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THE
AGRICULTURIST & CANADIAN JOURNAL,

DEVOTED TO

Agriculture, Literature, Education,

USEFUL IMPROVEMENTS; SCIENCE,

AND

GENERAL NEWS.

ILLUSTRATED WITH ENGRAVINGS.



WM. McDOUGALL, EDITOR.

VOLUME I.

T O R O N T O :

PUBLISHED FOR THE PROPRIETOR BY BREWER, McPHAIL, & Co.,

PRINTERS, SCHOOL BOOK PUBLISHERS, &c.,

46, KING STREET EAST.

1848.

8vo Super Royal.

THE AGRICULTURIST

AND CANADIAN JOURNAL.

Devoted to Agriculture, Literature, Education, Useful Improvements, Science, and General News.

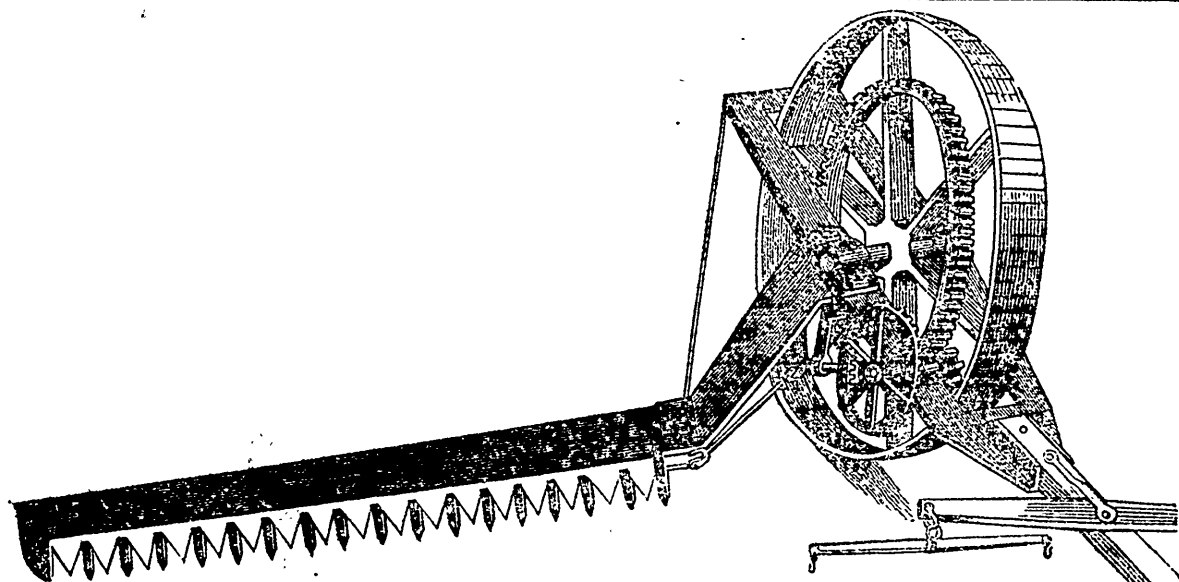
W. M. McDUGALL, PRINCIPAL EDITOR.
W. G. EDMUNDSON, PUBLISHER.

W. G. EDMUNDSON,
W. M. McDUGALL, PROPRIETORS.

VOL. I.

TORONTO, JANUARY 1, 1848.

NO. 1.



KETCHUM'S IMPROVED MOWING MACHINE.

We give above a correct representation of an ingenious and well constructed machine for the cutting of grass. Of course these machines can only be used on smooth surfaces, and on old and well cultivated land, but in the oldest settled portions of Canada, a large proportion of the meadow lands could be mowed by them. This machine has been put fairly to the test, by many farmers in Western New York, and it is the opinion of those who have used it, that it is destined to come into pretty general use. We are indebted to the *New York Farmer and Mechanic*, for the following brief description of the machine: "It will be perceived the knives as in reaping machines are a simple saw, with teeth about three inches in length, ground sharp, so as to match and form a gang of shears with the steel bars about an inch wide, which project between each of the knives about an inch beyond their points. As the saw or gang of knives are moved alternately to the right and left, by a crank attached to the machinery, the grass in contact with the knives, is, as it were sheared off smooth at the surface of the ground. The machine though wholly of iron, weighs less than 500 lbs. is propelled with ease, and cuts the grass in a close and even manner, and will cut in a perfect manner ten or twelve acres of heavy grass per day, and cost £25." There are a number of farmers in Canada, who have written to us respecting a mowing machine, and the answer we invariably gave them, was that one would doubtless very shortly be invented by some ingenious American, as a very high premium had been offered for an efficient one of this description. Our prediction, it appears, has been verified, and now the Canadian farmers, may if they please, employ one of the most useful labour saving machines of modern invention, in the performance of one of the most severe

branches of labour on the farm. Any person desirous of purchasing may order through us, provided that we be furnished with the cash—previous to the order being forwarded to the manufacturer.

LAST YEAR'S SUBSCRIBERS.

This number is sent to all the *Cultivator's* and *Farmer's* subscribers for 1847, as a specimen of the new work. Those who wish to take the *Agriculturist and Canadian Journal* for the year 1848, will please send in their subscriptions as soon as possible. Don't wait for the Agent to call. We shall canvass the country by means of our Agents, as thoroughly as possible, but it will take them a long time to call upon every farmer.—All those who desire to secure the early numbers of the paper, will do well to enclose the dollar at once. Remember the terms are, *cash in advance*. No other system will work.

All who receive this number and intend to subscribe, will please preserve it, so that when they order the paper, we shall not be obliged to send them the first number again.

DIRECTIONS TO THE READER.

When you receive the *Agriculturist* from the Post Office, before you cut open the pages, see that it has been folded properly. If the pages are not quite exact, which will seldom be the case from the hurry in which it is prepared for the mails, fold the paper anew yourself. Be careful to get all the pages even, and the lines along the top opposite each other, so that if you were to push a pin through the paper when folded, it could be made to prick the figures at the corner of each page. Having by a little ingenuity accomplished this, you may then cut the leaves. The outside sheet is intended to be taken off when the work is bound. It will be best, however, before cutting the leaves, to stitch them together with a needle and thread, allowing the outside or advertising sheet to remain as a cover. When you wish to get the volume bound at the end of the year, it will be more likely to have escaped injury from dirt.

Agriculturist and Canadian Journal.

TORONTO, JANUARY 1st, 1849.

TWO PAPERS IN ONE, BEING A CONSOLIDATION OF THE BRITISH AMERICAN CULTIVATOR AND THE CANADA FARMER.

