling-off in these articles, and in peas, to the decline of the lumbering business, which, except perhaps up the Ottawa and its tributaries, and the river Trent, is becoming unprofitable. From the year 1800 until about 1840, this business created and steadily maintained a ready cash market for those indispensable items of a lumberman's breakfast, dinner and supper; one proof amongst many, of the advantage of a home market for our produce. Rye is nearly out of cultivation in the upper part of the Province, and by the time that Father Matthew shall have gone his rounds will, I suppose, have received its final blow so far as regards its cultivation for whiskey; but as our old fields become exhausted this valuable grain must necessarily supply the place of wheat for food; for which purpose indeed it is no doubt a more healthy article. As it respects barley and oats, the quantity grown has steadily kept pace—the one with the immigration of old country people—the other with the increase of horses. The manufacture of pot-ashes and lumber, depending altogether upon the unbroken forests for their production, must, with those forests, recede and finally become annihilated; so that two out of the three staple productions of the Province can no longer, I think, be reckoned upon as sources of wealth to the country.

Butter and cheese have hitherto never received that general attention which both their importance, as well as the markets, have demanded. One

reason for this is, that in the absence of all manufactures, the consumption has not kept pace with the production, and they would not perhaps, hitherto, bear exportation. The wonderful revolution in production of the finer fabrics which constitute our wearing apparel, which has of late years taken place throughout the world, by means of cotton and the spinning-jenny, has all but annihilated the growth of flax, and has also seriously affected that of hemp.

Down to this time it is only to the staple productions that we have paid much attention. These staples have hitherto been—wheat, pork, lumber and pot-ashes. All the other productions of our soil have only occasionally and incidentally received attention, and could never hitherto be reckoned and depended upon as productions to offset against our importation of foreign goods; and in this lies the secret of our commercial embarrassment. If, then, we strike out of this already small catalogue—pork, lumber and pot-ashes, the former depending for demand upon the last two, and these again diminishing daily with the clearing up of our wild lands, we have but one left—*wheat*. And then, if we pursue this idea and reflect, that what with the lessening of the demand for home consumption by means of the decline in the manufacturing of lumber and pot-ashes, and the loss of protection in the English market, this our only staple article is reduced 20 per cent. in value, we may, without much difficulty, fix upon the value of our future prospects! And yet, in the face of these incontrovertible facts, we hear people wondering how it is that our commercial matters have got into so ricketty a condition—that our wholesale merchants are so largely indebted to the European manufacturer, our shop keepers to the wholesale merchants, and the farmers to the shop keepers.

That the country is enormously in debt we have every day the most irrefragable evidence—no man can shut his eyes to the fact. I estimate the mercantile indebtedness to be equal at least to that of the public debt—upwards of five millions of pounds! I do not mean to say, that the farmers alone *owe* this sum, but I mean to say that this 20,000,000 of dollars has all to be dug out of the ground by the farmers, with the exception of that part which the remnant of our lumbering and pot-ash establishments may yet meet—both of which are at present dwindling away, and will shortly become wholly insignificant. At least four-fifths of this sum are owing by the people of Upper Canada, and must be dug out of the ground by about two hundred and fifty thousand pairs of hands! Oh! for a few months in California! Not so, gentlemen, take my word for it, we will dig this out of our own mine much more easily than out of those of California. I repeat, that the whole of the amount for the payment of this debt must come out of the ground—it must be CREATED. Political economists, I know, differ somewhat on this point, but the difference consists in words merely. They do not understand each other. It is of great importance that every man who gets his living by the production of *food*, should never lose sight of this great and important distinction between his occupation and that of all other classes of the community—that he alone CREATES, and all the rest of the world ANNIHILATES. I shall not stop here to enter into a metaphysical discussion of this subject, but without an explanation of what I mean by this word "creation," as applied to the growers of food, I should not be sufficiently understood, and this explanation cannot better be given than in the following quotation of an experiment lately made.

Two hundred pounds of earth were dried in an oven, and afterwards put into an earthenware vessel; the earth was then moistened with rain water, and a willow tree weighing five pounds was placed therein. Care was taken to prevent the addition of fresh earth. After growing for five years, the tree was removed, and found to weigh one hundred and sixty-nine pounds three ounces. The earth was then removed from the vessel, again dried in the oven, and afterwards weighed; it was discovered to have lost only about two ounces of its original weight; thus, one hundred and sixty-four pounds of lignin or woody fibre, bark, roots, &c., were certainly produced—but from what source? This is what I mean by creation—and this is what the farmer does in the growth of all his crops. In an acre of wheat which will yield 45 bushels, he creates four tons out of the single bushel of wheat, weighing about 60 lbs., which he sowed! It is only by this operation that debts, strictly speaking, can ever be really discharged. This produce may, indeed, for the time being, be represented by bits of metal or bits of paper, but these representatives are a mere guarantee that this food shall be created and be forthcoming.

I have dwelt upon this, because, if we may judge from the actions of men, the farmer does not know the importance of the position which he holds amongst his fellow men; nor is the non-producing part of the community, which constitutes fully one-half of the population in this country, aware, it appears to me, of the extent of its obligation to the farmer.

To pay this enormous sum we must export 16,000,000 bushels of wheat, supposing we realise five shillings per bushel. Now, I do not think, that of Canadian wheat we have ever shipped from our sea ports much exceeding 3,000,000 bushels in any one year. So that five or six years must elapse before this debt would be paid, supposing we imported no more goods, and exported on an average not less than this quantity of wheat.

Do not let me be misunderstood here. In making these estimates, I do not pretend that they are based upon any certain data—they must necessarily be mere approximations; my principal drift is, to set before you some tangible matter for your serious consideration; because that our present position will require the serious consideration, and not only so, but the prompt and energetic *action* of the farmers of Canada; none but those who, having eyes and see not, ears and hear not, or hands and work not, can for a moment doubt or gainsay. Nor let me be censured for thus exposing our real situation to the world—to strangers, and many of those strangers foreigners perhaps.

The time has come in which it will no longer do to put off the evil day. The sooner we look our difficulties in the face, the sooner we shall be prepared manfully to meet them. Our debts must be paid, both public and private, and the one depends very much upon the other. Canadians must never *repudiate*. This is not a characteristic of any country under British rule. "Monarchy is honour," and we must not be the first to give the lie to this patriotic sentiment. The reason why several of the United States have refused to pay their public debts is not because they want the means—if it were, there would be some excuse, but it is because their public men in these States are dishonest, and do not tell the people the truth. It is, indeed, sometimes a most disagreeable duty, but he who shrinks from its performance is not fit to be placed in a responsible position. I perform this duty the less reluctantly to-day, standing as I am at this moment in the midst of those amongst whom I was born, and to whom I owe a large debt of gratitude, which, most probably, I shall never have another opportunity of discharging.

In 1815, at the close of the late war with the United States, our debts, both public and private, were, I may say, wiped out; the high prices which we obtained for our produce put us in fact "in funds," so that we are now at the winding-up place of about a period of 34 years. On an average, our commercial debt has increased from £100,000 to £150,000 a year, that is to say, we have *imported* to the amount of that sum more than we have exported—in other words, we have been living £150,000 a year above our means. In addition to the principal of our debt we have a tax to pay, in the shape of interest, equal to about £300,000 a year. Now, notwithstanding there are persons who will maintain that the payment of interest is no drawback upon the prosperity of a country, yet I am so old-fashioned as to think otherwise, and to denounce such doctrine as a most mischievous fallacy.

Upper Canada has been settled little more than sixty years; for the first half of this period we were *not* in debt, and if we look closely into the course we have pursued, we will find reasons for our change in circumstances. The man who finds himself in a labyrinth knows, that unless he can find his back-track—the exact road by which he got entangled, he can never expect to make his escape. So, in order to get rich, we must first find out how we became poor. I must, therefore, ask you to follow me in a short digression in adverting to the early history of the country—I mean the Upper Province.

I am myself one of the eldest born of this country, after its settlement by the loyalists, and well remember the time when, as Bishop Berkely observes, a man might be the owner of ten thousand acres of land in America and want sufficient means to buy himself a breakfast! One-half of the land on the Bay of Quinte, the garden of Canada, could, within my remembrance, have been purchased for £5 a two hundred acre lot, and many a one has been sold for a *half Joe*. All this cannot be matter of wonder, when I tell you that a great scarcity of provisions prevailed for two or three years consecutively, in consequence of failures in the crops, and what brought on the famine, or "scarce year," (about the year 1790, if I am not mistaken) was the almost entire destruction of the deer by the wolves for two consecutive years. The snow lay upon the ground from December until April, at the depth of four to five feet. In the month of February of the last of these years, a near relative of mine sent all the way to Albany in the State of New York, a distance of more than 200 miles, for four bushels of Indian corn! And this was brought all that distance by two men on snow shoes! It took them about eight weeks to accomplish this journey, and during this time about one-third of the quantity was necessarily consumed by the men; the residue of this precious cargo—pounded up in a mortar made of a maple stump, with the winter-green berry and mucilaginous roots, latterly boiled with a little milk—constituted the principal food for two families, consisting of seven souls, for the space of four or five months! It was remarked, I have heard some of the oldest of the settlers assert, that the usual supply of fish even had failed. The few cattle and horses which the settlers, at great cost and trouble, had collected, were killed for food. The faithful dog was, in several instances, sacrificed to supply that food which he had so often been the means of furnishing to his then kind, but now starving master. The famine this year was general throughout the Bay of Quinte; and such was the distress that, during this winter, several persons died from starvation. In the Hay-Bay settlement, one of the most heart-rending occurrences took place. Some time during the month of April, the husband and father was found buried in the snow, which lay upon the ground at an average depth of five feet, whilst within the shanty was exhibited the awful spectacle of the dying mother pressing to her bosom her dead infant, still in the position of attempting to gain that sustenance which its mother had for some time been unable any longer to afford it!

Here then was a state which one would think might appal the stoutest heart, and might, without subjecting this little band of heroes to the charge of a want of affection for the crown, have driven the remnant of them to seek, at the very earliest opportunity, an asylum from death, even amongst their implacable and cruel enemies. This it was in their power to have done the following year. Did they do so? No! These exiles—these emaciated and worn-out loyalists—preferred death, even though it came in the ghastly form of famine, to the fraternization with rebels to their king. Loyalty, with our forefathers, consisted of something more than a name. *They* did not stop even to weigh their *lives* with the crime of treason, much less did they calculate upon pecuniary advantages. Whilst the rebels had added robbery and murder to the crime of treason, these faithful and devoted subjects of the crown, although suffering in body, could lie down in their bark-covered shanties and upon their beds of straw and boughs, with a conscience void of

offence, and in the enjoyment of that peace and tranquility, which was a result of the performance of their duty—no less to God than to their King; whilst the traitors to their sovereign were revelling in the possession of the small properties from which they had been driven, but which must have been ashes in the mouths, and bitterness in the throats of these unhallowed fratricides.

The traitor to his Sovereign, at all times, no doubt, makes every effort to reconcile his conduct with his duty, and must, in self-defence, seek out reasons for justification; but alas! how weak must be all reflections against the cries of a justly alarmed conscience, which can never be quieted either by flattery or false arguments.

Providence now, about the year 1791, and about seven years after their first settlement, began to smile upon the arrangements of this small band of heroes. The winters began to assume a somewhat milder aspect—the wolves in their turn became a prey to the famine which by their own devastation amongst the deer, they had caused. The Indians who, about this time began to be very troublesome—keeping the settlers in a constant state of alarm and at every opportunity carrying off their cattle, were, either through some new treaty or otherwise, so propitiated by the government, that the settlers from this time began gradually to increase, though for some years but slowly, and generally to improve in their circumstances.

The social history of the old united empire loyalists of the Bay of Quinte, from their embarkation at New York in 1783, down to about the year 1820, when their *political* history commences, and which was the death knell to the state of real happiness and enjoyment upon which they were just entering, would form a curious as well as interesting episode in the history of Canada; but as I have already perhaps somewhat exceeded my licence upon the present occasion and trespassed upon your attention, I will pass on to those matters which more immediately concerned their agriculture.

Amongst the many liberal provisions, besides their allotments of land, which were made by that paternal Monarch Geo. III. of imperishable memory, to the U. E. Loyalists, I well recollect the old English plough. It consisted of a small iron socket whose point entered by means of a dove-tailed aperture, into the heel of the coulter which formed the principal part of the plough, and was in shape similar to the letter L, the shank of which went through the wooden beam, and the foot formed the point which was sharpened for operation. One handle and a plank split from the side of a winding block of timber, which did duty for a mould-board, completed the implement. Besides provisions for a year, I think each family had issued to them a plough share and coulter, a sett of drag-teeth, a log chain, an axe, a saw, a hammer, a bill-hook and a grabbing hoe, a pair of hand irons, and a cross-cut saw amongst several families, and a few other articles.

The trace ropes, leading lines, halters, bed-cords, &c., when they had arrived at that state of luxury which required bed-cords—were manufactured from the bark of the elm and basswood trees, which was peeled off in the spring of the year and water-rotted similar to flax, in order to separate the fibre from the rind. This material when properly prepared forms a strong, useful and cheap rope, and might at this day be manufactured and used with advantage, for most domestic and farm purposes. Many a day I recollect having assisted my father in his rustic rope-walk. The clevises and clevis pins as well as the drag teeth, when the old ones were worn out or lost, were frequently made of the hickory timber which, when I was a boy, abounded about the Bay of Quinte.

About the year 1808, the "hog-plough" made its appearance. This was an importation, and about the first from the United States. This plough was considered a wonderful invention. It consisted of a full iron share forming the front or rising part of the mould-board, the residue of which was still obliged to be made of wood. About the year 1815 the farmers generally fixed their attention upon the cast-iron share and mould-board, all cast in one piece, also an invention from the United States, but which we then began to manufacture ourselves, and it was indeed the first implement of any consequence to farmers, which we did manufacture within the Province.

From that time to the present, not a single year has passed over without an "improvement" in this important implement, until we have now a host of ploughs, harrows, cultivators, drills, potato diggers, scarifiers, clod crushers, rollers, cradling and mowing machines, hay-rakes and corn shellers, threshers, and a host of inventions—vieing with each other in the rapidity with which they are varied in form, shape, colour and character, to such a degree that they have almost become a nuisance to the farmer who desires to purchase a really useful article.

During all this period from 1783, with the exception of the "scarce years" the people lived happily and contentedly. Here and there a school would be started, to which the young men in winter would travel upon snow shoes for several miles. One winter's schooling was considered quite sufficient, and if a lad did not learn to write upon half a quire of paper including his pot-hooks and hangers, he was considered a dunce.

As it respected religion, the loyalists were all Protestants; of the descendants of the old Huguenot families who had originally colonised a considerable part of the Province of New Jersey, of which class were all my own immediate relations as well as a great number of the other loyalists—most of them were brought up in the faith of the Church of England. There were a few of the descendants from the Puritan stock, and a few who had been brought up under the teaching of Wesley and Whitfield. Old Dr. Stuart, the father of our venerable and much beloved Arch Deacon of Kingston, settled in this City which was then a little French village called Cataroque, and taking advantage of his missionary labours amongst the Mohawks of the Bay of Quinte, he instructed the inhabitants generally in the mode of husbandry, with which he had been familiar on the Mohawk River in the Province of New York. The itinerant system of Methodism, however, very soon brought the great

bulk of the settlers into that form of worship; and the labours of the early Methodist missionaries produced fruits throughout the Province, but especially on the Bay of Quinte, which are to this day manifest in the orderly walk and character of the people.

As it regards our mode of living, our food was coarse but wholesome. With the exception of three or four pounds of green tea a-year for a family, which cost three bushels of wheat per pound, we raised every thing we ate. We manufactured our own clothes, and purchased nothing except now and then a black silk handkerchief, or some trifling article of foreign manufacture of the kind. We lived simply, yet comfortably—envied no one, for no one was better off than his neighbour. Until within the last thirty years, one hundred bushels of wheat, at 2s. 6d. per bushel, was quite sufficient to give in exchange for all the articles of foreign manufacture consumed by a large family. We had no money except the old-fashioned Joe and Spanish milled dollar; we needed none. We were not rich, but we were emphatically a prosperous people; perfect contentment reigned throughout the land.

But now came pride. History is full of instruction as to the evils always attendant upon the introduction of wealth and pride into a poor country. After the late war, great numbers of the officers and other old-country gentlemen remained here. These having been accustomed to live like gentlemen in the old country, very naturally continued their old habits and customs in Canada; and making purchases and dispersing themselves throughout the various districts, the whole population has from that time to the present imbibed a propensity to extravagance in living, which has led to our present commercial embarrassment. The old-fashioned home-made cloth has given way to the fine broadcloth coat; the linsey-woolsey dresses of females have disappeared, and English and French silks substituted; the nice clean-scoured floors of the farmers' houses have been covered by Brussels carpets; the spinning-wheel and loom have been superseded by the piano; and, in short, a complete revolution in all our domestic habits and manners has taken place—the consequences of which are, the accumulation of an enormous debt upon our shoulders, and its natural concomitant, political strife; for who has ever heard of an embarrassed community being a peaceable one? The old aphorism, "when poverty comes in at the door, love flies out at the window," has as much force in our social constitution as in our domestic concerns.

Thus, gentlemen, I have endeavoured to give you a cursory glance at the rise and fall of Canadian farming-prosperity, and shall now with equal candour endeavour to point out a path by which we may at least arrest our downward course, and regain that position, both as a people and as individuals, which we have lost by extravagance and a want of the proper application of our industry.

I reduce the whole to four simple propositions:

1st, Reduce our expenses.

2nd, Cultivate less land.

3rd, Vary and increase the number of our farm products.

4th, Manufacture for ourselves.

The first step, then, is economy in our way of living. If we profess to be farmers, let us live like farmers. A man, his wife and daughter, are neither more comfortable nor more respectable in fine English broadcloths and French silks, than they would be in our own home manufactures: nay, is it not notorious that they are always *more* respected when dressed in home-made than in foreign cloths. I was almost a grown-up young man, before ever I knew that there were such articles as fine English and French goods. Time was, when our matrons and young women took pride in exhibiting—instead of concealing—their own articles of manufacture; aye, and when they were not ashamed to be found, during the haying and harvesting season, assisting their husbands, fathers and brothers. Neither did our farmers feel ashamed to be seen carrying to market the various minor productions of the farm, farm-yard or garden. *In those days, gentlemen, we were out of debt;* it was *then* considered disgraceful to owe more than they could pay. Is it considered so now-a-days? How many there are now, who would consider it quite derogatory to be seen in the old gray clothes, and attending personally in our markets the sale of these commodities. In *these* days, gentlemen, we are IN debt; and I will add *dishonestly* in debt—dishonestly, because we are actually living upon other people's money.