Henceforward the readers of each of the above papers, will have the advantage of a perusal of *both*, without the trouble of reading, or the expense of procuring more than *one*. This may seem a reversal of the process, so often lauded as a national benefit, of "making two blades of grass to grow where one grew before." But there is this to be said; although but one journal will hereafter flourish where two existed before, yet if all the valuable parts of both be preserved—if all the ability and experience of the conductors of both be employed in the production of the *one*, while the price, postage, &c., remain the same as either of the others singly, the public have not gained a loss, but a profit by the change. No paper, Agricultural, Literary or Political, can be properly conducted, be of advantage to the public, or long sustained, unless the proprietors realize from it a sufficient income to cover *at least* all expenses. It is surely discouraging enough to spend one's time, to undergo the anxiety, the study, the labour of journalism, to consume days in reading and nights in writing for a periodical newspaper, and to receive no remuneration in return, except the very unsubstantial and generally unprofitable reward of *friendly wishes*, and perchance a considerable share of public approval. Unless he can find some thing more tangible, more consoling than this, God help the poor Editor. And as in this country the labors of the Editor, and the responsibilities and risks of the Proprietor, nearly always centre in one person, how can it be expected that there shall be energy and interest in the editorial columns, when there is a large balance of principal and interest in the debtor columns of the Printer's and Paper-maker's account book? Can a man keep a well filled head with an empty pocket? Or will he show much discretion in drawing from the one after it has become apparent, that through want of discretion he has nothing left to draw from the other? In short, will any man work with satisfaction and advantage to his employer, unless there is some fair prospect that he will get paid for it? No.

The *Cultivator* has struggled through an existence of six years, its circulation gradually increasing until at last a point has been reached, that if a proper system had been adopted, would enable the proprietors to pay all expenses, and divide something as a profit. But in consequence of an agreement with Agricultural Societies, by which they obtained the work at half price, although its circulation was greatly increased, the amount realized has been so small, that the *whole* has been absorbed in expenses, and in the liquidation of the debt incurred during the first two or three years of the publication, when it did not pay for itself. The original proprietor of the *Cultivator* who has been obliged to edit it from its commencement with little or no assistance, and to manage the correspondence and a great portion of the business connected with it, has at no time been able to say, "here is the reward of my labour in the shape of *cash*, over and above my disbursements" He has been obliged to give his attention to other employments in order to *live*, and if under such circumstances the paper was but poorly conducted, was less valuable, less interesting than may have been expected, we think there is little cause for wonder. It has been an "up hill" business from the very outset, and we believe those in any degree qualified to judge, will give us credit for energy, perseverance, and a *desire to do good*, though

we have had but little means to do it. Of *one* thing we feel certain, that many better men would long ago have given up in despair, if not disgust. And were the same task again placed before us with all its toils, anxieties, and discouragements, we should infinitely prefer to break stones on the highway, both as to the pleasure and the profit.

There is some consolation, however, in the reflection, that amid all this difficulty and labour, results have been attained which form a foundation for the belief, that we shall not in the end be out of pocket by the enterprise, and that we have therein and thereby done important service to our native country. The Editor of the *Cultivator* thinks he may justly take to himself the credit of having awakened a general attention throughout the British Provinces, to the advantage and necessity of improvement in farming, and combined organized action for the purpose of placing the great Agricultural interests of our own country on such a footing, as to secure a certain prosperity and lasting happiness. Societies have been formed, agencies created, and movements begun, which have resulted, and must continue to result in great good to the country at large, and but for the existence of the *Cultivator*, and the persevering labors of its Editor, some of these might never have come into operation, and all of them would have been delayed to a later day. As the first and only Agricultural Journal in this country, whose circulation has extended to thousands, to Lower Canada as well as Upper Canada, to Nova Scotia and the other Eastern Provinces; as the only one which has given evidence of its ability to live by having attained its sixth year in a healthy state, and as the one which has suggested and advocated and introduced useful movements, and excited a much needed interest in agricultural improvement among the farmers of the country, we think it is entitled to general support from its former patrons in its new and associated character, and we claim for the "AGRICULTURIST AND CANADIAN JOURNAL," embracing the *Cultivator*, and a new laborer in the same field, the *Canada Farmer*, the countenance and support of the public at large.

The *Canada Farmer* has been before the public for one year, and during that time has earned a very fair reputation, and obtained a large number of subscribers. The plan of the publication and the variety of its contents are, we feel sure, calculated to make it better suited to the wants and wishes of the Agricultural community than one issued monthly, and devoted to Agriculture alone. The *Farmer* was published *twice* a month, and in addition to subjects connected with Agriculture, treated of Literature, Science, questions of general interest to the public, irrespective of party, news of the day, market prices, &c., &c., making in the whole an interesting family newspaper, afforded at a price so low as to place it within the reach of every one, be his circumstances what they might. The Proprietors of both Journals found that at the price charged, it would be impossible to realize any thing in the shape of remuneration, so long as both continued to divide the public support. If each could have secured a circulation of 8 or 10,000, and could have acted strictly on the "cash in advance" system, both might have lived and yielded a small profit, and possibly some good might have grown out of the emulation that must necessarily have existed between the Proprietors. But in the present backward state of the country, in reference to the subjects chiefly contemplated by these Journals, such lists of *paying* subscribers were quite unattainable. To save ourselves from inevitable loss, we have merged our papers into one, in behalf of which we expect, and think we have some right to claim the favor and support of the Agricultural public, and indeed of all who feel interested in the general improvement of this young, but fast growing country.

The readers of the *Cultivator* will have seen the explanations of the Editor of that Journal in the last number. The last number of the *Farmer* apprised its readers of the change and the reasons for it, and they are now presented with a specimen number of the new work. They were assured that they would get a "better paper" than the *Farmer* at the same price. We believe that promise will be fulfilled, and we hope that all parties will be satisfied. We shall at all events devote our united means, talents and energies to produce that result. We feel sure that the *AGRICULTURIST* will be second to no other paper of a similar character on this continent. We number among our contributors and occasional correspondents, men of the highest attainments in the theoretical and scientific department of agriculture, and also in the practical department of it. With the assistance of these and what we shall be able to accomplish ourselves, we are vain enough to believe that our paper will attain a character equal to the best in any country. It is we hope unnecessary to say more on this point; the best evidence will be the paper itself, and we therefore submit it to the perusal and candid judgment of the public.

CULTIVATION OF INDIAN CORN.

The following remarks are furnished us by an intelligent correspondent:—

We are delighted to observe that the cultivation of Indian Corn is becoming more general in various parts of the Province. The plant seems peculiarly adapted for the purpose of a green crop upon the American continent; it well supplies the place of the turnip, bean and other plants, used for that end in Great Britain. It admits more easily of home tillage (an important advantage in a new country), it is free from the attack of the fly that ravages the turnip, and the epidemic (if we can call it so), that threatens to annihilate the potatoe. It can also be used for purposes, for which these roots are not applicable. We know that in Canada, fattening cattle is not always a "paying speculation," and here kind nature has given an esculent which is always a nourishing food for man, and often a profitable one for his domestic animals.

As a green crop, where is there one whose cultivation can be carried on with less extra labour? In this how admirably is it fitted for Canadian farmers, whose assistants are generally those of their own family, and who have often difficulty in procuring hired labour. None but the ordinary labourers of the farm are called for in the culture of corn; the various operations of harvesting and thrashing are conducted without loss from delay, without the turmoil and anxiety attendant on other grain crops. Seemingly more remunerative of continued cultivation than other plants, fit for use even before it is ripe, its ear defended by large glumes from the inclemency of the weather, easily gathered, easily thrashed, easily ground, the spirit of a Goethe might easily personify a merciful Creator, giving it after the fall to the first, and then repentant inhabitant of the earth.