But, gentlemen, do not imagine that I am excusing the other classes of society—these are more to blame than the farmers.

In the early history of this country, we all held, in our mode of dress, equipage, furniture, &c., one station, as it were, and when we saw nothing to envy we felt no inferiority; but with the advent amongst the rural population of government officers receiving large salaries, gentlemen of good incomes, professional men, merchants, &c., came also pride and envy amongst the farming population, until the extravagance of which I have been speaking has been carried to such an extent as to attract the observation and excite the ridicule of the traveller through Upper Canada. It is this extravagance which has entailed upon the country disgrace, and upon hundreds of families dishonour and ruin. I should most willingly see the incomes of all professional men, including all public officers, reduced to one-half their present amount, if it were for nothing else than for the benefit which would in consequence accrue to the farming interests of the country.

I am not willing to be, nor do I think I shall be, understood, in the observation which I have now made, as refusing to the professional man or the public officer a competent income; but I do wish to be understood as expressing a settled conviction that the extravagant salaries and incomes to a few have been the remote cause of the present deplorable state of indebtedness of the country, and consequently the primary cause of the depression and derangement in our commercial affairs, at this moment in existence.

The second evil to the prosperity of farmers,

arises, in my opinion, out of their occupation of too much land. In the early settlement of the country, this could have no injurious effect; but after a few years, instead of bringing under a proper state of cultivation the fields which had been already cleared, the strife between neighbours consisted in the quantity of *new* land which they would sow, and from that to the quantity which they were able to own; and this led to imprudent speculations in purchasing wild lands, to be held over for their families: thus setting a bad example to those around them—saddling themselves with heavy debts, the effects of which are at this moment pressing many a man to the ground. The origin, however, of this mischief lies in the mistaken though paternal intentions of good old George the Third, in causing the allotments to the U. E. Loyalists to be two hundred acres each. If only one hundred or even fifty acres had been the quota, I am fully persuaded that we should this day have seen a very different face upon the country.

We have now the most indubitable proof, that the aggregate production of any agricultural country or district is increased with the subdivision of the land. That the accumulation of large tracts of land in the hands of a few persons, is injurious to every agricultural country where it is permitted, we have not only our own experience to convince us at this day, but also the experience of the old world. It is recorded in the old testament, that the landed estates both of the kings and some of their subjects were large; for we read that Uzziah, king of Judah "had much both in the plains and in the low country; husbandmen also, and vine-dressers in the mountains and in Carmel, for he loved husbandry"; that Elijah found Elisha with twelve yoke of oxen at the plough, himself being with the twelfth yoke; and that Job, the greatest man of the east, had fourteen thousand sheep, six thousand camels, one thousand yoke of oxen, and one thousand she-asses. And such, it appears, had been the accumulation of landed property in the hands of a few proprietors, in the time of Isaiah, that that prophet was inspired to utter a curse against its engrossment: "Wo unto them that join house to house, that lay field to field, till there be no place, that they may be placed alone in the midst of the earth."

The third suggestion is, that we vary and increase the number of our products.

The principal article of produce for exportation upon which we have hitherto depended, is wheat. We are yet, it is true, making lumber to some extent up the Ottawa, the river Trent, and a few other places in the Upper Province, yet it is evidently dwindling into insignificance, and what is made yields now little profit. It is also true, that within the last few years a considerable traffic in sawed lumber has been carried on with the United States; but it strikes me that, although this affords a present relief, it will result in an actual impoverishment of the country. We are, so far as this article goes, living, in fact, upon the proceeds of a post-obit upon posterity. At any rate, we are paying the United States for their privilege of exporting timber and wheat, in the shape of duties, about half a million of dollars a-year! But, gentlemen, there is nothing like free trade!—we certainly have the option to pay this or let it alone.

Wheat, then, having always been—and being now, indeed—the staple and principal article of export, upon which we can in future rely, its cultivation, undoubtedly, is of the very first importance to Canada. I hope, therefore, that I shall be excused, in so far departing from my original design, as to take a hasty glance at a few prominent points in the process of its cultivation.

The origin of wheat cannot be traced out. The general opinion seems to be, that it has been produced from the cultivation of a mere grass. It is quite certain that its cultivation was very general one thousand years before the Christian era; for it is stated in the 27th chapter of Ezekiel, that "Judah traded in wheat of *Minnith*." But it is stated, that from the passage, "in the sweat of thy face shalt thou eat bread," it may be inferred that it was coeval with creation. However this may be, we know that it is the most valuable plant known to man; and that from the beginning of its known cultivation, this cereal has been the principal object of the husbandman's solicitude. The Romans enumerate thirty varieties, and at this day there are hundreds. May it not be that, inasmuch as we know that the number of varieties has increased, and that so far as we are enabled to trace it up, the quality has improved; that by the aid of science, such a revolution in its production may ere long take place, as will, either in quantity or quality, or both, increase its value to an extent which at present it is impossible to estimate; and so also with other cereals.

One of three things—so far as human judgment can divine—must take place: either the earth must yield more food for man, or war, pestilence and famine must thin the human race; or else the Malthusian plan of preventing the propagation of the species must be carried out. We need not place much dependence upon the last of these, but war, pestilence and famine have for some time been, and are now, rapidly sweeping off the human race. That the culture of wheat, in the United Kingdom especially, has within a very few years been much improved, we have sufficient evidence in the fact, that even with the annual increase of the population, the importation of foreign grain has decreased, and is continually decreasing; so that by the aid of science, and consequent improved systems of husbandry, it is consolitary to know that under a fast-increasing population, the dependence on a foreign supply for bread is continually growing less. A very erroneous impression is abroad with respect to the dependence of Great Britain upon the United States for bread. The fact is, that whilst Great Britain imports ordinarily twenty millions of bushels of foreign corn, only two millions come from the United States. I do not take into this account the last two or three years of unusual scarcity, arising chiefly from the potatoe failure.

The cause to which the increase of production is mainly attributable, is the small farm and allotment system, which has been lately making its way rapidly in public favour. The small farmers

are those who rent from five to ten acres; the allotments to servants are from half-an-acre to two acres; and whilst the clear money profit of these small farmers has averaged double that of the large farmers, the small allotments have doubled upon the small farmers.

Mr. Colman, who has lately returned to the United States from a tour of observation upon European agriculture and rural economy, gives numberless instances where the single acre in the hands of a farm servant has produced, clear from all disbursements, £20 sterling, besides provisioning the labourer and his family! And Mr. Colman remarks upon the whole:—"We have," he says, "in the United States, beyond question, a large number of farmers who, if they would cultivate, to the utmost of its capacity, a small extent of land in the most thorough manner, would find themselves comparatively independent; whereas now, without capital, spending their deficient labour over a large surface, and doing nothing thoroughly, they lead a life of vexation, toil and disappointment, without any compensating result." Mr. Colman gives several instances in which the small farmers have grown from sixty to eighty bushels of wheat upon an acre; and the weight of potatoes and other roots is really incredible—from upwards of thirty to forty tons per acre.

But time demands that I should hasten on to the other parts of my subject. I shall therefore, in reference to the fecundity of wheat, conclude with an extract from an address delivered before the Erie County Agricultural Society, by Dr. Lee, an extensive practical farmer, and also a member of the legislature of the State of New York.

"You all know," he says, "that a single kernel of wheat will sometimes, when its fecundity is highly stimulated, send up twenty stalks, and that each stalk will bear a head containing one hundred kernels. Here is a yield of two thousand fold. Nature, then, has rendered it practicable to harvest two thousand bushels of good wheat from one bushel of seed. The most sceptical among you will not deny, that two thousand kernels have been produced from one kernel, and that the same natural causes that produce such a result in one instance, will ever operate at all times, under like circumstances in the same manner. Hence it is but reasonable to say that nature is quite as willing to produce fifty bushels of good wheat on an acre of ground every year—mark me—*if her laws be obeyed*, as she is to grow fifty bushels of weeds every year on the same ground."

A great part of Upper Canada is but now in a state of transition from a new to an old country; and it is not surprising that upon a virgin soil, our chief attention has been bestowed upon the growth of wheat; the culture of which having been attended with little trouble, comparatively, and less skill. Nor can it be wondered at that, when a whole people have for sixty-five years, as in this province, steadily followed in one track, some difficulty will be experienced in persuading them at once into the adoption of a new system. But, gentlemen, notwithstanding that old prejudices are great stumbling-blocks to improvements, the time has come, in my opinion, in which we must learn something new. We must turn our attention to those productions which, hitherto, have been erroneously considered of little or no importance. And especially must we be convinced of this, now that that protection which we have hitherto enjoyed is withdrawn, and we are left to compete with the world. Nor is it probable that this boon will be restored to us, so long as the manufacturing interests of the mother country maintain that ascendancy over the agricultural interest, which, after a lapse of several ages, and after a struggle for mastery which is unparalelled in the history of any country, it has now attained. Agriculture and manufactures will work harmoniously together and with great advantage to each other, so long as the people have bread; but the moment that food fails, a struggle must ensue; and the issue of any *such* struggle cannot long remain doubtful. It is the struggle for bread against the wish for a garment; the one involves a matter of life and death—the other, merely a coat of finer or coarser texture.

Manufactories are not universal—the production of food is—those are local in their establishment and coeval and co-extensive only with pride and luxury, and therefore of no importance as compared with the production of food, which must ever be co-existent with the life of man. This must, therefore, ever stand at the head of all establishments; and especially of every country that would be a prosperous one. Whenever and wherever it is otherwise, there may be pride and luxury, but not peace and contentment—riches, but not prosperity. One cannot help seeing that wealth, and prosperity are not always co-incident; that wealth is not, therefore, the infallible index of prosperity. In many cases—and it must be so in all countries in which their agricultural interests are secondary to those of their manufacturing—the extraordinary accumulations of wealth on one side are followed by a corresponding depression on the other; while the rich are made richer, the poor are made poorer. In the richest communities the price of labour is always the most depressed; and with the increase of manufactories—where they are carried to a luxurious extent—the desire of indulgence is quickened in all classes.

My opinion, therefore, is, that whilst manufactories are injurious to any country in which they obtain a predominance, they are indispensable to the prosperity of every civilized country, in which they are not permitted to exceed those bounds which involve the necessity of looking to foreign countries for food.

I have stated, that we must in the article of wheat now compete with the whole world. The question is, can we do so, either in the United States or Canada? I fearlessly answer, *we cannot.* No man need tell me that the wheat-grower, in any part of the American continent—whose cost for labour, including provisions, amounts at least to eight times as much as it does, on an average, in Europe, a great part of which is even better adapted, as it respects both soil and climate, to the growth of this plant; and who is, moreover, obliged to pay double the freight and insurance for the transport of his produce—can compete, in

the market of Great Britain, with the European foreigner. It is worse than folly to think of such a thing; and whoever endeavours to persuade you to the contrary, is only flattering you, unintentionally perhaps, to your own injury. What then is to be done?

I answer, manufacture yourselves those things, for the payment of which you are now obliged to send your produce to a foreign market—strike off one half of your expenses in living—turn your attention to the production of butter, cheese, wool, flax, hemp and tobacco, and many minor productions, to which we now pay little or no regard; and, after we have produced them, see ourselves to their being properly marketed. Let us, in this respect, take a leaf out of the books of the old-country farmers, who are settled amongst us, and who, in many instances, have risen from a state of indigence to one of affluence and wealth.—They have learned a great deal from us; let us not be ashamed to learn something from them.

I have no objection to see a proper jealousy between my own country people and those from the old countries; this is upon the whole to be regarded as rather beneficial than otherwise. It clearly evinces an awakened curiosity and ambition to emulate. A jealousy arising from a laudable ambition only, is much more desirable than a total indifference and apathy, which are ever the invariable offspring of an invincible ignorance.

Until within the last few years, the Canadian had little or no occasion for the application of science in his farming operations; he has had the original or virgin soil only to work upon, which in general requires but one process; hence it is, that in those parts of Upper Canada, which have been long cleared, and are rendered susceptible of the application of scientific management, the old countryman looks with pity, I may almost say contempt, upon the system followed by the Canadian—whilst in other parts of the country the Canadian is indescribably amused by the doleful and awkward appearance of the old countryman, set down upon a hundred acre wild lot, with his long-billed axe attempting to cut down his first tree, or expending his labour and means in grubbing up stumps!

I have made these few remarks in reference to the two classes of people, in order to shew, that the supposed superiority of the one over the other has in fact no foundation whatever; for it is clear, that the one without the other could not, for generations to come, make this, what it is *now* shortly destined to become, a great farming country.

The *philosophy* of farming, if I may use the term, lies, in my humble opinion, less in the *amount* of crop, than in the "*keeping up*" of the land. A man, either from his own experience, or the experience of others, should be enabled to judge what work his land can bear, in the same way that he would learn what labour his horse is enabled to undergo. Different soils require different modes of cultivation; this every man knows; but every man does not know *what* these different modes are: and the man who is content to drudge on as his father has done before him, without looking either to the right or to the left for information, may, and there are many who do, it is melancholy to think, live out a long and laborious life in comparative poverty, the result of an overweening prejudice.

Let us not then be ashamed to learn from each other. But to return.

We must henceforward encourage all sorts of manufactories throughout the country, and, until we can be thence supplied, set a-going within our own dwellings the old-fashioned spinning wheel and loom. We must, male and female, wear our own manufactures, and, like the New Englanders, live upon the old-fashioned rye and Indian corn, the healthiest food in the world, and thus make a long pull, a strong pull, and a pull altogether, until our debts are paid.

I may be told the old story, that we can buy with cash all these goods cheaper than we can make them. This would be perfectly true, provided we could obtain cash for all we could raise, at a remunerating price; but it is perfectly false, when our only article of export, and for which alone we can get money, must be sold *for less than it has cost us*. To sell in the dearest market and buy in the cheapest, always pre-supposes that we have something to sell, and that the price we obtain *will repay the cost of its production*—otherwise this fine theory turns out to be a mischievous fallacy. A farmer can no more sell *his* goods under cost than the merchant can his. The farmer's goods consist of food, and like the retail shop-keeper, the greater the variety of his articles and the greater the number of his customers, the more money he will make. Hence it follows, that if he can supply the mouths of those who manufacture the goods which he needs, without the intervention of the host of agencies and consequent enormous charges, to which he is now subjected in the exportation of his produce and the importation of his goods, all of which is sure to come out of his pocket, the better evidently will his position be. In such circumstances, little or no money would be required; so long as we can supply ourselves or be supplied within our own country with the various commodities which we need, a mere barter business or exchange will accomplish it all. One dollar circulating within our own territory will, in such case, represent and go as far as fifty dollars sent to a foreign country. What millions would thus be saved to the country in the single item of foreign exchange. What hundreds of thousands of pounds for bank accommodation—what tens of thousands in law costs—all of which, as I have before stated, must now be dug out of the ground. Capitalists would soon find, that stocks in manufacturing establishments would be more profitable than in banks, to which we are now contributing about 250,000*l.* a year!

In so strongly urging upon you the necessity of multiplying and varying the productions of our farms, and especially an immediate attention to the dairy, I cannot help repeating what I said a short time ago, to a neighbour, with whom I was discussing this very subject. I said I had been about twenty-two years sheriff of a populous district, and whilst in the performance of my duty

some hundreds of mere wheat-growers had come under my special cognizance, not a single one who had been engaged chiefly in the dairy business, had during the whole of that period, to the best of my recollection, come within the fangs of the law.

It is true that we cannot perhaps at once make the transition, from a wheat growing to a dairy producing people; because the latter requires, not only a long course of practice, but also a mental training, to which, from various causes, but chiefly from the newness of the country, we have hitherto been strangers; but it is time that me make a beginning, and those who are first in the field will be the best off. Dairy farming is, in fact, the philosophy of husbandry. The dairy will produce butter, cheese, beef and pork, and will, besides, contribute materially to the enrichment of the land for the production of grain; whilst the mere wheat grower must be dependent, in a great measure, upon foreign manures. It is, indeed, supposed that a stock of cattle and sheep properly housed and fed, will contribute, by the production of manure alone, a sum equal to the value of the fodder which they consume.

The subject of dairy husbandry is one of the most interesting, as it certainly is one of the most profitable, which can engage the attention of the farmer. It would, of course, be entirely out of place for me, at this time, to enter into details; but I cannot help referring you to the able report of Mr. Colman, whom I have already mentioned; and, if evidence of the profitableness of the dairy be required, you will there find it supplied. This gentleman has shewn the clear profit of one cow to be in the United States $18; in England $24, and in Holland 100 guilders, or about £10 of our money per annum. I would refer you also, whilst I am upon this subject, to our own agricultural periodical, published at Toronto, and edited by our worthy, talented and indefatigable Secretary, Mr. Buckland, for some excellent remarks and directions upon this important subject.

I am by no means willing to be understood, in my recommendation of the dairy business, and the general extension of the productions of the smaller produce of the farmstead, to mean that these should supersede wheat and other grain, but that they should be added to, or grafted on our present system. There are none of the native Canadians or old settlers, who can be blind to the fact, that since we have left off the growing and manufacturing of wool and flax, and have substituted nothing in the place of the indoor-work which they supplied, and without which no farmer can prosper, that many hands are left idle, and many hours pass away unemployed, and, in consequence, the whole expense of the farmer's establishment must fall upon the clean bushels of wheat alone. Only look at the New Englanders, where, so far from selling, they are obliged to buy their wheat; and where, to use the words of a friend of mine from those states, the stones are so thick that they are obliged to go six rods to get earth enough to cover a hill of corn; and yet these people get rich. It is owing, he says, to the circumstance that every hand works—whether foul weather or fair—the attention of the whole household is directed to the "littles"—the pence; the pounds can take care of themselves. It is also worthy of remark, that in the dairy producing districts of England, as well as America, the *moral* tone of the people stands higher than in other parts; arising, no doubt, from the circumstance, that under such a mode of husbandry there can be few idle hands.

Gentlemen, let not the drift of these observations be misconstrued to mean that the farmers of Canada are not themselves as industrious as the farmers of any other country, but my fear is for the rising generation. This would perhaps be too delicate a point for most men to touch upon; but it happens to be well known to a great number of those whom I am now addressing, that I have at one time in my life shared some of the hardships incident to the farming life in a new country, and that I have laboured with my own hands as hard as most men. It matters little indeed, to those who have arrived at my years, how the world gets on in its future course, but to our children it is all important—it is to *their* welfare that our efforts must now be directed, and it is principally for *their* benefit that an example of industry, prudence, economy and morality, is required at the hands of their parents.

I cannot shut my eyes to the fact, nor refrain from expressing an apprehension, that our *children* are in great danger; that our sons and our daughters, from no fault of theirs, are in danger of contracting habits of idleness. It is as much our business to furnish employment, and constant employment, for the minds and hands of our children, as it is to find them food and raiment: whilst the one protects and invigorates the body, the other purifies and exalts the mind.