Can we overlook the minor benefits of the corn crop? Its straw is considered but little inferior to hay, if it has been properly secured. We have often heard it affirmed that cows will give more milk when fed on the one, than on the other. What crop is there to which manure can be so properly applied? Apply it immediately to wheat and you may probably ruin the crop. The greater luxuriance of the straw is by no means always accompanied by a corresponding increase of grain; it very often lessens the quantity of the latter, by rendering the wheat plant more liable to rust, which of late years has been so ruinous to Canadian farmers. Nothing of the kind can happen with corn; the more cultivation you bestow, and the greater quantity of manure that you apply to it, the larger in all probability will be the yield.

Whether it has been the considerations that we have enumerated, joined to the productiveness of corn, that have induced American farmers to cultivate it to the extent that they do, we will not say; certain it is, that from Maine to Louisiana, it may almost be said to be their bread-crop. An Agricultural census of the United States shows, that in all there is a preponderance of corn, bushel for bushel

over wheat, except in the State of New York, Ohio, and Michigan, where there is a slight overplus of wheat. We cannot but conclude that our brethren there have found a profit in the growth of corn, to have persevered in it over very Northern States; and the history of mankind shows that the progress of art and science has been made, not so much by the brilliancy of genius, as by the careful treasuring of the discoveries of each succeeding age; this may especially be said of agriculture.

Let us now examine the "Profit and Loss," part of the business; we need not refer to any of the large crops of corn so often met with in print. We will instance one of the many average crops (we believe) raised in Western Canada, and conducted under unfavourable circumstances. Mr. M—, of Brantford, induced by the example of his neighbour, resolved to make a trial on a small scale of a corn crop. For this purpose, though late in the season, being about the beginning of June, he planted three acres of land nearly free of stumps, with some of the common varieties of seed. The land was rather new, and consequently the most troublesome weeds of arable land had not yet begun to be inconvenient. The cultivation could then be performed without the assistance of the hoe. The following will show the result:—

Dr.	Cr.
To ploughing and harrowing three days	By 130 bushels of corn, at forty-four cents per bushel
— planting and seed	\$37.20
— horse-hoeing twice	
— harvesting	
— husking and thrashing ...	
	\$25.75

We have thus a balance gained of \$31.45c. or \$10.48c. per acre. And this is by paying time for the teams used, which can hardly be said to cost so much to the owner, for the person that lets out a team of course calculates upon a profit thereby.

BLACK ROCK, December 16th, 1847.

DEAR SIR,—In your *Canada Farmer* of November 6th, which you were so kind as to send me, I observed an account of your visit to my place of a few days previous—and had I known at the time that you were taking notes for publication of what you saw there, I might either have entered my protest against it altogether—or, you, still persisting, explained some things more fully, which I find, inadvertently you have omitted. I allude to the remarks regarding my farm stock.

In relation to the pigs: now I only raise a sufficient number to consume the wash of the farm-house and dairy, and make family pork. I breed none to sell. Still, I am as choice in their variety as if I bred them for sale. Since you were here my pork has been killed. My yearling Berkshires averaged 300, and my last March pigs, 180 pounds each, and until about two months before they were slaughtered were fed only on the offal of the house, or a little sour milk (never a drop of sweet), and a trifle of coarse mill feed (shorts and bran), till a few weeks before you saw them, when they had been fed on corn, at which time they were still running at large. A bad plan by the way, for hogs, unless in good pasture, or with other good feed at hand, should always be confined in a pen. I have now finished the piggery, I was building when you were at the farm, and a most satisfactory one it is, suiting me exactly, and will hold twenty pigs of average size.

The medium sized hog I like best, let him be Berkshire, Suffolk, or what you will. In fact, medium sized animals of every kind according to their race are best, and usually the most perfectly developed in their proportions and qualities. A physiological examination of the subject will settle that question.

After discussing the pigs, you remark in general on the selection and care of fine or improved stock, in which you assert that "the tendency of every thing of this kind is downward." I grant that it is in the hands of unskilful breeders, but that is not the natural course. "Like begets like;" go and examine the fine animals on the estates of your own spirited breeders, Messrs. Fergusson, Wetenhall, Howitt, and several other gentlemen, whose names have at the moment escaped me, and you will find no downward tendency there. It is only careless breeders and farmers, who have no regard to either good taste or good farming, that let their fine cattle, when they have them "run out," and whose common animals are usually so wretched in condition and appearance, that they can get no worse. Improved or superior varieties cannot be an object of cultivation with them. Such people never ought to have any thing that is good, until they cultivate a disposition to care for it.

You also remark rather questionably of the views of Mr. Sotham and myself, in the manner of raising young cattle, in which we oppose the forcing system, an estimate that the superiority of the

finer races over others is not altogether "in the breed" I readily grant you that the produce of a race of animals whose ancestors have always been accustomed to good care and keep, will not endure starvation and neglect so well as those whose direct ancestors for many generations back have thus been treated, for the sound, although old and hazy, psychological reason, that "what's bred in the bone stays long in the flesh;" but with proper keep—and that of medium kind is all I ask for—breed will tell in the result. Let the scrabs or natives as you term them, be well brought up with the superior stock, each, and all alike, and my word for it, at any and every age, the superiority will be marked. All animals ought to be kept well, from the birth to the death, and such should be the aim of every good farmer.

You speak of taking the "natives," and by good breeding and selection, making a superior race from them, and finally establishing a distinct breed of cattle like Colonel Jacques, "Cream Pot." That is all very well when you can get nothing better than natives to begin with, but I fancy you would breed a long time, and through a great many generations, before you would get any thing better than "native" cattle out of them, retaining the chief characteristics only, which their originals possessed: and as for the "Cream Pots" you allude to, they are simply high crosses of short horn blood, upon the best "native" animals Colonel Jacques could obtain, as I am told by Col. Jacques himself, and whose animals I have seen. He has thus raised his herd to a race of superior milkers, by selecting good milking cows to begin with, and then breeding them to good short horn bulls of milking families, and selecting his best heifers, and so on in succession, until he has got what he is pleased to call his "Cream Pot" breed; but just such cows can be selected in almost any good herd of high bred grade cows in the country.

Again you remark: "But the fact that some skill is required to prevent the good qualities of the pure bloods from running out, is of itself proof that they are not a superior race in their original, that they are not an 'old aristocracy,' whose inherent nobility reaches back to the days of William the Conqueror." Now, how ancient may be the lineage of any improved races of cattle or of men, I am not at present disposed to examine, but if you will find the record of, or tell us how, and by what process, and through what combinations the different breeds of the Short horn, the Hereford, or the Devon cattle—not to mention other varieties of superior British animals—were produced, so as to transmit as they do their characteristics with undeviating certainty to their posterity, through long lines of generation, "from the time whereof the memory of man reacheth not to the contrary," to the present, I shall be most happy to know it: or if you will inform me what was the original breed of cattle as first created, I shall esteem it a great favour. Rather a deep subject I fancy, when once you get into it. And I would also like to know what race will the various "improved" breeds pass into, when they "run out" of their present condition? Bad keep and ill breeding may run down almost any thing, or stop its production, but I assure you that it will be a strange course of nature, when a race of Caucasians will run into Indians, or a distinct race of animals into something of altogether another kind. Neglect and abuse may degrade the individuals, but the breed, such as it is, will still remain inherent, and probably retain sufficient vitality with proper care and treatment, to recover all its original vigour and excellence.

You remark of my Short-horn, and say that "they appear to have suffered from the drafts that have been made from them by purchasers, who have evidently laid their hands on the best." You will recollect that my cows when you saw them were all giving milk, and of course, under such process, could not be in high condition of flesh. Were they dried off early after calving, as my show cows have been, and as some of our breeders of fine animals are in the habit of doing, I think you would have little reason to complain of their quality or appearance. But such management is unprofitable without being of benefit to the cows themselves, as when dried off, they will always come into flesh as rapidly as one could desire. The imported bull you speak of as having been used by me for the two last years, is "Duke of Wellington," whose pedigree is registered at No 53, American Herdbook, bred by Thomas Bates, Esq., of Kilkillington, one of the most noted Short-horn breeders in England, and imported into this country by George Vail, Esq., of Troy, New York, from whom I hired him. This bull is the grand sire of the young bull-calf lately purchased by your two spirited breeders, Messrs. Fergusson and Wettenhall, for \$300, of Mr. Vail. This fine calf is out of one of Mr. Vail's imported cows, also bred by Mr. Bates. The year previous to my using Wellington, I used "Symmetry," (since become the property of J. M. Sherwood, Esq., of Auburn), a son of his out of another cow previously imported by Mr. Vail, from Mr. Bates. Thus you will observe that I have bought some of the best blood in the country to infuse into my herd, and without admitting your inference that it will restore its excellence, as I deny that its quality has in any way been deteriorated, I admit this new infusion may improve it, for I certainly do not feel so much disposed to claim perfection in my animals of any kind, as not to confess that they possibly may be improved by the use of others, which can be introduced among them.

But I have spun out a long story—much longer than I intended when I sat down to my pen, and I must close. As to friend Sotham and his Herefords, he must tell you his own story. His Herefords

certainly are of the best; but when he says that the Short-horn breeders are all opposed to him, you must make a little allowance for his naturally bellicose propensities. We, of the stock breeding fraternity are in general liberal men, and admire genuine excellence in every thing, wherever we can find it.

Yours truly,

LEWIS F. ALLEN.

WATER FOR STOCK.—This is a subject of great importance. It is order that stock of all kinds may be comfortable and thrifty, they should have constant access to pure water; and if possible they should be supplied with water in the barn yard, as much manure is wasted, besides animals being likely to accidents, in going at a distance for water. When it is near, animals will drink often, but when at a distance they often go without, and suffer in consequence, and are a disadvantage to the owner, too; for no animal can be profitable without the requisites to its growth, health, and productiveness. Even sheep, that some farmers think can use snow and ice as a substitute for water, will drink frequently when water is near.

When animals have constant access to water, they usually drink a little and drink often, but when not properly supplied they will often injure themselves by drinking to excess.

Some farmers have prepared water works so as to have a constant supply of good water in the barn yard, at an expense of some 25, 50, 75 or 100 dollars, and they would not be deprived of it for the interest, annually, on five times the cost.—*Doston Cultivator*.

VALUE OF HEN-MANURE.—The complaint of the fly on turnips, and bugs or cucumbers and other similar vines, is one of yearly, and sometimes, of long occurrence. The mischief done by these little pests, is very provoking, and frequently results in losses of labor and good crops which are very discouraging to cultivators. I have lately been informed by an intelligent and skilful cultivator, that the following preparation affords an ample and complete remedy. Take hen-manure one part, reduce it as well as you can to powder; then with an equal part of plaster of Paris, incorporate well together, and sprinkle the mixture over the vines, or sow it over the drills of your turnips.

Hen-manure is free from the seeds of foul weeds, and in consequence of the great abundance of ammonia it contains, it possesses a great effect in pushing plants forward. Hence, for tomatoes, peppers, and similar plants, in our northern climate, it possesses high value. It is well worth being saved with care by farmers and gardeners for every purpose of cultivation. Care should be used, however, in its application, for if given in too large quantities and placed in too close proximity to the roots of the plant, its effects are fatal. Its value for all purposes is greatly increased, by being mixed with charcoal; or when this is not at hand with plaster. Every man who keeps hens, should have his hen-house so constructed as to save all the manure, and save it dry as may be, and he will find it no inconsiderable item in his matters of rural economy.

W. BACON.

—*American Agriculturist*.

TAXES, FINANCE AND PUBLIC DEBTS.

No government can exist without a revenue. It is the guarantee for the security of life and property. The portion of his property which every man contributes to the revenue, is the price he pays for the security of the remainder. Though taxes must exist in all countries, the form in which they are levied, that they may bear with just proportion on all classes of the community, is a matter of first importance. When public debts are contracted for unjust or unnecessary purposes, they become public burthens, beneath which the energies of a nation are in danger of being crushed, and future generations are taxed for debts which they did not contract, and from which they have derived no benefit. It is no less instructive than curious, to observe the means, rapid in their operation, though at the time almost unobserved, by which nations contract debts, which neither the immediate borrowers nor any succeeding generation can liquidate. Were taxation resorted to for the means to carry on an unjust or unnecessary war, for instance; one begun and carried on, probably from no higher motives than those of personal ambition, there would be no possibility of raising the necessary supplies. For, aside from the inability of a nation to raise, suddenly, a revenue beyond its means, no nation would endure direct taxation to an extent, much beyond the ordinary requirements of peaceful times. The weight of so direct a financial emergency, would turn public discontent against the cause which produced it. But a nation will submit to the silent accumulation of a public debt, of the consequences of which it feels no immediate pressure. The particles of the stone may be rapidly collected and cemented together, until the weight becomes sufficient to sink a nation into the sea of insolvency.

if the rope that binds it to the public neck, be kept sufficiently loose till the process of formation is completed. When that moment arrives, it can no longer resist the weight of public taxes, which, at first, it could not have been induced to bear. That which cannot be done directly with a nation's free consent, is brought about by stratagem. Nobody doubts, for instance, that Mr. Polk's Cabinet could raise the necessary means for carrying on the Mexican war by direct taxation. The exigency of the case involves the necessity for creating a public debt; and though the recuperative powers of the United States may be such, that a few years will suffice to liquidate the debt, it is otherwise with many other countries.

We shall devote a few papers to the subject of this article, and we hope to be able to clear away the mystery that hangs over the subjects of *Taxation, Finance, and Public Debts*. If we seek illustrations, the application of which to the present condition of this Colony, may not at once be apparent to the reader, we trust he will be able to see their relevancy, before we finally dispose of the subject. To demonstrate correct principles, it will be necessary to have recourse to contrasts and comparisons, and to show the origin of unjust, and the necessity that has arisen, in different countries for excessive taxation. These examples will appear as quicksands to be avoided.