How many young men, and many of them farmers' sons too, even now, in the infancy of the country, do we see, who are becoming a burthen to themselves and a nuisance to the country from mere idleness; and are in fact, from early habits, incapable of any useful exertion. "There is a lion in the way, I shall be slain," says the idler; "The way of the slothful man is a hedge of thorns, but the way of the righteous is made plain."

Some of you whom I am now addressing, may live to see the day, when agriculture will be elevated as a pursuit and a profession. That indefatigable officer, our Superintendent of Education, is, I am beyond measure gratified to see, bending his giant energies to, and bringing to bear his powerful mind upon, the attainment of this object, an object which can only stay or check that rush for wealth, for office and notoriety, which amongst the young men generally of the province, is like a torrent sweeping over the country, and carrying away every moveable object in its course.

When agriculture as a profession shall be made to assume that station to which it is entitled, then the hundreds and thousands of young men who are now crowding the professions, and forcing their way into all the avenues of trade and pursuits of mercantile business, will find employment in the much more useful as well as equally honourable profession of agriculture.

But this is not the place to moralise. I must hasten on to the close of the subject, in the discussion of which the difficulty lies more in what I shall leave unsaid, than in that which I shall say.

One part of the subject, however, and which perhaps after all is the most important, is the mode and manner in which our profession can be most effectually assisted *by the application of science.*

Amongst many of our farmers, both Canadian and old country, the *theory* and *practice* of agriculture are still studiously kept in *opposition* to each other, and form, when thus understood, a sort of "vexed question," which will at times excite in their several advocates unseemly and unprofitable contention.

I am not myself one of those who believe that there was no science in agriculture until *Davy* and other modern chemists wrote. Although we have no account of the *theory* of agriculture having been taught by the early eastern nations, yet a steady advance in the art is clearly discernible in the Old Testament, whose records abound with descriptions and accounts of "flocks" and "herds," cattle, sheep, and even their diseases, as well as "sheep-folds," "stalls for all manner of beasts," and the manner in which their provender was prepared. That they were acquainted with the arts of the dairy is also manifest. "Surely," says Solomon, "the churning of milk bringeth forth butter." And Samuel speaks of the "cheese of kine." Their chief productions of grain were, wheat, barley, beans, lentils and rye. We have no reason in fact to doubt that they were skilful husbandmen. They ploughed and sowed much the same as we do at this day. They had hoes and mattocks. "On all hill sides," says the prophet," that shall be digged with the mattock there shall not come thither the fear of briers and thorns." In Egypt they irrigated their lands. When their corn was ripe it was cut with the sickle or scythe, bound into "sheaves," threshed, fanned and ground into flour.

The Greeks, too, it is evident, improved upon the art to a very considerable extent. Xenophon, who lived some hundreds of years before the Christian era, wrote largely upon agriculture, and that he thought deeply upon the subject is evident from his writings. "No man," he says, "can be a farmer until he is taught by experience; observation and instruction may do much, but practice teaches many particulars which no master would ever have thought to remark upon." "Before we commence the cultivation of the soil," he observes, "we should notice what crops flourish best upon it; and we may even learn from the weeds it produces what crops it will best support." He recommends "fallowing" and "frequent ploughing." Xenophon also recommends green plants to be ploughed in, and even crops to be raised for the purpose; for "such," he says, "enrich the soil as much as dung." He also recommends earth that has been long under water to be put upon land to enrich it, upon scientific principles. He says the stubble should be left long, and burned upon the land. Homer enforces the necessity of "water courses and ditches," that they may be made to drain away the wet, which is apt to do great damage to corn." There is, indeed, scarcely an end to the writings of the Romans upon agriculture. And it is really curious to notice how their system two thousand years ago, goes nearly on all fours with ours at this day; so much so, indeed, that one is almost brought to doubt whether much improvement in agriculture as an art has taken place. Now will any one undertake to prove that there is no science in all this?

I have made these observations in support of those who argue that modern agriculture is not so very far ahead of the ancient system as many would make us believe. "There is nothing new under the sun," says Solomon; and this remark holds as good at this day as it did three thousand years ago. The principal difference in agriculture as an art, and indeed as formerly practised, and agriculture as a science, and as now placed before the world, consists in having, by the aid of a knowledge of chemistry—that is, the power of discovering the constituents of bodies — been enabled to bring the laws of nature under subjection to our will, and adapting them at pleasure to the useful purposes of life. Of this the ancients knew nothing. And that the wonderful discoveries made in chemical science are one day destined to make two grains of wheat grow where but one grew before, no reading man can any longer doubt. It is true that chemistry is but of modern date; there are indeed those living who may be said to have rocked the cradle of its infancy; and it is intimately connected with the practical arts, and especially with the advancement of the great art of agriculture, the most important benefits to which must result from its study and application. In thus looking at both sides of this disputable ground, my desire is to bring the theory and the practice of agriculture a little nearer together. They are, in fact, inseperable. Give me, says the common thinker, only a little practice, and a fig for the visions of theory. Science, however, is, without any doubt, the great source of instruction for practice; and it would be just as reasonable for the man who lights the gas lamps in our streets, to laugh at the German philosopher who discovered the use of gas, as it is for practice in general to undervalue theory.

It is not yet sixty years since a Scottish nobleman gave the first hints as to the application of chemical science to agriculture. It is not forty years since these hints were enlarged upon and enforced by Sir Humphrey Davy; and even to this day, important as agriculture is to all men, most rural operators proceed upon practice alone, and are totally ignorant of many methods suggested by scientific men, of cultivating the ground in a much superior manner.

Now, gentlemen, although I am unwilling to undervalue practice, I cannot too much overvalue *reading.* In this single suggestion—reading—not theory, lies the difficulty, and also, in my opinion, the very germ of our prosperity as farmers. I have known many a person, both as farmer and mechanic, labour hard and die a poor man, whilst on the other hand I have known those who have

amassed large properties with comparatively little physical exertion—the one was a reading man, the other was not. I do not intend by this to convey the idea that every farmer should become a chemist; all I mean is, that every farmer should keep himself constantly informed, by means of books and papers, of all the practical improvements in his profession—not of the theory, but of the *practice* of others. It is not necessary, in my opinion, for a farmer ever to look into a book on chemistry; let this part of the business be left to the professional and experimental man, and let *him* give, in a popular and tangible form, the results of his labours. I can point out, with very little danger of being mistaken, as I travel through the country, the farmer who reads, and the one who does not read. This is not all. I can shew more than one instance in which farmers, of apparently equal circumstances as to property, but unequal as to intelligence, the reading man in the course of a few years becoming possessed of his neighbour's farm, and the *practical* man being obliged to go into the back woods. The fact is, the man of intelligence always has been and ever will be the master of the ignorant. The naturally intelligent, who is necessarily also a reading and thinking man, will adopt of his own accord every feasible suggestion, whilst the other will feel indignant at the idea of receiving instruction from any source. It is true that we have hundreds of what we call good farmers throughout this country, who know nothing of science, but it would be difficult to point out one of these, who is not a reading and a thinking man; whilst we have thousands whose prejudices are so strong as to put at defiance every effort for their removal. Such men should be cautiously dealt with; any attempt to force upon them an improved system is almost certain to fail. "A horse loose in a pasture," says an experienced agricultural writer in reference to this matter, "can rarely be caught if you approach him swinging the bridle—the emblem of his subjugation—before his eyes; but if you go to him, shaking only the measure of oats before him, and concealing the bridle under your coat, you can generally take him without difficulty."

The man who expects to make money by farming, must be a thinking man, and he must think correctly, which he cannot do without availing himself of the experience of others, obtained either by personal inspection or by reading. So dependent upon circumstances and various are the operations of the farm, that unless the head is capable of embracing a multitude of minutiæ in advance of his work, the farmer must inevitably be subject to constant losses. To be a farmer, requires, in fact, a mind schooled into every conceivable mode of calculation, and it is only in as far as his judgment is formed upon calculations, fixed principles and experience, that he will succeed.

Exercises of the mind in reflecting upon the course of nature and the processes of cultivation, are of vast benefit. Where the various crops in the field are made matters of study, they possess a value and an interest distinct from the amount of money they bring in. They become one's teachers; they give him lessons to be treasured up and used. And it is those only, who seek to learn and profit by these lessons, who really are intelligent and exemplary farmers. A few, by dint of unwearied toil from year to year, and by a soul-pinching parsimony, may get money; and this too without observing any lessons, excepting a few brief ones which were inculcated by others while they were young. But those who stick to the old way, through thick and thin, and for no other reason than because it is the old way, are not good farmers; they are little more than common labourers, who by dint of perseverance get some money, but little else worth having. We are not ridiculing the old ways, but only saying they should be compared with new ones. That the old are, in many cases, the best, is undoubtedly true; that new ways are sometimes better than old, is also as undoubtedly true. It is only by comparing them, that one can satisfy himself fairly and properly which path will lead him most directly to the desired object.

Is your corn best, when planted deep in the soil, or when put near the surface? Does the cornfield yield a better crop, when you spread all the manure, or when you put it wholly or in part in the hill? Is it best to make large hills or small? How many stalks should be left in a hill? How many hills upon the acre give the largest crop? Is it best to plant in hills or in drills?

For potatoes, is it best to spread all the manure? Or will you put it in the hill? If in the hill, will you have it below or above the seed? Are hills or drills best? Do you cut the seed or plant it whole? Do you put the seed deep in the earth, or do you keep it near the surface?

Is grass seed best sowed with grain in the spring? Or will you sow it in August or September? Or will you seed down to grass with your wheat, whether in spring or fall? Will you simply turn over your bound out grass land—top dress and put on the grass seed? Which of all these is the safest or most profitable?

Shall your manure be ploughed under the sod, or will you, after ploughing, put it on the top and harrow it in? Do you find the most benefit from it when you use it fresh from the barn, or when you let it ferment and pulverise before it goes upon the land?

These and a thousand other questions are disputable, and correct answers to most of them you must learn by observations upon your own land and the lands of your neighbours. If we will but use our experience, and our common sense, in connexion with books, we will find the books valuable aids.

To conclude this address. I find it a duty to apologize for the length to which it has swelled out. Before I conclude, however, I cannot refrain from reminding you, that upon the farmers alone depends the prosperity of the country—with them alone it rests whether wealth or poverty shall be the inheritance of our children. All other classes of society are, comparatively, indifferent spectators. Your responsibility, therefore, is great, and the duty you owe to God, to your country, and to your children, requires that your exer-

tions should be correspondingly great. And, as we all know, that as of ourselves we can do nothing, it is not meet or proper that I should close without reference to HIM who maketh the grass to crown the mountains, and the valleys to smile with the ripening corn. It is from HIM alone that all good things do come. It is in vain that we rise up early and so late take rest, if HIS blessing does not accompany our exertions. In all our efforts to obtain a livelihood, competence or wealth, especial reference must, in every step we take, be made to GOD, whom, if we devoutly and reverently acknowledge in all our ways, will, as surely as he has promised it, direct our paths.

## HOME DISTRICT AGRICULTURAL SOCIETY.

The Autumnal Exhibition of this society took place on the 17th October, at Richmond Hill. The day previous was exceedingly wet, and the morning of the show day was any-thing but promising; but as the clouds began to disperse, and the genial rays of the sun put forth their cheering influence, a great number of people were drawn to the spot, where there was to be seen a goodly array of cattle, sheep, pigs, grain and other productions, usually met with at an agricultural show. We will now endeavour to give our readers a concise general view of the exhibition.

The horses were numerous, and, speaking generally, they were of a useful kind, several of them possessing qualities of very high merit. There were some eight or ten two-year-old colts which were sufficient of themselves to give a character to this department of the show. A still larger number of spring colts, together with their dams, afforded pleasing evidence that this important district is improving in its breeds of horses, particularly in those best adapted to agricultural purposes. As much of our land has now been under culture for a considerable period, a deep and thorough pulverization of the soil is yearly becoming an object of greater importance. We are glad to see an increasing disposition among our breeders of horses to combine adequate muscular power with quickness of motion. We must not omit to state that the blood mares, with their colts, were of a character to call for high commendation. Mr. Ashford's prizes for the best and second best colt and filly, from his celebrated horse "*Young King Alfred*," were awarded to Robert Erwin and Elias Snider, both of the township of York.

Of the cattle we can say but little in their praise. In this very important department, the exhibition was not creditable to the district. There was a few good fat cattle, but the absence of the pure breeds must have been strikingly obvious to the most casual observer. The previous state of the weather may partly account for this; but fresh imported blood, it would appear, is now become essentially necessary in the district. These are matters requiring constant attention and the exercise of a discriminating judgment. Well bred cattle, adapted to the wants and physical conditions of a country, are essential to any improved system of husbandry. We can hardly think that the Richmond Hill show afforded a fair specimen of the neat cattle of the Home District; a fact, however, has been disclosed, which demands the serious attention of our farmers. A liberal outlay in improved stock, when under judicious direction, will always yield a profitable return.

The sheep in great measure made amends for the inferiority of the cattle. This part of the show was highly creditable; and we observed some fine specimens belonging to Mr. Miller, of Markham; and some rams of superior merit, owned, we understood, by Mr. Simpson, of Whitchurch, and Mr. William Miller, of Pickering, and others whose names we did not ascertain. Of Swine the number was small, but upon the whole we should say of excellent quality, indicating a marked improvement upon former years.

The show of implements was sadly meagre. An iron plough on the Scotch principle, a subsoil plough, a set of iron harrows, a seed drill, with a few chaff cutters, were all that we saw deserving of notice. We think the manifestation of more public spirit among our mechanics would, even in a pecuniary sense, answer their purpose. How different is it in this respect among the Americans! We noticed a very ingenious contrivance for gathering fruit with facility and without injuring the trees—an invention, we understood, of Mr. Holwell, of the Ordnance Department. There was something similar exhibited at the New York State Fair at Syracuse.

The committee had provided a large room for the exhibition of grain, roots, dairy productions, &c., and we must say the display reflects great credit on the skill of our farmers and the improving state of our husbandry. The wheat was superb; the specimens which obtained the three prizes belonged respectively to Messrs. Auburn, Dew, and Watson, and we should say could scarcely be excelled in any country. Mr. Franklin Jacques had some superior spring wheat, for which he obtained the first prize. The Indian corn, shewn by Capt. Shaw and Mr. R. L. Denison, could hardly be surpassed in a more southern latitude. The swedish turnips, exhibited by Messrs. Dalzell and Denison, were very large and mostly well grown. We also observed some good specimens of white and yellow turnips, mangel wurtzel, and some splendid Belgian or field carrots, grown by Captain Shaw, whose gigantic pumpkins were the wonder of all beholders. The potatoes were excellent, and apparently free from disease. Of hops there were several bales, mostly of good quality, which might be made still better by cleaner picking. Butter was in abundance, and the general quality so good that the judges must have experienced no small difficulty in their decisions. Of cheese there was but little; and as we did not taste it, all we can say is that others who did pronounced it pretty good.

As this is the first instance, of the District Show being held out of the city of Toronto, we must congratulate the Directors as well as the Commit-

tee of the Yonge Street Agricultural Society, who undertook and carried out the arrangements, in conjunction with the two Secretaries, Messrs. Wells and Crew, with so much promptitude and ability, and, as it proved in the final result, with so much success. We therefore confidently look forward to occasional meetings in other suitable parts of the district, in years to come; and when again the exhibition shall take place in Toronto, we hope and trust the citizens of all classes will be more prompt and liberal in aiding the society than they have been for some time past. It is a truth which requires only to be stated to be recognized, that the main source of our wealth and prosperity can be found nowhere else but in our agriculture.

We have omitted to say that, at 2 o'clock, Mr. Hind, of the Normal School, delivered an interesting and useful address on some of the applications of chemical science to practical farming, the substance of which we hope to lay before our readers in the present number. The lecture was delivered [illegible] of doors, and consequently much of its effect was lost. We regard the introduction of an address on these occasions, not only as new, but as an exceedingly important and encouraging feature, and we hope the society will continue the practice. It is, however, most desirable on several accounts that a large room should be obtained, if possible, for this purpose.

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## MR. HIND'S LECTURE.