Those restrictive duties which have weighed so heavily on commerce, and in some instances annihilated it, were often the result of a pressing necessity arising from former profligacy, by which the resources of a nation had become mortgaged. In a future paper we shall glance at the commencement, and progress of the accumulation of the National debt of England, which now, as Hume observes, threatens the very existence of the nation. It is not to England, however, that we are to look for the commencement of the system of public debts; we find there its full development, but for its origin we must look to the Financial system of the papal States. While direct loans were not attempted, and direct taxes would not have been borne, thousands of sinecure places were created and brought into market, the purchaser stipulating to receive a yearly sum, bearing a certain proportion to the amount of the purchase money, from the public revenue. The aggregate amount of these annuities constituted a heavy public debt. But as this system was not capable of indefinite expansion, some other means had to be adopted, to pay the annuities. The pressure of the public debt thus silently created now began to be severely felt, and taxation, as an unavoidable result, assumed a multitude of forms. Direct taxes were resorted to, and they not only proved a failure, but had also the effect of alienating some Provinces from the Papal Government. Taxes were then imposed on the most laborious callings, and the most indispensable necessities of life.—Commerce was hampered with oppressive imposts, under the weight of which the trade of Ancona suffered total annihilation. Such were the disastrous results of a public debt, which nobody felt when it was being contracted, and against the progress of which, consequently no one protested.

Here we trace clearly the connection between a public debt, and ruinous restrictions on commerce, the latter growing as a necessity out of the former. We say necessity, because direct taxation had failed to produce the required revenue.

Having seen how the system of modern public debts began, and how taxes oppressive to commerce followed as a necessary consequence, we shall in our next, trace the progress of this double evil, and finally proceed to consider the legitimate object of taxation, and the most equitable mode of raising a public revenue.

SPECULATION AND COMMERCIAL PANIC.

The rage for the multiplication of railroads in England has developed results which, for a moment, seemed to threaten the national credit with utter ruin. The mystery of the progress of the financial panic which has carried ruin into so many firms hitherto considered not only solvent but rich, is solved by one plain, unerring law of political economy. What may be termed the legitimate business of every country, whether it be Agriculture, Manufactures, or a combination of both, requires a certain amount of fixed and floating capital to carry it out successfully. Whenever a portion of this necessary amount is

withdrawn from its legitimate business, and transferred to some new speculation, derangement follows according to an inevitable law: ordinary business is paralyzed or suspended, and in the panic which follows, the new speculations likewise suffer suspension; and thus the whole commercial affairs of a country are thrown into confusion, and ruin spreads itself in every quarter. This is the case of the English Railways, and the consequent wide-spread panic. The investments in the Railways were drawn from the ordinary business of the country, which not being able to bear the drain, languished, and the final result developed itself in almost universal bankruptcy. We refer to this case, because the principle applies not to Railways alone, but to every undertaking which trenches on the means employed, and required to carry on the ordinary business of any country. It is from the universal applicability of this principle, that we, as colonists, may learn the lesson which one nation, much to its cost, is teaching for the advantage of all others. We are an Agricultural people, and the question of our becoming also a Manufacturing people, is one of time and means. When we have a surplus that can be drawn from our ordinary business and devoted to something else, the time will have arrived when the establishment of Manufactures will be a national advantage. The advantage will be, not so much the finding employment in a new branch of business for a large number of hands, as the saving of the cost of freight in exporting our produce, and importing Manufactures in return. This is a clear national saving, provided the Home Manufacture is quite as cheap as the imported, of the full amount of the freight. As to the advantage of having a large number of persons engaged in Manufactures, it is of a much more questionable kind. In England, it is of the highest importance to have a great portion of the population employed in the production of Manufactures; the national existence may be said to be dependent upon it; because there is no expanse of unoccupied soil, on which to employ the surplus labour of a constantly augmenting population. But here the case is reversed for the unoccupied soil, will, for a long time, be sufficient to absorb all the labour in the colony; and the question arises, whether a transference of a portion of the population at present engaged in Agriculture, to cities to engage in manufactures, would, *per se*, be a national advantage. Much would depend upon the comparative productiveness of their labor in the two spheres of action, but not *every thing*. MORALITY has a national, if not a commercial value; and it is well known that vice flourishes with rankest exuberance in the crowded city, and amid the promiscuous intercourse of large factories; and health suffers less in the open field, where the pure air and the light of heaven are not obstructed by huge piles of brick and mortar.

Our projected railroads involve, in the aggregate, an expenditure of several millions. But it has been proposed to obtain the capital necessary for their construction, by means which do not point to any of those disastrous results to the colony, which have been produced by the indefinite multiplication of railroads in England. We cannot draw millions, or even many thousands from our Commerce and Agriculture, without deranging the operations of both, or bringing them to a dead stand. We have, therefore, looked to English capitalists for the means of constructing our railroads. But until the recuperative powers of the English nation have brought things there to a healthy condition, it will be useless to delude ourselves with hopes of succour from that quarter. The consequence of this state of things in England, is that all our railroad enterprises are kept in abeyance, or are being commenced under no very promising auspices.

Canada has overtraded, not in railroad speculations, but in importing English goods beyond our means, and beyond the demand for them. The Banks have become shy of discounting; and appearances indicate but too clearly that we are on the verge of a panic, the extent of which may astonish many who have not looked beyond the surface. Insolvency has spread wide in Canada, and the declaration of that insolvency must, in many cases, soon develop itself in the shape of bankruptcy. Had we imported less, had the Banks not confined their favours solely to merchants and speculators, and had the money which has been spent in goods, now lying useless in over-crowded warehouses, been devoted to extending and improving the cultivation of the soil—the legitimate business of Canada—the panic now about to burst upon us had been averted.

LITERATURE.

KEEP AT WORK.

From the Boston Chronotype.

- Does a mountain on you frown ?
Keep at work ;
You may undermine it yet ;
If you stand and thump its base,
Sorry bruises you may get.
Keep at work.
- Does Miss Fortune's face look sour ?
Keep at work ;
She may smile again some day ;
If you pull your hair and fret,
Rest assured she'll have her way.
Keep at work.
- Are you censured by your friends ?
Keep at work ;
Whether they are wrong or right,
May be you must 'bide your time,
If for victory you fight.
Keep at work.
- If the devil growls at you,
Keep at work ;
That's the best way to resist ;
If you hold an argument,
You may feel his iron fist.
Keep at work.
- Are your talents villified ?
Keep at work ;
Greater men than you are hated ;
If you're right, then go ahead—
Grit will be appreciated.
Keep at work.
- Every thing is done by labor ;
Keep at work,
If you would improve your station ;
They have help from Providence
Who work out their own salvation.
Keep at work.

THE FIRST OFFENCE.

From Chambers' Edinburgh Journal.