(*From the British Colonist.*)

The lecturer introduced the subject to his auditors by asking the question, What is Agriculture? He remarked, that forty years ago, few would have any hesitation in answering that question, and saying, Agriculture is the *Art* of tilling the soil. At the present day, however, men would be inclined to add another word to the definition, and say, Agriculture embraces the *Science* and Art of tilling the soil. The art of agriculture consisted mainly in mechanical operations for improving the condition of the soil, whereas the science of agriculture suggested those means which were best adapted for raising the largest amount of produce at the least possible expense of capital, and at the same time were capable of continually increasing the fertility of the soil, or at least preventing its deterioration. The lecturer then adverted to the consideration of the sources from which vegetables derive those substances which enter into their composition. A vegetable existed in two mediums, the air and the earth; from these sources all their component parts must in some way or other be derived. There were two modes, and only two, in which substances could enter into plants, either by the direct absorption of gases from the atmosphere, by means of the leaves, or of gases and solids dissolved in water by means of the roots. The main object, therefore, that the farmer had in view, was to prepare the soil in such a manner that certain of its component parts might be susceptible of solution in water, and at an early stage of its development an ample supply of leaves might be thrown out for the purpose of absorbing gases from the atmosphere. The lecturer then proceeded to remark, that from ninety-five to ninety-nine parts out of a hundred of every vegetable had previously existed in the form of gases; that these gases had been absorbed by its leaves or roots, and under the influence of heat and light were prepared for the exercise of that mysterious vital force which caused them to enter into the structure of the plant; that the remaining five or less parts had before existed in the form of solid substances in the soil—one or two of which he would briefly allude to. First to flint, a most necessary element in the composition of the straw and seed of all grain-growing plants, and grasses generally. The introduction of flint into the composition of vegetables being obviously for the purpose of strengthening them, thereby enabling the stalk to support the fruit and leaves; secondly, to lime, phosphorus and sulphur. Although a vegetable might be perfect in structure, and capable of bearing fruit and flowers, yet if it did not contain these substances, it could serve little purpose in building up the framework of the animals which fed upon it—since the bones of animals required large quantities of lime and phosphorus to give them strength, while the hair always contained a considerable quantity of sulphur. He would now consider the mode in which a plentiful supply of proper gases might, by art, be afforded to plants. The names of those gases which vegetables most required for direct consumption were carbonic acid (the choke damp of miners), and ammonia (the gas which gives the strong odour to spirits of hartshorn). Both these gases exist in the atmosphere, carbonic acid to a much greater extent than ammonia, and that only to the extent of about one part in every two thousand of the air we breathe. When plants are so far developed as to be provided with leaves, they may obtain a large amount of carbonic acid from the atmosphere, but until they possess a sufficient quantity of leaves, they must obtain the carbonic acid and ammonia they require from the soil. The question which any intelligent and curious farmer would at once propose, the lecturer supposed, would be, How these gases were to be furnished to the soil for the use of plants? The usual answer to that question is, by manuring the soil. Manuring the soil, however, was far from being sufficient, and its inefficiency easily explained. In the air we breathe there is a certain gas possessing most powerful and energetic properties in its simple and undiluted state. The name of that gas is oxygen. The tendency which this oxygen continually exhibits is evinced in a desire to combine with every substance with which it comes in contact. No substance as yet known is capable of resisting the influence of this gas under favourable circumstances. With common charcoal it unites, and forms the carbonic acid already mentioned; with iron it unites, and forms rust; with many metals it combines, and constitutes earths—with every substance, vegetable and animal, the moment vitality is fled, the oxygen of the atmosphere seizes upon its decaying elements, combines with some of them, and ultimately causes nine parts out of ten to assume the form of carbonic acid, water, and ammonia. At the same time, therefore, that the farmer manures the soil, he must prepare it in such a manner that the oxygen of the atmosphere may permeate the soil, and accelerate the conversion of the vegetable manures he places in the soil into carbonic acid and ammonia. To effect that object a soil must be well and deeply ploughed to render it porous—it must be well drained to remove stagnant water and increase its porosity. When thus prepared, atmospheric air and consequently oxygen permeates every portion of the soil, and accelerates the decomposition of vegetable matter, furnishing a plentiful supply of carbonic acid and ammonia to the young plants. The *time* when these gases are most required by crops is when the seed is sown, before leaves have been thrown out. If they have a plentiful supply at the early periods of their growth, they will rapidly develope leaves, and in proportion as their leaves are developed will they obtain *means* of absorbing from the air additional quantities of that food, namely, carbonic acid, from which at least one-half of their substance is obtained. The farmer

possesses means also of giving large quantities of ammonia to his crops. The liquid manure of the stables contains much of that substance. When urine ferments it is almost entirely converted into water, and a compound of carbonic acid and ammonia. This compound, called carbonate of ammonia, is soluble in water, and above all other manures adapted to give food to vegetables. The drainings from stables should therefore be carefully preserved, thrown upon some compost heap, containing a considerable quantity of *clay*, and then, as occasion offers, strewn upon the soil. The lecturer then alluded to the mineral substances which enter into the composition of vegetables, such as flint, phosphorus, lime, sulphur, &c. He stated that the one fact to be borne in mind with reference to all substances which naturally exist in a solid form, was, that before they can enter into the composition of vegetables, or be taken up by their roots, they must be in a state of solution in water. Water, he said, possessed the property of dissolving small quantities of many mineral substances. The condition, however, of the compound parts of the cultivated soil was generally not such as would permit of a sufficient quantity of the necessary substances to be dissolved in water as to produce the most favourable development of the vegetables grown upon the soil. It was possible, however, so to change the constitution of the necessary substances as to afford a sufficient supply for the use of the crops. Flint and phosphorus usually exist in the soil combined with other substances, which render them insoluble in water, if the oxygen of the air acts for some length of time on such soils, it liberates certain compounds of flint and phosphorus, lime and potash, and renders them capable of being dissolved in water. First, therefore, oxygen must be allowed to permeate the soil, which, together with heat and moisture, will prepare these mineral substances for solution in water. Secondly, *time* must be allowed for this slow process to operate. To ploughing and draining, another artifice must be added, to effect the desired object, namely, the fallowing of land; but in order that the land may not lie idle, recourse must be had to a judicious rotation of crops. The benefits resulting from a proper rotation of crops, arose from the circumstance of some kinds of plants requiring less of certain substances to build up their structure than other species.—Wheat, for example, must have a large amount of flint and silica, to give the stalk sufficient strength to bear the weight of the ear; and although an enormous quantity of flint existed in every soil, yet it was not in that state which rendered it capable of being dissolved in water. Under the influence of the atmosphere, heat and moisture, the compounds containing this flint were slowly disintegrated or broken up, allowing water to dissolve a portion of the required substances. When crops, therefore, requiring little silica or flint were grown upon the soil, time was given for the air and moisture to prepare fresh supplies of the necessary ingredient for wheat crops and corn-growing plants generally. One apparent anomaly presented itself, in growing oats either before or after wheat, but susceptible of easy explanation. An average crop of wheat drew from one acre of soil about one hundred and eighty pounds of mineral substances, while a crop of oats abstracted only sixty pounds of the same minerals from an equal extent of surface. So that *three* crops of oats took from the land, of soluble mineral substances, not more than *one* crop of wheat. Ploughing and draining, the lecturer observed, have mainly one object in view, which is to expose as much of the soil as possible to the influence of the atmosphere; that object is effected by greatly increasing the porosity of the soil, and thus permitting air to circulate through it, which it will always do at every change of temperature. A rotation of crops allows time for the effects of these influences to operate. The decomposition of the soil may be accelerated, and the amount of soluble minerals greatly increased, by throwing some substance upon the soil which is capable of assisting the decay and disintegration of vegetable and mineral substances in the soil. The element best adapted for effecting that object is lime. Lime not only rapidly decomposes vegetable matter, but it combines with some of the component parts of clays and sand, forming substances which are easily dissolved by water; if noxious compounds exist in the soil, it will convert many of them into suitable food for plants, or at least render them harmless. The soil in Virginia, which almost for centuries has produced luxuriant crops of wheat and tobacco, is now comparatively sterile. All the soluble mineral substances which it once contained in abundance have been abstracted from it, and no means adopted for accelerating the disintegration of the vast store it still contains, so as to render them soluble in water. Its fertility in many places is gradually being restored, by strewing lime upon it, and if that course be pursued for a few years, it will regain its original reputation. The lecturer then proceeded to advance a few observations on draining. You drain a swamp, and you convert it into excellent pasture land; does not this practical result afford a sufficient demonstration of the influence of air upon the soil. Where water is stagnant, no air can penetrate the soil in which the water lies; the decay of vegetable matter cannot be continued, and the disintegration of the solid constituents of the soil is at a stand-still—only such plants will grow upon it as are by their nature adapted for living in a soil saturated with water. Drain such a soil, and in a few years it will be converted into the most luxuriant pasture land. All soils of whatever character should be well drained, their temperature is thereby increased, and vegetables shoot forth much earlier on well drained than on undrained soils. The lecturer then expressed his opinion that draining, *in this climate*, was productive of the greatest benefits, but that subsoiling was an essential requisite in order that the beneficial influence of draining might be fully exhibited. Owing to the long continuance of dry weather in this climate, the soil frequently became altogether deprived of sensible moisture, to the depth of four, five, or even six inches; but if the soil is well drained and subsoiled, the root of a vegetable will penetrate far below the limit of dry soil, and obtain an unfailing supply of moisture, from a source removed from the evaporating influence of the hot sun in the summer months. Any farmer may satisfy himself of this fact, by digging perpendicularly to the depth of fourteen or fifteen inches, with a sharp spade, in the summer time. He will find the soil dry and parched for four or five inches; but at the depth of eight or ten, and below that, he will discover sufficient moisture for all the purposes of the plant, aided by the copious dews which fall at night.

With respect to the rotation of crops, he would remark that no fixed rules could be given, applicable to all soils; for the constitution of soils differed so much, that while on one farm wheat might be grown with success every third year, on others it would not be advisable to sow more frequently than once in every five or six years; experience or an analysis of the soil could alone determine the precise length of the interval. It is possible that an abundance of necessary substances may exist in the soil for the supply of a crop of wheat, and yet if wheat be sown, it is found to produce less than an average crop. How is this to be explained? The failure would doubtless be owing to the peculiar chemical constitution of the soil, and the nature of the crop grown one, two, or even three years before. The roots of clover, peas, and other green crops do not decay equally rapidly in all soils; their presence in the soil in a partially decayed state may be detrimental to the favour-

able growth of wheat; the remedy is lime. That substance will hasten their decay more rapidly, convert them into nutritious food, or render their remains harmless. Ashes will have the same effect. The lecturer concluded his remarks by stating that there existed no reason why the soil of Canada, under a judicious system of culture, should not produce as luxuriant crops as were annually attained in the mother country,—that from thirty-five to forty-five bushels of wheat per acre might with comparative certainty be depended upon,—but that it would require, in order to obtain such results, first, careful and deep ploughing; secondly, effectual draining; thirdly, a judicious rotation of crops; fourthly, the application of as much farm-yard manure as would equal in weight the crop taken from the soil; and lastly, a judicious use of *lime*, and in some cases common salt, especially on pasture land. It was not to be supposed, he observed, that in a single lecture, the rationale of agricultural processes could be more than hinted at. Time would not permit him to make any observation on the rearing of cattle, or that ratio which ought to exist between the amount of arable soil in cultivation on a farm, and the number of live stock which should be kept upon it,—a subject in itself affording ample field for much useful discussion.

## THE DINNER.

This part of the proceedings went off exceedingly well; the only drawback being want of room. Mr. Dalby provided a good substantial repast, for the very moderate sum of three York shillings each. The chair was occupied by E. W. Thomson, Esq., the President of the Society; and we noticed several influential individuals, among whom we may mention, the Hon. W. B. Robinson, M.P.P., late Inspector-General, Wm. Baldwin, Esq., who occupied the vice-chair, J. Gamble, Esq., F. Boyd, Esq., Colonel McLeod, H. Y. Hind, Esq., of the Normal School, R. L. Dennison, Esq., Dr. Clark, Robert Cooper, Esq., Captain Shaw, &c. &c. The usual loyal toasts were most heartily responded to, including "*our noble Patron*," the Governor-General; Colonel McLeod responded to the *Army and Navy*. We copy the following, with one or two additions, from a city cotemporary.

The *Press* was introduced by the chairman with a few appropriate remarks. Mr. McDougall of the *Agriculturist* being called for, replied.

He said, he supposed he was called upon to reply to this toast in consequence of his connection with the *Canadian Agriculturist*, the only agricultural journal now published in Upper Canada. It was usual on occasions of this kind to speak of the mighty influence of the press, of its being a powerful engine for good or for evil, &c. &c.; but few persons who utter or listen to these trite observations, form any true or just conception of the real importance of, the gigantic influence possessed at the present day by that great civilizer of mankind. Think of those wonderful establishments at New York and London, which issue 30 or 40,000 sheets every day, sending every variety of intelligence to all parts of the habitable world. The newspaper press is not only the organ of the public will, but it sets it in motion, modifies it, and often executes its decrees. All men who exercise any influence upon the community read, and all men are influenced by what they read. The press in all free countries may be said to have usurped the place of government. How important, then, that it should be rightly managed. He then referred to the importance of the press to the agriculturist. Why should not the farmer enjoy the advantage of an inter-communication of ideas and opinions of the details on his art—the most important of all the arts? Why should every other class in the country—the mechanics, the merchants, the religionists and politicians have their organs to disseminate their views and advocate their interests, and the farmer, to whom the knowledge of discoveries, experiments and science is no less important in his business, be without any press that he can call his own? This should not be. The farmers of Canada, if they wish to advance in wealth and intelligence, must support a press devoted to their interests. Science is daily revealing some new facts relating to agriculture, the knowledge of which is of the highest importance. The value of the press, when devoted to the farmer's interests, has been abundantly proved by the experience of other countries as well as our own. In the neighbouring Union every state has its Agricultural paper, and some can boast of two or three. Can it be possible that the farmers of Canada West are either unable or unwilling to support efficiently one journal? He hoped not. He trusted that as there was now but one published in this section of the province, which he believed would bear a favourable comparison with other publications of the same kind in any country, it would be generously sustained, not by subscriptions alone, but by the pens of the farmers. The agricultural papers that had been started at different times in Canada had met with slight encouragement, perhaps some of them deserved no more than they got. For his own part he could say that he had made nothing by his efforts to keep up a respectable paper for the benefit of the class from which he sprung—the farmers of Canada. It had up to the present time been, not his good, but his *bad* fortune to be connected with the agricultural press. But he hoped its greatest difficulties were overcome. A gentleman who was present, and would he believed reply to another toast, one who is eminently qualified to impart instruction on those points which involve scientific enquires, as well as those exclusively practical, was now connected with and interested in the *Agriculturist*. Those who had examined its pages during the present year could judge whether it is not creditable to our country and deserving of support. He thanked the meeting for the hearty good will with which they drank the toast.

The chairman then gave *The Agricultural Association of Upper Canada*, and connected with the toast the name of the Secretary, Mr. Buckland.

*Mr. Buckland*, in acknowledging the compliment, begged to thank the company for the honour they had done him by so cordially receiving his name in connection with the Provincial Association, an institution he thought, if properly managed and supported, eminently calculated to benefit the country. He regretted that he had done so little for the Society, which was owing more to a want of opportunity than of will, and expressed his desire to see the institution placed upon a broad and permanent basis, receiving the support of all parties. He was glad to find that the claims of the Society had been appreciated and liberally responded to by the government, by a grant which would soon enable the asssociation to pay off its outstanding liabilities. Some complaints had been expressed in reference to the management of the late exhibition; it was an easy thing to find fault, and there were some defects in the Kingston arrangements that are not likely to occur again. The great desideratum, he thought, to be a uniform system of management. He spoke of the zealous and disinterested services of the executive committee, and the liberality of the city of Kingston and the Midland District in supporting the exhibition. Mr. Buckland thought that the society should at once publish a report of its proceedings. Little is known at home of the soils,

climate and capabilities of the country—as a member of the Royal Agricultural Society of England, he was in the habit of seeing, when in London, reports from the various Agricultural Societies in the West Indies and our southern colonies, but nothing from Upper Canada, the most important colony, in its agricultural and manufacturing resources, belonging to the British crown. He thought a well digested report, embodying facts which might be depended upon for their veracity, would materially improve the character of the emigration which annually reaches our shores.

*Domestic Manufactures* was spoken to by the Hon. W. B. Robinson, who could not see why he was called to speak to this toast, no man in the country having had less to do with manufactures than he. Mr. Gamble unfortunately had left, or he would have done justice to this subject. The honourable gentleman avowed his determination to exert his influence in support of native industry and manufactures.

*The Lecturer* was also proposed from the chair. Mr. Hind replied, thanking them for the honour they had done him. He expressed much satisfaction at being able to spend an hour in the endeavour to explain some of the principles of the farmer's art. He hoped he would have the opportunity of meeting them on future occasions, when the delivery of a lecture would become a regular part of the proceedings. After a few other appropriate remarks he sat down.

*The Ladies* were toasted, and Mr. Cooper returned thanks in a speech somewhat amusing.

A few other toasts followed, and the whole affair passed off remarkably well.

It is now quite evident that holding the exhibition occasionally out of the city of Toronto will be advantageous to the society, and, as a consequence, to the cause of agriculture in this important district.

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## DEATH OF THE REV. H. COLMAN.

Mr. Colman's labours in behalf of agriculture have been long continued, unremitting, and characterized by intelligence of the highest order. He at one time edited the *Genesee Farmer*, and is well known throughout the United States as one of their best and most voluminous writers on this subject. He was appointed Agricultural Commissioner to the State of Massachusetts, and went to Europe for the purpose of making a survey and report on the Agriculture of England, France, Germany, &c. His "tour" and other works have been recently published containing a vast fund of useful information. Just as he was preparing to return to his native country, and the day before he intended to sail *death* summoned him to another scene. He died in London on the 17th of August, 1849. We shall borrow hereafter from his writings; in the mean time we copy two or three extracts from his "*European life and manners*," which we find in an American paper. We will only add that Mr. Colman was equally distinguished for his benevolence of spirit, gentle and easy manners, as he was as an agricultural observer and author; wherever he went his company was sought both by the upper and middle classes, and his writings bear ample testimony that the poor shared a large portion of his attention and sympathies. His loss will be long felt in Europe as well as in his native country. "The memory of the just is blessed."

### NEATNESS OF ENGLISH WOMEN.

The neatness of the better classes of the English women is quite striking. The majority of them wear white stockings, without those dirty pantalets which you see bobbing about the ankles of our women, and they have too much good sense under an affected modesty to let their clothes draggle in the mud; but they raise their skirts a little, and you will see them elegantly dressed, and walking through and crossing the muddiest streets in the rain, and not a speck of dirt upon their shoes and stockings. I wish our ladies at home could take some lessons from them. Another thing showes their good sense. They all, in walking, wear pattens, or thick-soled shoes, as thick as cork shoes, or else galoshes. India rubbers are not seen. They have another practice which I greatly admire. They seldom wear false curls; but women whose hair is gray, wear it gray; and seem to take as much pains with, and as much pride in their silver locks as the younger ones do in their auburn tresses. I have met a good many ladies in company, but I do not find them to differ greatly from those I left at home, among the well-educated classes. Manners, however, are certainly much more a study than with us, and upon the whole make society much more agreeable; for they are not put on for the occasion, but grow up with them as matter of course. Every thing in society proceeds much more quietly than with us. From what I can see the English women must be excellent house-wives, as nothing can exceed the neatness and comfort of their establishments.

### AGRICULTURAL IMPROVEMENTS IN ENGLAND.

Eight of us were mounted by our host at half-past eight o'clock, and off we galloped, a sort of steeple chase, with all the exhiliration of a fine day, and with capital objects in view. Our excursion was altogether agricultural; and our first visit was to a meadow, where by a moveable railway, large amounts of loam were to be removed on to peat or bog land, and the meadow brought into cultivation. The result of what had been done exhibited this as a successful and beautiful experiment. The object was—an experiment on a very bold scale—no other than the redemption of four thousand acres in one body of peat and bog meadow, into arable land; and this all undertaken by the capital and energy of one individual. On this place is the dry bed of an old river, filled with rich alluvial deposits. He has undertaken to excavate this bed of mud to the extent of eleven hundred feet in length, three hundred and sixty feet in width, and twenty-eight feet in depth; all of which is to be dug out and carried by railroads and cars to the necessary distance, and spread upon his meadows at the rate of eight inches in depth. He accomplishes four acres per day. This is an astonishing work, and will surely succeed, because many acres which have already been redeemed, present the appearance of very fine crops. The next object was several miles farther off, to see the process by which the waters of a very muddy river were made by dikes, &c. to overflow extensive tracts of land, in which there is left a deposit of eighteen inches of mud a year. This is called warping. These were, you may be sure, most interesting and valuable experiments, and prove what may be done for land, otherwise worthless, by skill, labor and capital; and show an extraordinary expenditure, which, in the end, fully remunerates the proprietor.

### SCOTCH FARMS AND FARMERS.

You would be surprised at the extent of their farming. Mr. Oliver, the farmer with whom I dined on Wednesday, pays an annual rent of more that five thousand dollars for his farm, which he has on a lease of nineteen

years; and Mr. Finnie, whom I mentioned, has this year six hundred acres under the plough; both of them, though rich men, are only tenants. The tables of some tenant farmers, who are men of wealth, are covered with silver, and furnished with wines of the most costly character. They took me to visit the farm of a Mr. Hope, in their neighborhood, who also is a tenant, and who has made a fortune of sixty thousand dollars by farming. I never saw cultivation so fine as his farm, and the extent of his cultivation is absolutely immense. The farmers here are what we should call gentlemen-farmers. They never do the slightest work of any kind themselves; but, then, they are thoroughly acquainted with their business, and make it as much a matter of calculation and study as any professional man or merchant does his business. They have none of their laborers in their houses, and, in most cases, the laborers provide for themselves. You would be surprised to find how poorly they live; at least, we should think it so. They have oatmeal porridge and skim milk for breakfast; bread and potatoes for dinner, with beer; and porridge again at night. They cook their porridge for themselves, and, I was going to add, do their own washing. * * * * * * * * *

### CROPS IN ENGLAND.

In New England you hear nothing of the crops; in England you hear scarcely any thing else. In the United States there is no dread, and not even a thought of a famine. In England the population increases at the rate of more than four hundred thousand per year; that is, more than the whole population of the city of New York; and how they are to be fed becomes a matter of great concern to every one. In England, likewise, the incomes of most of the people are limited, and they live up to them. They have no extra resources. They confine themselves to one business or pursuit; and if that fails, or the profits are diminished, they are reduced to hardships and distress. The price of bread affects the price of almost every thing else, and therefore becomes a matter of universal solicitude.

### THE FRENCH FARMERS.

I was in the midst of the land of grapes, travelling for miles and miles, and day after day, through vineyards loaded with their products, and seeing hundreds and hundreds of men, and women, and children, gathering the most abundant harvest which has been known for years. I have never seen, so far as they have come under my observation, a more civil, clean, well-dressed, happy set of people than the French peasantry, with scarcely an exception; and they contrast most strongly, in this respect, with the English and Scotch. I seldom went among a field of laborers in England or Scotland, especially if they were women, without some coarse joke, or indecent terms; and seldom without being solicited for something "to drink your honor's health;" and never, especially in Scotland, without finding them sallow, haggard, bare-footed, ragged and dirty. In France it is the reverse; they are well clad, with caps as white as snow, or neat handkerchiefs tied around their heads; the men with neat blouses or frocks, and good hats. I have scarcely ever seen a bare-footed or a bare-legged woman in France; let them be doing what they will, they are always tidy; the address even of the poorest (I do not at all exaggerate) is as polite as that of the best people you find in a city; and so far from ever soliciting money, they have repulsed it in repeated instances, when, for some little service, I have offered some compensation. Count de Gourcy told me again and again, that even the most humble of them would consider it as an offence to have it offered to them. I do not believe there ever was a happier peasantry than the French; drunkenness is entirely unknown among them; and they are pre-eminent for their industry and economy. I went into one field, with a large farmer, where there were nearly a hundred, principally women and children, gathering grapes, and I did not see one among them, whom I should not have been perfectly willing to meet at the table, or in any other situation.

I visited several plain substantial farmers, and several of the old nobility. They do not live in the same splendour as the English; they have not so many horses and carriages and servants; but they live elegantly. Their houses are most comfortable, and their tables are covered with more luxuries than I almost ever before saw brought together in the same abundance.

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### DEATH OF THOMAS BATES, ESQ.

This celebrated English Agriculturist is no more.—He departed this life at his old residence Kirkleavington, Yorkshire, after a short illness, on the 26th of July last, Mr. Bates has been well known in the agricultural world for more than half a century, and was widely esteemed as an honourable and upright man. Many of our readers, especially those from the old country, are well aware that Mr. Bates held through a long life a prominent and well sustained position as a scientific breeder, especially in the department of short horn cattle—his extensive herd being distinguished for purity of blood and the most perfect combination of the characteristic points and qualities of that celebrated breed.—The world renowned reputation of his *Duchess herd* of short horns needs no advocacy at our hands. That blood has been known for years both in Canada and the United States. Mr. Vail of Troy, and Mr. Sherwood of Auburn, may be instanced as possessing it; and among ourselves we may mention the Hon. Adam Fergusson, and Mr. John Wetenhall; and we may just call the attention of our readers to a letter on this subject from the former gentleman, that appeared in our last number.

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PLOUGHING, &c.—*Friend Holmes:*—Some days since, I had the pleasure of a few hours' ride in the cars, with that Prince of Agriculturists, the Hon H. L. Ellsworth, of Fayette, Indiana. I was not only amused but much instructed by his conversation, and the information imparted—one piece of which, I give you for the benefit of your friend, "a Down East Farmer," and others who may wish to adopt the most economical method of ploughing. Mr. Ellsworth, by attaching the plow-beam to an axle of a pair of low wheels, in such a manner as to keep the colter perpendicular, is enabled to entirely dispense with the service of a plowman. And as one of the wheels or one of the cattle may be made to go on the furrow, a mere lad can drive the team—a saving of labor of great importance to a man who frequently has ten plows, or more, in the field. If one plow can be connected with the axle, why not two? Enlarge the team and save the labor of another teamster.

This is the gentleman who, this year, raised a thousand acres of corn, which will average quite fifty bushels per acre. He has now in the field, twelve hundred hogs, eating it up, fattening themselve, and preparing the land for wheat. The next season, he will put one hundred acres into flax seed. His crop this year produced him seventeen bushels of seed per acre. It would seem that his method of plowing might be adopted on much of the lands in Maine.—*Maine Farmer.*

## THE PLOUGH.

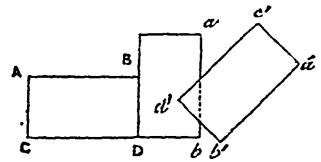
NO. III.

In the first and third numbers of the *Agriculturist*, we made some remarks on the *plough*, relating chiefly to its history and construction, with a glance at the nature and extent of the improvements to which it has been subjected in modern times. We intended to have continued the subject in the successive numbers, until all the important points had been considered. But in consequence of the great fire of last April, which destroyed the office of our publishers, and consumed several of our books and papers, and the cuts which we had prepared for the illustration of this subject, it was dropped. Looking back to the conclusion of our observations, in No. 3 of the *Agriculturist*, we find it stated that "we shall proceed to consider the scientific principles which it (the plough) is supposed to involve, and in accordance with which its form is regulated amongst ourselves." We therefore have procured the necessary cuts a second time, in order to fulfil this promise. We had in view, when we began the subject, an examination of the principles and various modes of *ploughing*, as well as the character and construction of the implement; but as this is a very important branch of the subject, and as we shall have something to say upon it in connection with the Provincial Exhibition of next year, we defer the expression of our views upon ploughing until we get into our second volume.

The following remarks and illustrations are the best we have met with on the *principles* of the plough. We find them in the "Farmer's Dictionary," being copied, we believe, from a work by the Rev. W. Rham, an English agricultural writer of high standing. The remarks are so clear and so much to the purpose that we insert them without comment.

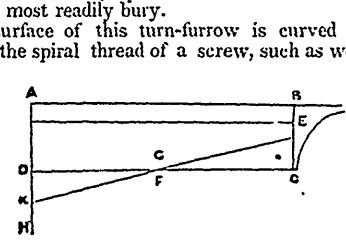
The mould-board of a modern plough, says this writer, is either fixed on one side, or made to be shifted from one side to the other, or there are two mould-boards. In the first case, one half the furrow slices lie on one side, and half on the other, and there is of necessity a double furrow where they join. When it is desirable that the surface should be quite flat, and the furrow-slices all in one direction, the mould-board must be shifted at every turn, and a plough which admits of this is called a turn-wrest plough, or there must be two boards. The form of the turn-furrow is of material importance, for on this depends not only the performance of the work, but also the lightness of the draught. When we follow a plough working in a mellow soil which slightly adheres to the plough, we often perceive that, instead of being turned aside, the earth is carried forward, and only falls off when the accumulation of it becomes heavy enough to overcome the adhesion. It does not slide off from the mould-board itself, but separates from the earth which adheres to the latter; thus shewing that the shape is defective, and giving good hints for its improvement. But as the same plough will sometimes turn over the same earth better when it is either drier or moister, it is very difficult to determine, by experiment only, what may, on the whole, be the best shape. A little reflection and the application of scientific principles may greatly assist us here. It is not sufficient, however, to find the curve which will make the plough go through the ground with the least force. The plough must also perform its work perfectly, and if anything is to be sacrificed, it is better to employ more power than to plough the ground badly. After having ascertained the mechanical principles which bear on the working of the plough, we must observe its action carefully, follow the plough day after day, in different soils and different weather, and thus we may be led to observe all the circumstances which attend its operation, and correct any mistakes which an erroneous theory might have led to.

Many attempts have been made to ascertain the exact curve which the turn-furrow should have to perform the work well, and at the same time to produce the least resistance. The difficulty of the problem lies in determining the data, or principles on which the investigation is founded; and these are so various that it is not surprising that no very satisfactory conclusion has yet been obtained. We will make an attempt at a solution from a simple examination of the motion to be produced in the portion of earth to be turned, which we call the furrow-slice. We shall suppose this separated from the adjacent soil by the vertical cut of the coulter, and, at the same time, from the subsoil by the horizontal cut of the share: a section of the slice, by a plane at right angles to the line of the ploughing, will be a parallelogram A B D C the depth, A C, being the thickness

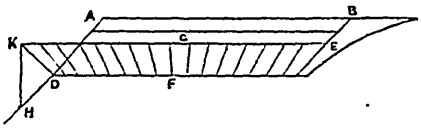



of the slice, and A B its width. Confining our attention to this section of the slice, the object is to move it from its position, A B D C, as cut off by the coulter and share, to that of $b'$ $d'$ $c'$ $a'$, where it is inclined at an angle of 45° to the horizontal line, the surface A B ($b'$ $a'$), being laid on the slice previously turned over, so as to bury the grass or weeds which might be rooted there, exposing the roots to the sun and air. The more uniformly this motion is produced, and the more regularly the successive sections follow each other, the less power will be required to turn over the whole slice. The motion of C D round the point D must therefore be uniform. If the turn-furrow is horizontal at the point where it joins the share, and of the same width as the furrow slice, it will slide under the slice; and if the vertical sections of its upper surface, at equal distances from the share, are inclined at angles regularly increasing with this distance till it arrives at the perpendicular, the turn-furrow will, as it advances, turn the slice from a horizontal to a perpendicular position; the section of it will then be D *a b*. The inclination of the section of the turn-furrow must now be to the other side, forming an obtuse angle with the section of the sole, until it has pushed the slice over at the required inclination of 45°, which theory and experience have shown to be the best adapted to expose the greatest surface to the action of the atmosphere, and likewise to form the most regular furrows for the reception of the seed, which the harrow can then most readily bury.

The surface of this turn-furrow is curved in the form of the spiral thread of a screw, such as would be



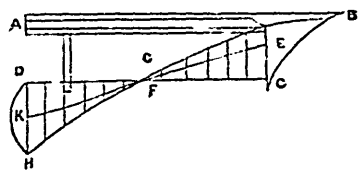
generated by a line moved uniformly forward in a direction at right angles to its length, while it revolved uniformly round one of its extremities. This surface is easily constructed mechanically, thus: take a rectangular parallelogram, A B C D, of the width of nine inches, or as wide as the intended furrow, and of a length equal to four times the width. Bisect B C in E, and D C in F; at F raise a perpendicular F G to the plane of the rectangle, and make it equal to C E. Join E G and produce it to K, making F K equal to F E. Join K D. Draw from every point in C D lines at right angles to C D, meeting the line E K in different points: these lines will form the required surface. The line K D will be found inclined 45° to the horizon, at the angle K D H, which is the inclination at which the furrow-slice is most advantageously laid. To those who are not familiar with solid geometry, these lines may be easily exhibited, by means of a wire inserted at E, and bent at a right angle at K, inserting the bent portion into the




board A B C D at D, so that it will be inclined 45° at D, lying in the direction of E K. Care must be taken that G F be equal to C E, and perpendicular to the board.

It is evident that, as the plough moves on, a particle at E will slide along the line E K, become at G perpendicular to the bottom of the turn-furrow, which should be parallel to the sole, and at K be at an angle of 45° with that line. If the slice were a solid substance, this line, E K, would be all that is required to turn it in its proper position; but as the soil is generally loose, and would crumble to pieces, a support must be given to it by a surface at least as wide as the slice. This surface is generated by drawing lines from different parts of D C at right angles to this line, and meeting the line K E. These lines will be at different angles to the

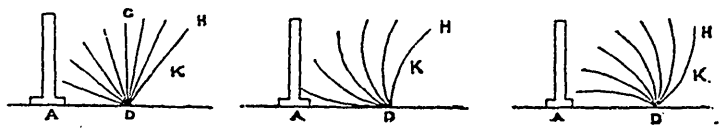
*Horizontal Plan of the Plough.*




A B, the Sole. C, the Fin. D C, the bottom of the Turn-furrow.

horizon, nearly horizontal at C, where the fin of the point begins, perpendicular at F, and at 45° beyond it at D. The curve thus generated will be found to turn over soils of a moderate tenacity very perfectly. If it is very light, the surface may be formed by arcs of circles with a considerable diameter, the concave part upward; if it is very tenacious, the convex part of the arches may be upward. Thus the surface may be varied without altering the fixed line E K. The annexed figures will explain this. The distance of the perpendicular F G from the fin of the share may also be varied, either lengthening or shortening the turn-furrow as experience may show to be most advantageous.

*Sections of the three different Turn-furrows, at different distances from the Heel.*




A plough has lately been constructed on this principle; it promises to realize the expectations formed of it. In soils of a loose, mellow nature, it answers completely, and does the work more perfectly than any other plough. It unites the parallelism of the sole and bottom of the turn-furrow of the Flemish plough with the improved shape of the turn-furrow. By adopting the variations in the shape of the turn-furrow which we have suggested, this plough may be adapted to any soil, and be used with or without wheels.

Ploughs were formerly made of wood, having those parts covered with iron where the greatest friction takes place, the share and coulter only being of iron; but in consequence of the greater facility of casting iron in modern times, most of the parts are now made of this metal. The beam and stilts are still usually of wood, but even these are now sometimes made of wrought iron and cast iron. The advantages of iron are its durability and the smaller friction it occasions when once polished by use. The inconveniences are the additional weight of the instrument, and consequent greater friction of the sole. Recent experiments have proved this to be greater than was generally suspected. A great improvement has been introduced by making the points of the shares of cast iron, which, by a mode of casting the lower surface on a plate of metal, makes one surface much harder than the other; and as the softer surface wears more rapidly, a sharp edge is always preserved.

The stilts of the plough are mostly of wood. Where the soil is light and crumbling, without stones, a single handle or stilt is sufficient; but where some force is occasionally required to prevent stones or other obstacles from turning the plough out of its course, two stilts are most convenient, placed at a more obtuse angle with the sole of the plough.

The force required to draw a plough depends not only on the nature of the soil, but also on the shape of the plough, and especially on the position of its different parts with respect to each other, so that they do not counteract each other.

If a plough were drawn in the direction of the sole, the obliquity of the turn-furrow would cause it to turn towards one side, and it would require a considerable force to keep it straight. In order to prevent this, the line of draught is placed at an angle, which varies with that of the turn-furrow and the force required to push the furrow-slice over. To adjust this angle, so as to cause the plough to keep in the intended line, there is a contrivance at the end of the beam to change the position of the ring, by which the plough is drawn to the right or left of the line of the beam, and another by which it may be raised or lowered, In most ploughs the beam, having been originally set at a small angle, with the sole towards the right, has an arch of wood or iron at the end. The end of this iron, which is called a bridle or clevis, has several projecting hooks in the oblong curve which terminates it, on which an iron ring is hung at different heights. By these contrivances the plough may be drawn from a point on either side of the beam, and higher or lower, as may be required. When the plough is found to *take too much land*, as ploughmen

say, that is, tends to increase the width of the slice cut off by the coulter, the bridle is shifted to the left by moving the pin into another hole; when it goes *out of the land*, as it is called, that is, diminishes the width of the furrow-slice, the pin is moved a hole or two to the right, until the plough has no tendency to deviate to either side. If it inclines to rise out of the ground, the ring is shifted in the iron bridle, and placed in a hook or notch higher up; if, on the contrary, it dips too deep, the ring is hooked lower. Thus a plough may be made to go straight and at a regular depth, without any more force being applied to the stilts than is required to counteract inequalities in the land, or accidental obstacles, such as stones or roots, which might throw the plough out of the ground. When the soil is of unequal texture, it is useful to have a small wheel connected with the fore part of the beam, so as to prevent its dipping downward, which would require a great pressure on the stilts to keep the point of the share up, and thus increase the friction of the sole on the ground, and, consequently, the labour of the horses. In the Rutland plough, two wheels are connected with the beam, one of which runs in the furrow to the right, and the other on the unploughed soil to the left. When the plough has been well adjusted, and the larger wheel runs in the angle of the furrow, it acts as a guage to regulate the width of the slice, as well as its depth; in very uniform soils without stones, the plough, when set in the proper direction, will make a very straight and even furrow, parallel to the one in which the wheel runs, without any person holding the stilts; so that all that is required is to turn the plough at the end of each furrow, and set it into the proper line to form the next. As this admits of a very correct adjustment, no unnecessary force is required to draw the plough, and hence this plough appears to be the easiest for the horses; and if the wheels are not very heavy, and the plough is of a good form, it certainly requires less power to move it than many which are without wheels. There are some very irregular and stony soils, where a common swing-plough can scarcely be kept steady without the help of wheels, and where it would not be so convenient to have the beam fixed on the wheels. In this case, a separate carriage is necessary, that the ploughman may have a fulcrum on which he can raise his plough, or turn it to either side to avoid any considerable stone or other obstacle. As a general rule, it may be safely asserted that a slight but strong swing-plough, in the hands of a clever ploughman—with one wheel in particular soils, but, in general, without any wheel—will effect its purpose with the greatest precision, and the least exertion of the horses drawing it. Theory and practice agree in this; and if any experiments appear to throw a doubt upon it, we shall probably find some circumstances which have influenced the result, when wheel-ploughs have appeared to require the least power of draught. But wheels have one advantage—they will enable an inferior ploughman to make better work than he could possibly do without them; and that, too, with less labour to the horses, because, from his want of skill, the swing-plough would be continually subject to sudden deviations, requiring him to use his strength to counteract them; and each exertion of the ploughman adds to the labour of the horses.