In the cheering dining room of my bachelor friend, Stevenson, a select party was assembled to celebrate his birth-day. A very amiable discussion had been carried on for some time, as to whether the first deviation from integrity should be treated with severity or lenity. Various were the opinions, and numerous were the arguments brought forward to support them. The majority appeared to lean on the side of "crush all offences in the bud," when a warm hearted old gentleman exclaimed, "Depend upon it, more young people are lost to society from a first offence being treated with injudicious severity, than from the contrary extreme. Not that I would pass over even the slightest deviation from integrity, either in word or deed ; that would certainly be mistaken kindness ; but on the other hand, neither would I punish with severity an offence committed, perhaps under the influence of temptation—temptation, too, that we ourselves may have thoughtlessly placed in their way, in such a manner as to have rendered it irresistible. For instance, a lady hires a servant, the girl has hitherto borne a good character, but it is her first place : her honesty has never been put to the test.—Her mistress, without thinking of the continual temptation to which she is exposing, a fellow creature, is in the habit of leaving small sums of money, generally coppers, lying about her usual sitting-room. After a time she begins to think that these sums are not always found exactly as she left them. Suspicion falls upon the girl, whose duty it is to clean the room every morning. Her mistress, however, thinks that she will be quite convinced before she brings forward her accusation. She counts the money carefully at night, and the next morning some is missing. No one has been in the room but the girl ; her guilt is evident. Well, what does her mistress do ? Why, she warns the girl out of her house at an hour's notice : cannot in conscience, give her a character ; tells all her friends how dreadfully distressed she is ; declares there is nothing but ingratitude to be met with among servants ; and never dreams of blaming herself for her wicked—yes, it is wicked—thoughtlessness in thus constantly exposing to temptation a young ignorant girl ; one most likely whose mind, if not enveloped in total darkness, has only an imperfect twilight knowledge whereby to distinguish right from wrong. "At whose door, I ask," continued he, growing warmer, "will the sin lie, if that girl sink into the lowest depths of vice and misery ?" Why at the door of her who after placing temptation in her very path, turned

her into the pinless world, deprived of that which constituted her, only means of obtaining an honest livelihood—her character ; and without one effort to reclaim her—without affording a single opportunity of retracing the past, and regaining by future good conduct the confidence of her employer.

"There is, I fear, too much truth in what you say," remarked our benevolent host, who had hitherto taken no part in the conversation ; and reminds me of a circumstance that occurred in the earliest part of my life, which, as it may serve to illustrate the subject you have been discussing I will relate." There was a general movement of attention ; for it was a well known fact, that no manufacturer in the town of— was surrounded with so many and faithful servants as our old friend Stevenson.

"In the outset of my business career," said he, "I took into my employment a young man to fill the situation of under clerk : and according to a rule I had laid down, whenever a stranger entered my service, his duties were of a nature to involve as little responsibility as possible, until sufficient time had been given to form a correct estimate of his character. The young man, who I shall call Smith, was of respectable family. He had lost his father and had a mother and sisters in some measure dependant upon him. After he had been some time in my employment, it happened that my confidential clerk, whose duty it was to receive the money from the bank for the payment of wages, being prevented by an unforeseen circumstance from attending at the proper time, sent the sum required by Smith. My confidence was so great in my head clerk, who had been long known to me, that I was not in the habit of regularly counting the money when he brought it to me ; but as, on this occasion, it had passed through other hands, I thought it right to do so.—Therefore calling Smith back as he was leaving the Counting-house, I desired him to wait a few minutes, and proceeded to ascertain whether it was quite correct. Great was my surprise and concern on finding that there was a considerable deficiency.

"From whom," said I, "did you get this money ?"

He replied, "From M——," naming my confidential clerk.

"It is strange," said I, looking steadily at him. "But this money is incorrect, and it is the first time I have found it so. He changed countenance, and his eyes fell before mine : but he answered with tolerable composure, "that it was as he had received it."

"It is in vain," I replied, "to attempt to impose upon me, or to endeavour to cast suspicion on one whose character for the strictest honesty and unflinching integrity is so well established. Now, I am perfectly convinced that you have taken this money, and that it is at this moment in your possession ; and I think the evidence against you is sufficient to justify me in dismissing you from my service. But you are a very young man : your conduct has I believe, been hitherto perfectly correct, and I am willing to afford you an opportunity of redeeming the past. All knowledge of this matter rests between ourselves. Candidly confess the error of which you have been guilty ; restore what you have so dishonestly taken ; endeavour by your future good conduct to deserve my confidence and respect, and this circumstance shall never transpire to injure you.

"The poor fellow was deeply affected. In a voice almost inarticulate, he acknowledged his guilt, and said that having frequently seen me receive the money without counting it, on being entrusted with it himself, the idea had flashed across his mind that he might easily abstract some without incurring suspicion, or at all events without there being sufficient evidence to justify it ; that being in distress the temptation had proved stronger than his power of resistance, and he had yielded. I cannot now, he continued, "prove how deeply your forbearance has touched me ; time alone can show that it has not been misplaced." He left me to resume his duties.

"Days, weeks and months had passed away, during which I scrutinized his conduct with the greatest anxiety, whilst at the same time I guarded against any appearance of watchfulness ; and with delight I observed that so far my experiment had succeeded. The greatest regularity and attention—the utmost devotion to my interests—marked his business habits ; and this without any display : for his quiet and humble deportment was from that time remarkable. At length, finding his conduct invariably marked by the utmost openness and plain dealing, my confidence in him was so far restored, that on a vacancy occurring in a situation of greater trust and increased emolument than the one he had hitherto filled, I placed him in it ; and never had I the slightest reason to repent of the part I had acted towards him. Not only had I the pleasure of reflecting that I had, in all probability saved a fellow creature from a continued course of vice and consequent misery, and afforded him the opportunity of becoming a respectable and useful member of society, but I had gained for myself an indefatigable servant—a faithful and constant friend. For years he served me with the greatest devotion. His character for rigid, nay even scrupulous honesty, was so very well known, that "honest as Smith" became a proverb among all his acquaintances. One morning I missed him from his accustomed place, and upon inquiry, learned he was detained at home by indisposition. Several days elapsed, and still he was absent ; and upon calling at his house to enquire after him I found his family in great distress on his account. His complaint had proved to be typhus fever of a malignant kind. From almost the commencement of his attack, he had, as his wife (for he had been some time married) informed me, lain in a state of

unconsciousness, from which he had roused only to the ravings of delirium and that the physician gave little hopes of his recovery. For some days he continued in the same state; at length a message was brought to me stating that Mr. Smith wished to see me: the messenger adding that Mrs. Smith hoped I would come as soon as possible, for she feared her husband was dying. I immediately obeyed the summons.