The numbers in the following table show the comparative draught of the same ploughs in different soils; they are from Mr. Pusey's experiments:

| | | |
|---|---|---|
| Trial 1. | Sandy loam | 17¾ stone. |
| " 2. | Clay loam | 47¼ " |
| " 3. | Loamy sand | 16½ " |
| " 4. | Strong loam | 31¾ " |
| " 5. | Clay loam | 28¾ " |
| " 6. | Moory soil | 20 " |

"Without entering into any comparison of ploughs differently constructed, it is evident that the shape of the plough must vary with the nature of the soil which it is to turn up. A light soil must be shovelled up; a mellow one may be turned over with any kind of mould-board; a very stiff, tenacious soil, which adheres to any surface pressed against it, will be more easily turned over by a few points of contact which do not allow of adhesion. Hence the point and turn-furrow have been made of all imaginable shapes, and while one man contends for a very concave form, another will admit of nothing which is not very convex. That plough will, no doubt, have the least draught which is best suited to the soil which it has to move. The lighter the plough is, consistently with sufficient strength, the less draught it requires, all other circumstances remaining the same. Lightness and strength combined are, consequently, great advantages, and if a very light plough does its work as well as a heavier, there can be no doubt that it is preferable. Durability is nothing compared with the saving of one horse in three; it is cheaper to have a new plough every year than to keep an additional horse all the year. If a wooden plough is found to be more easily moved than an iron one, there can be no doubt which should be preferred.

## A MUNIFICENT PROPOSAL.

We learn from the *Journal of Education*, that the Chief Superintendent of Schools for Upper Canada, has received a communication from a gentleman in England, generously offering a special sum of money, to be placed at Dr. Ryerson's disposal, for the noble purpose of opening 500 new schools in the western portion of the province, "for a sound religious and scientific education." Agriculture, it is suggested, should form a part of the routine of study to be pursued in those schools. Sincerely do we hope, that so valuable and patriotic an object may be realised. If we were to enter upon a tour of agitation, our motto should be, EDUCATE, EDUCATE, EDUCATE. For upon "a sound religious and scientific education" depend alike the happiness of individuals and the prosperity and safety of the state.

## FIFE'S SPRING WHEAT.

Otonabee, Colborne District.

To the Editors of the Agriculturist.

MESSRS. EDITORS,—One of our farmers having been so fortunate as to introduce a new kind of wheat into this township, of which a brief notice was given in the *Cobourg Star*, 12 months ago; I trust a more full account of it may not be unacceptable to your readers, as from its tendency to resist the effects of rust, and its adaptation to low black soils; it requires only to be known to be extensively cultivated and highly valued.

Eight years ago Mr. David Fife having a friend about to revisit Scotland, requested if an opportunity occurred, that he would forward to this country a small quantity of wheat from some of the northern ports of Europe. On landing at Glasgow he found a vessel discharging a cargo from Dantzic; having procured a portion, he sent it to Mr. Fife, who sowed it the spring following, and it came up various kinds, as might be expected, and the whole was affected by rust, except this variety, of which there was but five ears, and two of them were destroyed by cattle, yet from the remaining three ears he raised the third year half a bushel; from the produce of this he supplied some of his friends with a few bushels, and it began to be noted for not rusting, and one person had twenty-eight bushels from one bushel sown. Next year the Agricultural Society introduced the Club

wheat as a change of seed, which being sown along side of the new wheat in many instances, and the former being rusted so as to be worthless, while the latter was not the least injured; so established became its superiority that last spring the Agricultural Society thought it advisable to purchase 260 bushels to distribute amongst its members, rather than it should be taken out of the township, and the principal holder of the wheat refusing to take less than two dollars a bushel for it, that price was given by the Society, and many bushels were sold to the neighbouring townships at the same rate, many people applying for it in vain.

It is rather a late kind of wheat being 8 or 10 days behind the Club or Siberian, if sown at the same time, and this scorching summer has not suited it so well on dry soils, but on low black-ash swales and any similar place. not too wet for wheat to vegetate, it succeeds well, and its bright yellow appearance confirms the application of "*The Golden Grain*" so often applied to wheat, though perhaps some of your readers may think that the price paid for it gives it a better claim to that title.

A sample of the wheat shown by Mr. James Fife obtained a prize at the Provincial Exhibition last year, and a specimen will accompany this letter, together with an advertisement, which, by your giving publicity to, will oblige

Your obt. Servant,

HENRY BAWBELL,

*Sec. Otonabee & Ashphodel Agr. Society.*

October 12th, 1849.

[A sample of this wheat may be seen at our office. It seems to be pure, and the quality is good. From what we have heard in different quarters, we consider it well deserving the attention of wheat-growers, particularly such as have low or wet land.—EDITOR AGR.]

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STATE FAIR AT SYRACUSE.—The Ninth Annual Show and Fair of the New-York State Agricultural Society took place at Syracuse, on the 11th, 12th, and 13th of September. Considered as a whole, the display may be said to have surpassed those of former years. The people were out *en masse;* the number which entered the show-grounds could not have been less than sixty-five to seventy thousand.

The receipts for tickets and memberships, were eight thousand fifty-five dollars and fifty-five cents. The assemblage was gathered chiefly from our own State, though there were thousands from the various sister States, from Maine to Texas, and from the Canadas.

This association is evidently exerting an important influence—an influence which is not only felt throughout the whole of our own country, but is even affecting our national relations. It is opening and cultivating an acquaintance abroad, which cannot fail to be favorable to the promotion of peace, and a proper regard for our character as a people. At home, its annual exhibitions are justly looked upon as the most important gatherings of our citizens. On these occasions, men of all sects and parties mingle harmoniously together, mutually ardent for the advancement of a common object—the real prosperity of the country. Here friendships are formed by which party and personal animosities are worn away, and the people are brought to look, unbiased, at those principles which concern their welfare.

The show-grounds were well situated. They were on a hill of sufficient elevation to give a fine view of the surrounding country, embracing an area of twenty-five to thirty miles. The field, which contained upwards of twenty acres, had some inequality of surface, but not more, perhaps, than was favorable to general picturesqueness. As at Buffalo, the cattle were placed in a grove, where they were protected from the scorching heat of the sun. The general arrangement of the classes was very convenient, and does much credit to Messrs. Sotham & Fuller, who had charge of this department.—Stalls were provided on the ground for about seventy horses, but from the great number exhibited, it was impossible to accommodate in this way but a small proportion of the whole.

We have only room at present for the following notices:

Of *Horses* there were fine specimens of the different classes; but as the writer was closely engaged in other departments, he had not an opportunity of seeing all the animals exhibited.

The *Cattle* were more numerous, and in general of better quality than have ever before been offered at our shows. The greatest display was by the Devons. The short-horns were better, on the whole, than at our shows for several years past. Comparing the different classes, we think the Herefords and Devons were more *evenly* good than the Short-horns, though among the latter there were some splendid animals.

The fat cattle were numerous, and generally excellent. A fine pair of Durham oxen, five years old, weighing 5,000 lbs., were shown by Mr. Sheldon of Sennett, Cayuga county; a fine pair of the same breed were offered by Mr. Rone of Mount Morris, who also exhibited two remarkably fat cows, nearly full blood Durhams. Mr. Leach, of Eaton, Madison county, showed a very fine cow, four years old, weighing 2100 lbs., a cross of the Durham, and a pair of large oxen. Mr. Nowlan, of Sennett, showed a pair of cross-bred Durhams, six years old, weighing 5236—very fat. Mr. Doty, of Wyoming county, showed a very large pair of red oxen, one of which was a very fine animal. A three year old Durham heifer, offered by Mr. Barber, of Cortlandville, attracted much and deserved commendation. She is an animal of uncommon symmetry, and was not excelled in the essential qualities of a *grazier* by any animal on the grounds.

*Sheep* of all classes were well represented.

The show of *Swine*, though better than that of some years, was not equal to the best.

*Dairy Products* were less in quantity than at Buffalo; but the display was, notwithstanding, creditable in extent; and we learn from the committee having charge of this department, that the quality of the butter and cheese was generally excellent. We observed that there was considerable competition from the principal dairy districts in this state, and there were several samples of cheese from Ohio.

The *Implement Department* was admirably filled, forming a display exceeding anything of the kind which we have ever before seen.

The *Plowing Match* was contested by eighteen teams. The writer was not present at the match, but from having seen the ground after the work was done, is enabled to say that it was done in a manner superior to that of any he has before witnessed at the matches under the auspices of the society.

"*Mechanics' Hall*" was filled with a multitude of articles, to notice all of which would require much more space than we can spare. We noticed a "Dairy Steamer" for warming and heating milk in cheese-dairies.—Certificates in relation to its operation stated that steam sufficient for warming the milk of sixty cows can be got up in thirty minutes. It appears to be a useful article. It was exhibited by J. H. Bushnell, Utica.

In the *Fruit and Floral Department*, the display was less extensive than in some former years, especially in flowers, which, from the unprecedented drouth which has prevailed in the central and western portions of the state, have not developed themselves in their usual per-

fection. The size and quality of the fruits, too, have been affected by the same cause. Still the fruits exhibited, were mostly of a good quality and fine appearance.

The *Address* by Prof. Johnston was listened to by a very large audience, and was received with much approbation. The subject-matter consisted of two principal divisions. The first, embracing a general view of the agriculture of the different countries of Europe; and the second a brief exposition of the principles of agriculture and its connection with the sciences. It was a document of considerable length, and occupied upwards of an hour in the delivery; but the deep interest manifested by the people in the beginning was maintained to the last, as was indicated by the hearty cheers which greeted the speaker at the close. In a word, it may be said that the high reputation which Prof. Johnston had acquired among our people, through his writings, was fully supported by the address; and we cannot but flatter ourselves that the impressions by the first acquaintance have been mutually favourable.

Among the distinguished visitors at the fair, were Hon. Henry Clay of Kentucky, Vice-President Fillmore, Gov. Fish, Ex-Gov. Marcy and Lieut. Gov. Patterson, Hon. Frs. Granger of New York, Gen. Wool, Hon. Mr. Clingman, M. C., from North Carolina, Hon. H. L. Ellsworth of Indiana, and numerous delegates from the Canadas and the Agricultural Associations of the different states of the Union.—*Albany Cult.*

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STATE OF THE CROPS IN THE OTTAWA DISTRICT FOR 1849.

*From the Report of the Ottawa District Agricultural Society.*

Mr. PRESIDENT,—Agreeably to your request we send you a brief report of the general state of the crops throughout the country that we have travelled.

The early sown wheat is more than an average crop; but the late sown rather less. The latter, though not inferior in quality, will probably yield from 20 to 30 per cent. less in bulk. Peas are scarcely an average, though we saw some excellent samples. In general they have been injured by drought. Hay is not one half the average crop; and oats not much better. There is little barley sown, and the samples shown were nothing extra. The same observations are applicable to the rye. Corn is not such an abundant crop as last year; neither has it ripened so early—still it is about an average. The potatoes are about half an average; but we found not a single rotten one—there has been a good many planted. Turnips are very promising, and there are a good many sown. Fruit trees appear to be well loaded, but owing to the extreme drought apples particularly are small.—The same remarks may apply to garden vegetables of every sort.

On summing up the state of agriculture generally in the County of Prescott, we are happy to be able to bear testimony to the growing prosperity of the farming interest, and to state that although oats, hay and potatoes are not so abundant as in some former years, the quality of all kinds of produce is good and the prospects of the farmer for the present season are flattering.

We are, dear Sir,
Your most obedient servants,
JAMES WHITCOMB,
JAMES CROSS,
JOHN CROSS.

Chs. P. Treadwell, Esq.,
President.
Ottawa District Agricultural Society for Year 1849.

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Pride emanates from a weak mind; you never see a man of strong intellect proud and haughty.

VALUE OF SHRUNK WHEAT.—We call attention to the following table of the relative value of shrunk wheat, and think it may be useful to those of our readers who have that kind. The quantity of shrunk wheat in the country renders the adoption of some *fair scale* necessary *as a standard*. Much useless altercation may thus be saved when the scales of wheat are made.

The millers of Zanesville and other parts of the Muskingum Valley, in view of the depreciated quality of the wheat crop the present year, have published the following scale of prices by which they will be governed in purchasing. They say:

"The scale of prices will vary as the standard price of good wheat varies in the market. It is manifestly the interest of the farmer under this arrangement, to render his wheat clean and as free from dirt as possible, for as he increases the weight he also increases the price. Wheat weighing *below* fifty pounds to the bushel may be purchased as the buyer and the seller can agree about price and quality.

"Assuming that cleaned wheat weighing 58, 59, and 60 lbs. to the bushel is worth 75c. per bushel, wheat

| | | | | |
|---|---|---|---|---|
| weighing | 57 | lbs. | would be worth..... | 74 cents |
| " | 56 | " | " ..... | 69 " |
| " | 55 | " | " ..... | 66 " |
| " | 54 | " | " ..... | 62 " |
| " | 53 | " | " ..... | 58 " |
| " | 52 | " | " ..... | 53 " |
| " | 51 | " | " ..... | 48 " |
| " | 50 | " | " ..... | 42 " |

"For white wheat, 10 per cent, additional will be allowed on the above prices."

It will be seen from the above scale that wheat weighing below fifty-four pounds to the bushel depreciates from the standard price in greater proportion, owing to the fact that flour cannot be made from these inferior qualities of wheat that will pass inspection as superfine.."—*Ohio Cultivator.*

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KEEPING HENS.—Mr. J. M. Mason, of Orwel, Vt., usually winters two hundred hens. His practice is, to buy pullets in the winter. They cost about twelve and a half cents each. They are fed in a great degree on *mutton*. Mr. M. buys sheep in the fall at low prices—about what their pelts and tallow are worth. The carcasses are boiled, the tallow saved, and the flesh and bones, after being allowed to freeze, are kept till spring,—a suitable portion being fed to the hens daily. They are allowed, in addition to the meat, a little corn, oats, or buckwheat. They lay well through the winter—comfortable quarters being provided for them—and continue to produce eggs in abundance till June. It is found most profitable to sell the whole stock at this period, as they are generally fat, and will bring from twenty to twenty-five cents a-piece. If kept through the summer, they lay but little in the warm months, the eggs will keep but a short time, the fowls grow poor in moulting, and if kept another year will not lay as well as young ones. Mr. M. keeps hens only, and is inclined to think he obtains as eggs, and that the keep better. As to varieties, he has tried several, and thinks the *top-knots* will generally lay rather more eggs the first season: but there carcasses are of less value than most other kinds.

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A poet finds in the simplest flower that blows, a volume of contemplation; the scattered leaves present him with lessons of morality; he hears the voice of God in the wind. He penetrates the mysterious meanings of all that meets the mortal sense, and his sympathies of thought which never yet were uttered in words.

# Horticulture.

## NORTH AMERICAN POMOLOGICAL CONVENTION.

We learn from the October number of the *Horticulturist*, that the annual meeting of this Convention was held at Syracuse, during the week of the New York State fair, and was a very satisfactory one. It appears that this society, and the *American Congress of Fruit Growers*, which held a meeting in the city of New York, Oct. 2nd, are from henceforth to be united. This seems to be a most desirable result. It has been resolved that the next meeting shall be held in the city of Cincinnati, during the autumn of 1850; the meetings to take place afterwards biennially; the session for 1852 to be held in Philadelphia. It will be seen that Canada is efficiently represented in the person of Mr. James Dougall, of the Rosebank Nurseries, Amherstburgh, who occupies a distinguished position in the Convention.

We take the following from the *Horticulturist*.

This is the second session of this convention, and was well attended. The display of fruit, though not extensive, was still very fine.

The meeting was called to order by James Dougall, of Canada West, who nominated Col. Benjamin Hodge, of Buffalo, as Chairman. On motion of Dr. Herman Wendell, Mr. M. B. Bateham, of Ohio, was appointed secretary, *pro tem.* The call for the convention was then read by the secretary, and a committee of five appointed to nominate permanent officers.

On motion, all gentlemen were invited to sit as members, who felt an interest in fruit culture.

The committee consisted of the following gentlemen: N. Goodsell, F. R. Elliott, Chas. Downing, A. Bryant, and J. W. P. Allen.

The convention took a recess.

After being called to order by the chairman, the secretary called a list of the names of the members of the convention, which we must omit for want of room.

The committee on nominations, reported the following gentlemen as permanent officers. The report was adopted.

For President, Dr. J. A. Kennicut, of Ill.

| | | |
|---|---|---|
| 1st | Vice-President, | James Dougall, of Canada West. |
| 2nd | do. | Dr. Herman Wendell, N. Y. |
| 3rd | do. | C. M. Hovey, Mass. |
| 4th | do. | M. B. Bateham, Ohio. |
| 5th | do. | H. P. Byram, Ky. |
| 6th | do. | James G. Mapes, N. J. |

Secretaries—F. R. Elliott, B. Hodge.

The president on taking the chair, thanked the convention for the honour they had done him.

The report of the committee on organization, was received, read and accepted. The report contained the rules for the society, and the apppointment of a committee on seedlings, which appointment was made by the president.

Reports from New York, Vermont, Pennsylvania, Michigan, Illinois and Ohio, were received.

The president suggested that the committee proceed at once to the examination of fruits, as they were perishable articles.

Dr. Herman Wendell, of Albany, offered a preamble and resolution in reference to the consolidation of the two conventions, so that but one meeting might be had in a year, which was adopted. The president appointed a committee for the purpose of conferring with the other society. The following is the preamble and resolution.

*Whereas*, The National Pomological Convention, held at Buffalo, in September of 1848, under the auspices of the N. Y. State Agricultural Society, composed of Delegates of 15 States and the two Canadas was the *first* general convention of such character ever convened in the United States, and whereas that convention unanimously resolved, that hereafter an annual convention of like character should be held under the title of the North American Pomological convention, that the first meeting with that title should be held in the autumn of 1849, at the place where the great fair of the N. Y. State Agricultural Society was to be held, and on the day succeeding the close of the said fair, therefore, we consider this convention entitled by courtesy to perpetuate itself; but being aware that a convention of an analogous character was held in the city of New York in the autumn of 1848, and the said convention organized itself into a permanent association under the title of the American Congress of Fruit Growers, which is to assemble in said city of New York, on the 2nd day of October next, and believing that the advancement of Pomological Science, as well as the inclination and interests of Pomologists throughout this continent, will be best promoted by a merging of the apparent conflicting association into one general organization for future operation, therefore, be it

*Resolved* by this convention, that a committee of five be designated by its president, whose duty it shall be to attend the coming session of the American Congress of Fruit Growers, and confer with the said Congress or a committee whom they may select in relation to the meeting of the two associations, and as far as this convention is interested, the settling of questions of priority of organization, places of next meeting, and title of association, shall be left to the committee whom the two organizations shall appoint, and that we will exert ourselves to induce a general attendance of those interested, wherever the joint committee determine the next convention shall be held, but we cannot omit giving it as our opinion, that the cause of Pomological Science will be most promoted, and the feelings of the great mass of Pomologists best satisfied, if the next meeting should be held at Cincinnati, or some other western city.

The President then named Dr. Herman Wendell, Prof. James G. Mapes, F. R. Elliott, Chas. Downing, and Dr. A. Kennicut, as the committee.

Syracuse, Sep. 14.

## THE CANADIAN COFFEE PLANT—ITS CULTIVATION &c.

Having long been of opinion, that a very great amount of money was annually sent out of this Province for articles of foreign growth, which with a little exertion might be produced by ourselves, in reference to which my attention was more particularly directed to the article of Coffee.

Various substitutes for this have frequently been tried, but hitherto nothing satisfactory has been discovered.

I had for several years cultivated in my garden a plant called the Coffee Plant. I was induced from the name to try it as a substitute for the tropical plant, and found it very much resembled it in flavour, but conceived that if more care was taken in its cultivation it was capable of much improvement both in quantity and quality. I have accordingly for the last two years taken considerable pains to improve it, and I trust with some success, the result of my labours I now most respectfully lay before your society.

The seed when I first procured it was smaller, and much inferior in flavour, and the produce not one sixth what it now is; still I was reluctant to draw public attention to it, until by repeated experiments I came at

last to the conclusion to adopt it as an entire substitute for coffee, as far as I was concerned.

The mode of cultivation I pursue is as follows:—In the fall, plough over a piece of rich land, if possible that which has just been cleared of potatoes, ploughing in as much well rotten manure as I can spare, as like Indian corn land, it cannot be too rich: early in the spring I again plough it very slightly, and harrow it till the mould is as fine as possible; I then divide it into beds from ten to twelve feet wide, and as long as the piece of ground. I procure a board in length equal to the width of the bed, and 12 inches wide, graduated on both sides every 12 inches. I lay this board across the bed, and standing on it, open with a small stick a shallow drill by the edge of the board; the seed, which has previously been steeped in water 12 hours, is then dropped in by hand, one grain only every 12 inches, the drill then closed with the edge of the stick I opened it with; then stepping into the alley, carefully turn over the board. Again, make another drill, planting and covering as before. By this means the plants will stand 12 inches apart each way, and if care is taken to use only good seed, by rejecting all which floats when steeped, almost every one will come up; should any blanks appear, I fill them up on a wet evening, from a small bed I sow in a corner.—All that is afterwards required is, to keep them clear of weeds with the dutch hoe during summer, and when full grown by July, they completely cover the ground. About the middle of September I get some children to commence picking the ripe pods, which may be continued till the end of October or the beginning of November, as they do not all ripen together, they are then thrashed out and cleaned like other peas, but as they do not part from the hull so easily, some method must yet be devised, with rollers or otherwise, to shell them out quicker. The average return is about from two to four hundred pods from one grain, the plant herewith exhibited had about 370 pods when lifted.

In conclusion, Gentlemen, I beg leave to submit the above for your consideration, trusting, that should you consider it worthy of your patronage, you may award such extra prize as you may see meet.

I remain, Gentlemen,
Yours most respectfully,
WILLIAM MARCH.

To the Directors of the Provincial Agricultural Society.

[From a slight inspection of a dried specimen, we are inclined to conclude that the plant called above "the Canadian Coffee Plant," belongs to the vetch tribe, and it is said to be indigenous to this country. Mr. March received the Society's Diploma for exhibiting it at the Kingston Show, and we believe he is prepared to furnish the public with seed. We hope its cultivation will be fairly tested, likewise its qualities as a beverage, that the public may be satisfied in regard to its being of a nutritious character.—EDS. AGRIC.]

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ON THE DISADVANTAGES OF DEEP PLANTING TREES.

*From the Horticulturist.*

An impression obtains among American gardeners, that trees should be planted deeper in this country than in Europe, on account of the greater warmth of the summer season. This impression is erroneous; it can only have arisen by imperfect observation, as it is opposed alike to comparative experiment and to every known principle of vegetable physiology.

Were not wonder and astonishment incompatible with the character of a wise man, one might think it strange that any person could be found in the universe, who would persevere in doubtful practices when very simple experiments would often set disputation on subjects forever at rest. But, as Marryat's Stapleton says, "it is all human natur;" and so it must be endured, and the best made of it. Such may be said on the present subject. Let two hardy fibrous-rooted shrubs be planted side by side, the only difference being, that one be planted twelve inches beneath the surface and the other only six, and twelve months will show that the shallow planted shrub has much the advantage. If the soil be any way rich, the difference between them will be the more marked. I once had to plant a very wet piece of ground with hardy evergreen shrubs. I had not sufficient influence to get it drained. I had only to plant. Knowing well these trees would do me no credit if planted *in* such soil and in the ordinary way, I planted them *on* the ground. I had the ground dug up, as if for ordinary planting, laid the roots flat on the surface, threw on them broken sods, and covered the whole with fine soil. These trees afterwards afforded me as much satisfaction as any I ever planted. They contrasted strongly with the yellow appearance of others which had been planted *in* the soil before.

It is the bane of gardening, that it is afflicted with a host of mere theorists. Men of no experience whatever—wanting even an observing turn of mind—will often pass themselves off on the public as first rate gardeners. This acts injuriously on the prosperity of gardening in many ways. One is, that with inconsiderate people, theory is often underrated in its importance. This should not be. It ought to be an established rule, that no person should be deemed a first rate member of any profession, who is not able to tell *why* a thing is to be done as well as *how*. He should, in other words, be master of the theory of his profession as well as the practice. This holds good in the simplest operation. A scientific workman is worth two mere laborers: every one knows that. With these views, it is necessary to consider why trees should be shallow planted.

It has not yet been placed beyond dispute, that vital action, or life in vegetable organisms, is caused by electric agency. Many modern physiologists incline to that opinion. But so far as the principle has been tested by mechanical contrivances, it seems to be a failure. It is, however, certain that vegetable life derives an essential stimulus from heat. A great, probably the greatest, part of the heat necessary to the existence of vegetable life, is derived through the medium of the roots. Hence arises the necessity, that no impediment intervene to interrupt the relations naturally existing between heat and the roots. It is essential that the temperature of the atmosphere should generally approximate to the soil around the roots; because the evaporation of the juices of a plant through the leaves, by a given degree of heat, the same or nearly the same degree of heat can only supply, through the roots. And if the roots of plants, therefore, be in a colder medium than the leaves, more matter will be evaporated than the roots can supply; and if the roots are in the warmer medium, more matter is received into the system than the leaves can digest. In either case, death is the consequence. It is probable the temperature of the earth and air never coincide altogether; one being sometimes much warmer than the other, and sometimes the contrary. It seems to be an established principle, that vegetation is healthier the nearer these approximate. There is a great difference in the temperature of the soil at different depths, near the surface of the earth. Lindley has somewhere published a case, where a trial in summer gave 61° Fahrenheit, at 6 inches below the surface; and at 3 feet, 44°. The nearer then the roots are to the surface, the more equal will be the heat to the roots and to the leaves.

Even could these principles be inviolate, when deep planting is resorted to, it is doubtful whether plants

could long remain healthy so. It is an error to suppose, as many do, that the roots of plants feed only on the soil. They feed also on the gases floating in the atmosphere, through the decomposition of organic beings. More especially do they feed on ammonia, from which they probably derive the major part of their nitrogen. The mechanical force of the descending rain brings these substances to the surface, where they are left to be absorbed by the roots in the immediate vicinity. Roots which are far beneath the surface can so receive no benefit from these revivifying circumstances.

It follows, from these principles, that the nearer the roots of plants are to the surface of the earth, consistently with their real known *aversion to light*, the nearer will they be to those conditions which nature's immutable laws declare to be most conducive to a perfect state of health. Should the transplanted tree be likely to suffer from drouth, a good mulching will effectually prevent that, besides be of good service in affording nutriment.

[We can bear our testimony to the accuracy of Mr. Meehan's statements, as to the disadvantages of deep planting. We have seen hundreds of acres of ash plantations in England, resting on a wet clay subsoil, yielding no produce after a lapse of sixteen or twenty years. It is the same with fruit trees, under similar circumstances. Deep planting may succeed in rich and dry soils, but on such as are cold and wet success is physically impossible. Indeed, we very much question the propriety of planting in the latter at all, without first effecting a thorough artificial drainage, and this should be done deep, or the roots will speedily obstruct the drains.—Ed. Agriculturist.]

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Fruit Trees by the Road Side.—The practice o setting out fruit trees by the road-side cannot be too highly recommended. In many parts of Europe this practice is general, and the fatigued traveller acknowledges the well-timed hospitality thus afforded him. The excuse is often made, that the fruit will be stolen, but if the practice were general, the amount of fruit taken by wayfarers would only be what common hospitality would freely grant; and in Germany every third tree, by custom, may be *tabooed*, (the owner of the adjoining farm ties a piece of rag to one of the lower limbs of the tree,) and no traveller will touch it. Travellers inform us that no reward will tempt a German stage-driver to regale his passengers with fruit from a marked tree—two out of three thus being left for their use, if desired, renders the selected tree free from the chance of being used. The amount of fertilizing materials continually wasted upon roads would be rendered available by such a practice, and nothing but extreme selfishness will prevent the use of these materials for public benefit. Many of the larger sorts of fruit trees are highly ornamental and afford fine shade, while the use of fruit trees for shade, like the display of costly mansions, only excite the poor to envy, without adding materially to their comfort or health.—*Working Farmer.*

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Improvement of Apples from the Crab Apple.—It has been stated by some writers, and generally believed, that our immense variety of apples all originated from the crab apple. A paragraph in the last American Farmer, quoted from the Alabama Planter, corroborates this statement as follows:—"Our friend, James Magoffin, Esq., of St. Stephens, has for a series of years bestowed considerable attention upon the apple, and among the many fine sorts he now cultivates, has obtained, by successive plantings of the seed of the native crab apple, one of the best fall and winter apples in the Union."

From this fact we may learn the good results of experimenting with fruits in order to improve their qualities. If a man could live long enough to pursue these researches, he would find astonishing results from his experiments. Van Meres, Knight, and some others, were successful during their day, in improving and procuring new fruits from poor and apparently worthless parents.—*Maine Farmer.*

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Instinct of the Ant-Lion.—Among the instincts which direct animals in the acquirement of their food, few are more remarkable than those possessed by the larva of the ant-lion, a small insect allied to the dragon-fly. This animal is destined to feed upon ants and other small insects, whose juices it sucks: but it moves slowly, and with difficulty, so that it could scarcely have obtained the requisite supply of food, if nature had not guided it in the construction of a remarkable snare, which entraps the prey it could not require by pursuit. It digs in fine sand a little funeral-shaped pit, and conceals itself at the bottom of this until an insects falls over its edge; and if its victim seeks to escape, or stops in its fall to the bottom, it throws over it, by means of its head and mandibles, a quantity of sand, by which the insect is caused to roll down the steep, within reach of its captor. The way in which the ant-lion digs this pit is extremely curious. After having examined the spot which he purposes to establish itself, it traces a circle of the dimensions of the mouth of its pit, then placing itself within its line, and making use of one of its legs as a spade, digs out a quanity of sand, which it heaps upon its head, and then, by a sudden jerk, throws this some inches beyond its circle. In this manner it digs a trench, which serves as a border of its excavation, moving backwards along the circle until it comes to the same point again; it then changes sides, and moves in the contrary direction, and so continues until its work is completed. If, in the course of its labors, it meets with a little stone, the presence of which would injure the perfection of its snare, it neglects it at first, but returns to it after finishing the rest of its work, and uses all its efforts to get it upon its back, and carry it out of its excavation; but if it cannot succeed in this, it abandons the work, and commences anew elsewhere. When the pit is completed, it is usually about thirty inches in diameter by twenty in depth; and when the inclination of its walls has been altered by any slip, as almost always happens when any insect has fallen in, the ant-lion hastens to repair the damage.—*Carpenter's Animal Physiology.*

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Mowing Pastures.—We have before spoken of the necessity of keeping the grass of pastures from running up to seed and dying on the ground. As grass grows with more rapidity in the earlier part of the season than at a later period, it is difficult to keep properly fed down, without putting on more stock than can be kept on the land after the *flush* of feed is over; and yet, if the grass goes to seed and lies on the ground, the after feed will be less in quantity and of a poorer quality. The difficulty may be overcome by mowing the grass at the right time—before it has run to seed, at all events. This may be done on many pastures to good advantage, the hay obtained being of good quality for any kind of stock; and the pastures are left clean, start equally, and afford a good growth of fresh afterfeed. We have lately met with several farmers who have followed this practice for many year, and they agree with us in regard to its utility.

# Education.

## King's College Commencement — Address of His Excellency the Chancellor.

*(Reported for the Globe.)*

Thursday was the day appointed for the annual convocation of King's College, Toronto, for the purpose of conferring degrees, &c.; and the occasion was looked forward to with peculiar interest, from the fact that his Excellency the Governor-General was to be present in his capacity of Chancellor of the University, to take part in the ceremonies of the day.

About noon, his Excellency, accompanied by the Hon. Colonel Bruce, arrived at the Yonge-street wharf, from Drummondville, on board H. M. steamship *Cherokee*, and was received by the Rev. Dr. McCaul, Vice-Chancellor of the University. A guard of honour of the Rifle Brigade was in attendance, and the band struck up "God save the Queen" as his Excellency landed. His Excellency immediately entered an open carriage that was in waiting, with the Rev. Dr. McCaul, and drove rapidly off along Front-street, towards Ellah's Hotel, amidst the respectful salutations of the spectators.

The convocation was held, as usual, in the chamber of the Legislative Assembly in Parliament Buildings, and shortly after the doors were thrown open—at half-past one o'clock—every inch of the space allotted to visitors was densely crowded. We observed a very large number of ladies present, who appeared to watch the proceedings with lively interest.

Shortly before three o'clock, his Excellency the Chancellor, accompanied by the officers and professors of the University, and the graduates and under-graduates, together with the masters of Upper Canada College, entered the hall and took their respective stations.

His Excellency, who looked remarkably well, wore the handsome costume of Chancellor of the University, viz., robes of purple velvet with gold border, and cap with gold tassel; his Lordship also wore the star and ribbon of the Order of the Thistle.

After the presentation of a Latin address to the Chancellor, to which his Excellency replied in Latin, the business of the day commenced.

The recitations were highly creditable to all concerned in them, especially an original English poem on Sir Robt. Sale, by T. A. Hudspeth, B.A., which elicited very great applause. The certificates of honour and medals were presented to the successful competitors by his Excellency the Chancellor, who accompanied them with an appropriate address. The prizes were presented in like manner by the respective professors, who complimented the students very highly on their proficiency and application.

At the close of the proceedings, which were throughout of a very interesting and imposing character, his Excellency the Chancellor rose and addressed the audience in a clear and distinct voice. He said:—

Ladies and Gentlemen,—I am informed by the Rev. Vice-Chancellor, that it is customary on these occasions for the person who has discharged the functions of Chancellor, to address a few observations to the audience, with a view of communicating such information as he may be able to furnish, with respect to the state and condition of the University. I feel, ladies and gentlemen, that I shall discharge this office very imperfectly; for, although on the occasions of my brief visits to Toronto, I have devoted as much time as I could spare to the University, to which institution I have always been drawn by a very strong attraction; and although while at a distance from Toronto, I have endeavoured by all the means in my power to keep myself acquainted with its current affairs, I must still confess that I feel that I have accomplished this object less fully than I should have desired; and I cannot conceal from you my opinion, that so long as the seat of government was at a distance from Toronto, it was not in the power of the Governor-General to discharge the duties of Chancellor of the University in a manner altogether satisfactory to himself or beneficial to the institution. (Loud cheers.) I am very glad, ladies and gentlemen, that it is in my power to make this avowal on the present occasion, in the presence of the learned professors, and of other gentlemen who are interested in the welfare of the institution; because I can most conscientiously affirm, that no one of them either feels more acutely, or more unfeignedly regrets the deficiency with which I may be chargeable in this respect, than I do myself. I am indebted to the Vice-Chancellor for some information which I shall be happy to give you.

It appears that since the year 1843, when this institution was opened, two hundred and fifty students have been entered upon the books, that seventy degrees have been conferred, that there have been fifteen medalists and four Wellington scholars; and no one that has had the opportunity that I have had, of forming an opinion with respect to the quality of the education which is given here, can doubt that this institution has already conferred vast benefits upon Canada. (Great cheering.) And let me observe, ladies and gentlemen, that very peculiar importance attaches to the cause of education here among us at present. I speak now not principally of the general or common school education in which the masses of the community may participate, but of education in its highest branches—of education of that quality which requires such a sacrifice of time and of labour, as few only of the members of the community can afford to give. It appears from statistics which may be depended upon, that the population of Western Canada has during the last thirty or forty years doubled itself in each decennial period; and other statistics, no less reliable, and indeed the observation of any person who has travelled through the country and seen the excellent houses, the well-cultivated farms, and other indications of comfort and prosperity to be met with on every side, show that individual comfort and well-being has been advancing amongst us with equal strides. (Cheers.) Now, surely under these circumstances, it is incumbent upon us to use every exertion, lest the material progress of the country should outstrip its intellectual progress—lest wealth and luxury, increasing without a corresponding increase in those tastes and habits which accompany a high state of civilization, should, like rank and noisome weeds, spread over the surface of our society. (Loud cheering.) Let me assure you that the apprehension which I have now expressed, is by no means chimerical; for we live in an age and in a condition of society, more favourable to the growth of what may be called the acquisitive propensities—to the exclusive growth of the commercial spirit, than any which has existed before in the history of the world. And what, ladies and gentlemen, does that history tell us, with respect to the fate of those communities in which that spirit has inordinately and disproportionately grown and developed itself? Even now, we linger with fond affection among the ruins which were adorned by the generous art of Phidias, among groves and temples which have echoed the profound teachings of Aristotle, the transcendant philosophy of Plato, the brilliant and persuasive eloquence of Demosthenes, the fervid lays of Æschylus and Pindar, and the chaste measures of Sophocles and Euripides. Nay, more than than this—a lurid grandeur hangs like a halo over the memory of those rude and gallant people, whose deeds of war and chivalry were tempered by a reverence for the beautiful and good, and by a generous spirit of self-sacrifice. But we pass by the monuments of such cities as Carthage and Tyre, and what do we find written upon them, except the solemn warning, "Vanity, vanity, all is vanity"? (Loud cheering.) There are

upon this continent, cities which in an infinitely shorter space of time, have engrossed commerce and accumulated wealth far exceeding that of Carthage or of Tyre; and, although it be true that our progress in Canada has been more equable, that it has been more generally diffused over the country as well as in the towns, and that therefore we have no reason for the same degree of apprehension here; yet, can we say that the caution which I am now giving you is altogether uncalled for, when we find that questions most deeply affecting the well-being of ourselves and of our children—questions involving the highest considerations of public duty and of public morals, are discussed and determined on with an exclusive reference to commercial considerations? (Cheers.) Now, gentlemen, among the agencies which I believe to be most potent in keeping this spirit in check—a spirit, allow me to say, which is most valuable and useful within its proper sphere, but most dangerous when allowed to transgress beyond it—is education; an education such as a university can give—an education which proceeds upon the assumption, that it is well for man that his highest faculties should be cultivated—an education which proceeds on the assumption, that knowledge is desirable for its own sake alone, independently of the adventitious advantages which it affords to its possessors. (Cheers.) Ladies and gentlemen, we all know how frankly and unreservedly the philosophers of the olden time admitted this great truth; we know that the best and purest among them based their conception of human felicity upon earth, not on the acquisition of wealth or honour, or in the hot chase after such transitory good, but in a condition which was designated by them by the term σχολη—a condition of beatific repose, in which the highest faculties of the human soul, secure from perturbations from without, and from the cravings of appetite within, might be enabled peaceably to energise. It may be true that we cannot, as practical men, or as Christians, accept without qualification this ideal of the heathen philosophy; it may be true—as it undoubtedly is true—that few among us can expect, while we are in this militant condition, to be able to give to those who would counsel us to take repose, any other reply than that which was given by a lion-hearted hero of the Church at the time of the Reformation, to the friends who tendered to him similar advice, in these memorable words, "Rest, rest, have we not eternity to rest in?" (cheers); it may be true—as it undoubtedly is true—that we have a better and surer definition of σχολη than any which the schools can furnish in the sublime but simple sentence, "ἄρα ἀπολείπεται σαββατισμὸς τῷ λαῷ τοῦ Θεοῦ:" Nevertheless, I feel that the University of Canada has a high office to perform—to hold aloft the lamp of science above the mists and murky vapours that would obscure its lustre—to inculcate constantly and steadily a love for all that is loveable and of good report, and to point to those sublime heights which can only be scaled by the patient, persevering and single-hearted. God, in his mercy, grant, that under all vicissitudes and changes, under all circumstances of season and of time, the University of Canada may ever remember how holy and how important are its functions.