"On entering the chamber, I found the whole of his family assembled to take farewell of him they so tenderly loved. As soon as he perceived me, he motioned me to approach near to him, and taking my hand in both of his he turned towards me his dying countenance, full of gratitude and affection. "I have sent for you that I may give you the thanks and blessing of a dying man for all your goodness to me. To your generosity and mercy I owe it, that I leave to my children a name unsullied by crime, that in after years the blush of shame shall never tinge their cheeks at the memory of their father. O God!" he continued "thou who hast said, 'Blessed are the merciful,' bless him. According to the measure he has meted to others, do thou mete unto him. My beloved wife and children, I intrust you, without fear, to the care of that heavenly parent who has said, 'Leave thy fatherless children to me, and I will preserve them alive, and, let the widow trust in me.' And you my dear master, will, I know, be to them as you have been to me, guide, protector, and friend." "That," continued the kind old man, looking around us with glistening eyes, "though mixed with sorrow, was one of the happiest moments of my life." As I stood by the bedside of the dying man, and looked around upon his children growing virtuous, intelligent, and upright, respecting, honouring, as much as they loved their father; when I saw his wife, tho' overcome with grief for the loss of a tender and beloved husband, yet sorrowing not as one without hope, but even in that moment of agony deriving comfort from the belief that she should meet him again where

"Adieus and farewells are a sound unknown;"

when I listened to his fervent expressions of gratitude, and saw him calmly awaiting the inevitable stroke, trusting in the mercy of God, at peace with his fellow men; and when I thought that the reverse of all this might have been—crime, misery, a disgraceful and dishonourable life; perhaps a shameful and violent death—had I yielded to the first impulse of indignation—I felt a happiness no words can express. We are told that there is more joy amongst the angels of God over one sinner that repenteth than over ninety-nine just persons that need no repentance. With such a joy as we may imagine theirs, did I rejoice over poor Smith, as I closed his eyes, and heard the attendant minister in fervent tones exclaim, "Blessed are the dead that die in the Lord; yea said the spirit, for they rest from their labours and their works do follow them." My friends, I am an old man.—During a long and eventful career in business, I have had intercourse with almost every variety of temper and disposition, and with many degrees of talent, but I have never found reason to swerve from the principle with which I set out in life, to 'temper justice with mercy.'

Such was the story of our friend. And I believe not one in that company but returned home more disposed to judge leniently of the failings of his fellow creatures, and so far as lay in his power, to extend to all who might fall into temptation, that mercy which, under similar circumstances, he would wish shown to himself, feeling, 'that it was more blessed to save than to destroy.'

GOING TO LAW.

We so frequently witness the foolish spectacle of parties going to law, as if for the mere love of the thing, without any possibility of gain, that we are induced to present our readers with two little stories, which may perhaps open the eyes of those, if any there be, who feel any inclination to indulge in a litigious spirit:—

Two Dutchmen, who built and used in common a small bridge over a little stream which ran through their farms, had a dispute concerning certain repairs, which it required after a time, one of them declining to bear any portion of the expense necessary to the purchase of two or three new planks. Finally the aggrieved party went to a neighboring lawyer, and placing ten dollars in his hands, said, "I will give you all dish moneys if you will make Hans do justice mit the bridge."

"How much will it cost to repair the bridge?" asked the honest counsellor of the determined litigant.

"Well, den, not more as five tollar," replied the Dutchman.

"Very well," said the lawyer, pocketing one of his notes and handing him the other, "take this, and go and get the bridge repaired; it's the best course you can take."

"Yaas," said the Dutchman, slowly, "dat ish more better dan to quarrel mit Hans," but as he went along home, he shook his head frequently, as if unable after all quite clearly to see how he had gained anything by going to law.

When is sugar like a pig's eye? Give it up! When it is in a hog's head.

NONSUITING A CREDITOR

There was a certain lawyer on the Cape a long time ago, the only one in these duggins then, and for aught I know a present here. He was a man well to do in the world, and what was somewhat surprising in a limb of the law, averse to encouraging litigation.

One day a client came to him in a violent rage.

"Look-a-here squire," said he, "that ere blasted shoemaker down to Pigeon Cove has gon and sued me for the money I owed him."

"Did the boots suit you?"

"Oh! yes,—I've got 'em on—fast rate boots."

"Fair price?"

"Oh yes."

"Then you owe him the money honestly."

"Course."

"Well, why don't you pay him?"

"Why, cause the blasted snob went and sued me, and I want to keep him out of the money if I can."

"It will cost you something."

"I don't keer a cuss for that! How much money do you want to begin with?"

"Oh, ten dollars will do."

"Is that all? Well, here's an X, so go ahead!" said the client; "that's the pay in the beginning."

Our lawyer next called on the shoemaker, and asked him what he meant by commencing legal proceedings against M.

"Why," said he, "I kept on sending to him till I got tired. I know'd he was able to pay—and I was 'termined to make him. That's the long and short of it."

"There's a trifle to pay on account of your proceedings—but I think you'd better take this five dollars, and call it square."

"Certain, Squire, if you say so, and darned glad to get it," was the answer.

So the lawyer give him one V, and kept the other. In a few days the client came along and asked him how he got on with the case.

"Rapidly!" cried the lawyer; "we've nonsuited him, he'll never trouble you."

"Jerusalem! that's great!" cried the client—"I'd rather a gin fifty dollars than have had him got the money for them boots!"—*Spirit of the Times.*

IMPORTANCE OF TEACHERS OF YOUTH.—There is no office higher than that of a teacher of youth, for there is nothing on earth so precious as the mind, soul!—character of the child. No office should be regarded with greater respect. The first minds in the community should be encouraged to assume it. Parents should do all but impoverish themselves, to induce such to become the guardians and guides of their children. To this good, all their shew and luxury should be sacrificed. Here they should be lavish, whilst they straiten themselves in everything else. Many should wear the cheapest clothes, live on the plainest food, if they can in no other way secure to their families the best instruction. They should have no anxiety to accumulate property for their children, provided they can place them under influences which will awake their faculties, inspire them with pure and high principles, and fit them to bear a manly, useful, and honorable part in the world. No language can express the cruelty or folly of that economy, which, to leave a fortune to a child, starves his intellect—impoverishes his heart. There should be no economy in education. Money should never be weighed against the soul of a child. It should be poured out like water, for the child's intellectual and moral life. * * * * A body of cultivated men, devoted, with their whole hearts, to the improvement of education, and to the most effectual training of the young, would work a fundamental revolution in society. They would leaven the community with just principles. Their influence would penetrate our families.—*Channing.*

"Doctor! that 'ere ratsbane of your'n is first-rate," said a yankee to the village apothecary.

"Know'd it! know'd it!" said the pleased vender of drugs—"don't keep nothing but first-rate doctor's stuff."

"And doctor," said the joker coolly, "I want to buy another pound."

"Another pound?"

"Yes, sir, I gin that pound I bought the other day, to a pesky mouse, and it made him dreadful sick, and I am pretty sure another pound would kill him."

LEGAL WIT.—Henry Erskine, the famous Scotch Barrister, a great wag, was once pleading before a funny Scotch Judge, with whom he was on the most intimate terms; and happening to have a client, a female, defendant in an action, of the name of Tickle, he commenced his speech in the following strain:—

"Tickle, my client, the defendant, my lord."

The auditors were almost driven into hysterics of laughter by the Judge replying—

"Tickle her yourself, Henry—you're as able to do it as I am."

Philosophy and Philanthropy are happily combined in the following hint. It comprehends a great deal of truth, and no small amount of humanity. "Every time you take your wife out to ride, you save a wrinkle from appearing on her face."

SOILS—THEIR CONSTITUENT ELEMENTS.