His Excellency here resumed his seat, amidst enthusiastic and prolonged cheering from the crowded audience.

At the conclusion of his Excellency's speech, the meeting was closed with the customary formalities.

[We are compelled to omit the list of graduates, &c., for want of room.—*Ed. Jgr.*]

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The earth is the great nursing mother of all plants; they in their turn minister, directly or indirectly, to the nutrition and sustenance of animal life; the lamb and the kid feed upon herbage, the direct growth of the soil; the wolf and other of the carnivora feed upon the lamb and the kid—thus they derive their food indirectly from the soil.

## NORMAL SCHOOL, TORONTO.

The semi-annual examination of this valuable institution was held on the 10th, 11th and 12th of October, and it was throughout of a very satisfactory character. We regret that our space will admit only of a brief, general notice. His Excellency the Governor-General attended some parts of the examination, and evinced great interest in the proceedings. His Lordship then rose and addressed the auditory with that fluency of speech for which he is celebrated. He expressed his gratification at the information he had derived from the explanations offered by Dr. Ryerson and Mr. Hind, and satisfaction at the creditable examinations through which the students had passed, complimenting Messrs. Robertson and Hind on their efficiency as teachers. There was scarcely any of the duties which devolved upon him, in which he felt greater interest than in promoting education; and if there was any part of the observations which fell from Mr. Hind, which he would feel disposed to criticise, it was that which related to Agricultural Chemistry—a study which his Excellency would wish to see pursued in all the public schools of the province. It seems that in all new countries, Canada included, there was too little attention paid to agriculture. The learned professions, as they are generally called (and he did not wish by any means to depreciate them), appeared to be elevated at the expense of agriculture. He could not see why this should be so—for there was no more honourable pursuit than the cultivation of the soil, and there certainly should be none more so in an agricultural country like Canada. His Excellency related an anecdote which he overheard in the course of his tour. A farmer with a large family of sons, in conversation with a friend said, that he was determined to make a man of *one* of them at least. And how do you suppose he was to make a man of him? By making him a lawyer, a doctor, or a clergyman. (Laughter.) The clergyman had to study those subjects which connect man with his God—which connect eternity with time; the lawyer had to study those matters which relate to the social condition of those amongst whom he lives; and the doctor had to study subjects relating to human physiology; while the farmer, by making his business a profession, and paying due attention to the study of vegetable physiology and agricultural chemistry, would find an ample field for the exercise of his mental faculties, of more than ordinary interest, sufficient to elevate him in the scale of human beings, to an equality at least with those who prosecute either of the learned professions. He regarded the pursuit of agriculture as the most honourable of all, and he felt greatly interested in elevating it to its proper sphere in this country—which is peculiarly an agricultural one—by the introduction into the common schools of the study of agricultural chemistry. A man may be a good farmer, under present circumstances, without a knowledge of this important branch of study, but surely a knowledge of it would not make him the less so. His Excellency expressed his regret that his intentions respecting the prizes had been misinterpreted—he certainly intended that they should have been competed for and awarded at each semi-annual session of the Normal School. His Excellency again expressed his gratification at what he had witnessed, and resumed his seat amidst great applause.

## Editors' Notices, &c.

STORING FRUIT—H. M.—Your inquires did not reach us in time to be answered in our last number. First, let the fruit be sufficiently ripe before it is gathered, an operation that should be performed with all choice varieties with the greatest care, so as neither to break the branches of the trees, nor bruise the fruit. We cannot at present describe the various expedients used for this purpose; such as ladders, baskets, &c. A very ingenious contrivance was exhibited at the late Agricultural Show at Richmond Hill, for gathering fruit from high trees, invented by a gentleman in this city, which is particularly worthy of notice. All fruit, such as apples and pears, in which the ripening process is not quite complete, undergoes considerable fermentation, after being gathered and put into heaps. When gathered, it should be spread on boards in a dry situation of moderate temperature for several days. Dessert apples should remain on the tree till their characteristic flavour is fully developed. Ordinary sorts, for kitchen purposes, may be gathered at an earlier stage of ripeness. As to the mode of storing, something must depend on convenience, climate, &c. In this country a good, dry, airy cellar is indispensable, as the effects of frost cannot be safely guarded against in any other available situation. The temperature must not be high; from 40 to 50 degrees, it is thought by the best judges quite sufficient. Light should in a great measure be excluded, as that element is found, particularly under a high temperature, to hasten the decay of fruit. In such a situation most kinds of apples may be kept in old flour barrels, with a little clean straw at the top and bottom, and the head of the barrel taken off. Choice fruit may require more care. It is a good practice to look over it once or twice during the winter, separating all the unsound, &c. *Winter Pears* should be carefully stored away in a cool situation; and it is a good practice to separate them by pieces of paper, or other dry substances. The ripening process may afterwards be completed by bringing them into a warm room.

GOVERNMENT AGRICULTURAL GRANTS.—Several complaints have reached us on account of these grants not having as yet been paid, thereby occasioning much inconvenience and dissatisfaction. We regret this circumstance equally with our correspondents, some of whom, however, we think are a little unreasonable, and look at the matter too much in a party light. Government, we presume, have to meet their demands according to some order of precedence, and financial difficulties alone are, no doubt, the occasion of the delay. We would inform such as have outstanding claims against the Provincial Association, that their demands will now be soon met, and due notice will be given. As the conductors of this journal, we are neither the apologists nor assailants of any political party; but we may be permitted to say, that the liberal parliamentary grant of last session to the Provincial Association will be among the chief means of placing that valuable institution in an unfettered and healthy position. In order to replenish our empty exchequer, little more appears to us to be necessary than to foster a united and liberal feeling of nationality, and to combine all our means in developing the natural resources, agricultural, manufacturing and commercial, with which a bountiful Providence has so largely blessed us.

T. H. S is informed that the publication of reports of the exhibitions of the various agricultural societies in the province, carefully prepared and condensed, is a matter which has engaged much of our attention. We should be happy to make our journal the medium of permanently recording the state and progress of our industrial arts in every district. But in order to do this, we should need the co-operation of the secretaries of the different societies, and the support of all the friends to improvement. We shall be glad to receive suggestions on this subject.

W.—Your communication and proposal are under consideration.

## THE MARKETS.

The latest accounts from England (October 13) confirm the previous expectations of an abundant harvest. There was, however, a little more animation in wheat, in consequence of partial rumours that were daily gaining ground of the potato rot, particularly in Ireland. Potatoes were abundant in quantity; and from the accounts which have reached us from various parts of the British Isles, there is good reason to hope that a large proportion will be secured in a sound condition. The importations of wheat and other grain continued pretty large, and although prices may improve a little for a short time, especially if the expressed apprehensions of the potato disease be confirmed, yet we are inclined to believe that prices must necessarily continue depressed in the British market. The hop-picking had finished, and the crop was a very short one. Duty estimated about £80,000, and prices ranging between £6 to £9 per cwt. We learn that the Chancellor of the Exchequer has declined to remit any portion of the hop duty for 1848, and that much distress prevails in all the hop-growing districts. A quantity of hops had been imported from Belgium and the United States, paying an import duty, if sold for consumption in the United Kingdom, of £2 5s. per cwt.

In the *Toronto* market considerable business is doing in wheat, at from 3s. 9d. to 4s. per bushel, chiefly for exportation to the States. In flour little doing. Navigation will shortly close, when prices may be expected to recede.

## TORONTO MARKET.

Nov. 10, 1849.

| | s. | d. | | s. | d. |
|---|---|---|---|---|---|
| Flour, per brl. 196lbs. | 17 | 6 | to | 20 | 0 |
| Wheat, per bushel, 60lbs. | 3 | 9 | to | 4 | 0 |
| Barley, per bushel, 48lbs. | 1 | 6 | to | 2 | 0 |
| Rye, per bushel, 56lbs. | 2 | 0 | to | 2 | 6 |
| Oats, per bushel, 34lbs. | 1 | 0 | to | 1 | 3 |
| Oatmeal, per bbl. 196lbs. | 15 | 0 | to | 18 | 0 |
| Pease, per bushel, 60lbs. | 1 | 6 | to | 1 | 9 |
| Potatoes, per bushel | 1 | 0 | to | 1 | 3 |
| Onions | 3 | 6 | to | 5 | 0 |
| Beef, per 100lbs. | 17 | 6 | to | 20 | 0 |
| Timothy, per bushel, 60 lbs. | 6 | 0 | to | 8 | 0 |
| Turkeys, each | 1 | 3 | to | 2 | 6 |
| Geese, each | 1 | 3 | to | 2 | 6 |
| Ducks, per couple | 1 | 0 | to | 1 | 6 |
| Chickens, per couple | 1 | 6 | to | 1 | 9 |
| Pork, per lb. | 0 | 2½ | to | 0 | 3¾ |
| Ham, per 100 lb. | 35 | 0 | to | 45 | 0 |
| Bacon per 100 lbs, | 36 | 0 | to | 40 | 0 |
| Mutton, per lb., by the quarter | 0 | 2½ | to | 0 | 4 |
| Lamb per quarter | 2 | 0 | to | 3 | 0 |
| Fresh Butter, per lb. | 0 | 7½ | to | 0 | 9 |
| Firkin Butter, per lb. | 0 | 5 | to | 0 | 6 |
| Cheese, per lb. | 0 | 3 | to | 0 | 5½ |
| Lard, per lb. | 0 | 4 | to | 0 | 4 |
| Apples, per barrel, | 10 | 6 | to | 15 | 6 |
| Eggs, per dozen, | 0 | 6 | to | 0 | 7 |
| Fowls, per pair | 1 | 3 | to | 1 | 1 |
| Straw, per ton, | 25 | 0 | to | 30 | 0 |
| Hay, per ton, | 30 | 0 | to | 40 | 0 |
| Fire Wood | 12 | 6 | to | 15 | 0 |

## The Canadian Agriculturist,

A MONTHLY JOURNAL OF AGRICULTURE, HORTICULTURE, MECHANICAL AND GENERAL SCIENCE, DOMESTIC ECONOMY & MISCELLANEOUS INTELLIGENCE: Published by the Proprietors, W. McDOUGALL and GEO. BUCKLAND, on the first of each month, at their Office, near the South-west corner of King and Yonge Streets, Toronto.

☞ Subscription ONE DOLLAR, *in advance*. Advertisements 4d. per line each insertion.

☞ Societies, Clubs, or local Agents ordering twelve copies and upwards, will be supplied at 3s. 9d. per copy.

☞ *Money*, enclosed in a letter, and addressed to the "Editors of the Agriculturist, Toronto," will come perfectly safe As we shall employ but few agents this year, those who wish to pay for the last, or subscribe for the present volume, *need not wait to be called upon.*

☞ *Payment in advance* being the only system that will answer for a publication so cheap as ours, we shall send the remainder of the volume to none but those who *order* and *pay for* it.

LOCAL AGENTS.—Any person may act as local agent We hope that all those who have heretofore acted as such will continue their good offices, and that many others will give us their influence and assistance in the same way. Any person who will become a local agent may entitle himself to a copy by sending *four* subscriptions. Those sending *twelve* and upwards will be supplied at 3s. 9d. per copy.




Clothes lines are made of gutta percha, which have been exposed constantly to sun and rain, heat and cold, for two years, without any perceptible deterioration.

Pekin at one time was the largest city in the world. London is now the largest; and New York is the largest city in the United States.

## BRONTE MILLS FOR SALE.

THE Property consists of sixteen feet privilege on the Twelve-Mile-Creek on the Lake Shore, in the Township of Trafalgar, and about seventy-five acres of good cleared farm Land; a large stone and frame Woollen Factory, 82 feet by 32 feet, and three stories high, capable of being easily converted into a Flouring Mill; a Grist Mill, with one run of Stones, Smut Machine and all requisites; Two Saw Mills, with Circular Saw; Lumber Yard Railway; a Blacksmith's Shop and several Dwelling Houses. This property is now let to a yearly tenant for £200 per year, and would bring on a lease £250. Price £2,500, of which only £100 would be required down; the residue might be paid by instalments as agreed upon.

ALSO,

A Privilege on the same Creek of 12 feet, next above the Mills, with about 75 or 80 acres of land, mostly cleared and in cultivation, and an excellent Mill Site, with good Roads. Price £1000, of which £300 would be required in Cash; the remainder by instalments The option of this part of the property is offered to the purchaser of the first, and, if not taken, it will be sold separately.

ALSO,

Adjoining the above, a Farm of about 70 acres, in full cultivation, with a large unfinished Dwelling-House thereon, and an Orchard of four acres of grafted Fruit Trees Price £700, of which only £200 would be required immediately; the rest in ten years. The whole of the above property will be sold together, if desired. For particulars apply (post paid) to S. B. Harrison, Judge H. D. C. Toronto.

Toronto, March 1, 1849.

## THOROUGH-BRED STALLIONS FOR SALE.

THE Imported Horse PANMURE, got by Gen. Grosvenor's celebrated horse *Glaucus*, and out of Lord Chesterfield's celebrated mare *La Bayader*.

Also, the three year old Horse KINGSTON, got by imported *Panmure*, dam *Miss Barrie*, by Sir R. Barrie's imported *Daghee*, granddam *Sally Walker* by imported *Roman*, great-granddam by *American Eclipse*, g.g.g.dam by imported *Messenger*. *Miss Barrie* took the first premium for thorough-bred Mare at the Provincial Show for 1849.

PANMURE has proved himself an excellent Stock-getter in the Midland District.

The young Horse KINGSTON took the first premium for three year old thorough-bred Stallion at the Provincial Show of this year. Another colt by the same horse and dam, took the first premium for two year old thorough-bred Stallion; and some of *Panmure*'s colts by common mares also took premiums at the same Exhibition.

For further particulars apply to the Editors of the *Agriculturist*, or to G. A. CUMMING, Esq., Kingston, C. W.

October 1, 1849

## SEVERN'S BOTTLED ALE.

THE Subscriber, having resumed his former Business in a convenient locality, with a large stock on hand, of a superior quality, and in prime condition, would hope to secure a continuance of the patronage and support hitherto conferred upon him.

J. D. BARNES,
6, Wellington Buildings.
Adjoining Mr. Sterling's, King-st

Toronto, Jan., 1849.

## NEW CARRIAGE FACTORY.

### WILLIAMS & HOLMES,

HAVE REMOVED their *City Carriage Repository* to 142, Yonge Street, where they have commenced a Manufactory in all its branches. Parties wishing to purchase for Private or Public Business, are requested to give them a call before purchasing elsewhere, as their facilities are such as to enable them to manufacture cheaper than any other Establishment in Toronto.

Toronto, January 1, 1849. 1-tf

N.B.—The public are respectfully invited to an inspection of their Lumber and other Building Materials, as none but the very best will be used.

## MAMMOTH HOUSE,

Removed to the Store next door South of Mr. Elgie's Tavern, Market Square.

THOMAS THOMPSON is happy to inform the Public, that, by the praiseworthy exertions of his friends, he has saved from the destructive *Conflagration of 7th April*, staple and fancy DRY GOODS, GENERAL CLOTHING, HATS, CAPS, BOOTS, SHOES, &c. &c., to the amount of upwards of $15,000! partially damaged, which will be sold at a great sacrifice. The above Stock, with the early *Spring Arrivals* now opening out, will comprise a splendid assortment of *cheap* and *fashionable* Goods, the whole of which he is determined to have cleared out previous to his re-opening the new Mammoth House.

Toronto, 17th April, 1849.

## PHŒNIX FOUNDRY,

No. 58, YONGE STREET, TORONTO

### GEORGE B. SPENCER,

(LATE C. ELLIOT,)

CONTINUES every Branch in the above Establishment, as heretofore; and, in addition, keeps constantly on hand a good assortment of Cooking, Parlor, Box, and Air-Tight Stoves, of the most approved patterns.

Also, a Second-hand Engine, with or without the Boiler, Twelve-horse Power, will be sold very cheap for Cash or short payment.

Toronto, Jan. 26, 1849. 1-tf

## STOVES! STOVES!! STOVES!!!

### J. R. ARMSTRONG,

CITY FOUNDRY,

No. 116, Yonge Street, Toronto,

HAS constantly on hand Cooking, Box, Parlour and Coal Stoves, of various patterns and sizes, *very cheap for cash*.

Also, a New Pattern Hot-air Cooking Stove, just received, taking three-feet wood, better adapted for the country than the Burr, or any other Stove now in use. It has taken the First Premium at every Fair in the United States, where it has been exhibited.

Ploughs, Sugar Kettles, Grist & Saw-Mill Castings, Steam Engines, Sleigh Shoes, Dog Irons, and a general assortment of Castings.

ROWSELL AND THOMPSON, PRINTERS, TORONTO.