The following is No. 4. of a series of articles on Scientific Agriculture, by George Buckland, Esq. The first three were published in the *Cultivator*, and as that paper and the *Farmer* are united in the present, the remainder of the series will appear in this Journal. The present, and we presume the future articles will have no necessary connection with those already published, so that the reader who may not have had the advantage of a perusal of the first three, will not find it difficult to understand, and appreciate what is yet to come. We need say nothing more to ensure the reader's attention to whatever may emanate from Mr. Buckland, than to state that he has long been an active member of the Royal Agricultural Society of England—has received several prizes from that Society, for essays on Agricultural subjects, and attained a high character as a Lecturer before various Agricultural Societies in England. He has come to this country for the purpose of identifying himself with the advancement of our Agriculture, and is we believe a candidate for the chair of Agriculture when established in the University. We are proud to have Mr. B. as a contributor to our columns, and the more intelligent among our readers will, we feel sure, regard him as a valuable acquisition both to us and to our country.

The Literary department is not exactly the proper place for this subject, but the other departments were full before Mr. Buckland's article came to hand:—

THE APPLICATION OF SCIENCE TO AGRICULTURE.
NO. IV.

Having in a previous article explained some of the most important facts and laws of Chemistry, in reference to Agricultural Phenomena, we come now to the consideration of that which forms one of the principal objects of the farmer's attention,—the soil.

From the investigations and deductions of Geologists, we are led to conclude that most soil have been formed by the disintegration of the subjacent rocks by the action of water, frost and other causes combined. This view is supported by observation and experiment. Except in cases of *drift*, or when the surface soil is the result of a deposit, the materials of which have been brought from a distance by the action of running water, it is invariably found, that the various soils which form the surface of the earth have more or less a resemblance to the rocks on which they rest. Thus in a District where sand stone predominates, the soil will be found to contain a large portion of silica; clay will yield alumina, and limestone (as in many parts of Canada), will form what is termed a calcareous soil.

So intimately connected is geological science with practical agriculture, that by the mere inspection of a correct geological map of every district or country, the farmer can form a general opinion of the distribution of the various soils, together with their natural capabilities and proper mode of management. It is true that personal observation and practice, with due consideration of altitude, and other physical conditions are essentially necessary to enable a man to farm with profit in a particular locality. Agriculture in this respect is similar to all other arts; its leading principles are the same all over the world, and observation and practice must modify the application of those principles to meet the varying conditions of different localities. The geology of Canada is not yet sufficiently advanced to enable us beforehand to estimate correctly the agricultural character of entire districts. But in England, the whole of which has been pretty accurately surveyed, and its geological character ascertained; the scientific agriculturist by a mere inspection of a geological map, drawn upon a large scale, can point out the various soils occupying the country that are best adapted to particular crops, and the different systems of farm practice. A knowledge of principles, therefore, must be of the greatest service to the farmer, particularly when he is called upon to practice his art in a new country, where he cannot enjoy the advantages derived from a long, practical experience.

The soil then according to a law explained in a previous paper, is divided into two distinct parts. The *organic* and the *inorganic*. Whatever we find in it that has been the seat of life, whether it be of animal or vegetable origin, belongs to the former; while all the mineral and saline matters which form by far the largest bulk of the generality of soils, are classed under the latter. Organic substances are for the most part easily distinguishable: they possess a peculiar structure or *organism*; that is, they consist of organs, as fibres pores, &c., as may be readily seen on examining the structure of a piece of wood or meat. But it is well known that organic substances when deprived of the vital force, quickly decompose, and of course lose all traces of their organic character; yet their remains are considered to belong to the

denomination of organic matter, and exert a powerful influence on the growth of plants. Some things, such as gum, sugar, resin, &c., which possess no organization, but as they are produced by the agency of the vital principle, they are included in this class. By exposing a piece of earth to a powerful heat, and afterwards weighing it, the loss which the lump has sustained, consisted merely of organic matter and water; and what remains belong exclusively to the inorganic part of the soil. In our last paper we gave a short description of the inorganic substances, which enter into the composition of plants and soils. They perform an important part in the economy of vegetation: and the varying proportions in which they are found in different localities, constitute the main differences which distinguish soils. For the sake of clearness we will again state them. 1 *potash*, 2 *soda*, 3 *lime*, 4 *magnesia*, 5 *silica*, 6 *alumina*, 7 *oxide of iron*, 8 *oxide of manganese*, 9 *sulphur*, 10 *phosphorus*, 11 *chlorine*.

These then are inorganic substances which are found more or less in every fertile soil; and a knowledge of their composition and uses in the interesting and wonderful phenomena of vegetation, is, as we shall show more in detail hereafter, of the greatest importance to the intelligent and successful cultivator.

It is worthy of remark, that even the inorganic parts of the soil may be separated into two distinct groups—the *saline* and the *earthy*. By the action of water the former are rendered soluble; while the latter remain unaltered. In most soils the saline matters exist but in small proportions, seldom exceeding one or two per cent. of the weight of the entire soil when perfectly dried. The sulphates of potash and soda, common salt, or the chloride of sodium, the sulphate of lime or gypsum, are familiar examples of this class of bodies. Although as we have stated, the soil contains but a very small amount of saline matter in comparison with its weight; yet it must not be inferred that this amount is in itself insignificant. Without it indeed our fields would prove worthless and sterile. Professor Johnston has calculated, that only a single grain of saline matter in every pound of soil a foot deep, is equal to 500 lbs. in an acre. Now according to the most trustworthy analyses of various soils in different parts of the globe, it appears that this estimate—merely put for illustration—is much too low; so that the amount of saline matter in an acre of fertile land, is in itself no inconsiderable, although it is a variable quantity.

The *earthy* portion of the inorganic matter of the soil is insoluble, and forms the great bulk of its entire weight. Peaty soils, however, are an exception. They contain invariably a large portion of vegetable or organic matter, from fifty to seventy per cent. of their weight in a dry state. Being deficient in earthy ingredients, it is found necessary in reclaiming such soils, first to drain them, and afterwards to add marl, which consists principally of clay, sand and carbonate of lime. These materials give adhesion and solidity to peat soils, as well as furnish the necessary ingredients for the food of plants.

That the reader may form some definite ideas respecting the composition of soils, and of the practical value of correct chemical analysis, we select the following table from Sprengel, who stands high as an authority in all subjects connected with agricultural chemistry. In a thousand parts of dry soil there was found of:—

	No. 1.	No. 2.	No. 3.
Organic matter.....	97	50	46
Silica.....	618	833	778
Alumina.....	57	51	91
Lime.....	59	18	4
Magnesia.....	8½	8	1
Oxide of Iron.....	61	30	81
Oxide of Manganese.....	1	3	½
Potash.....	2	trace	trace
Soda.....	4	do.	do.
Ammonia.....	trace	do.	do.
Chlorine.....	2	do.	do.
Sulphuric acid.....	2	do.	do.
Phosphoric acid.....	4½	1½	do.
Carbonic acid.....	49	4½	do.
Loss.....	14		4½
	1000	1000	1000

Now this table is very interesting and instructive to the inquiring farmer. He learns from the analysis which it contains, that the several substances to which we have already referred, enter more or less into all fertile soils, and consequently that the unproductiveness of any particular soil must be owing to the want of some of these ingredients, in their proper proportions, or to the presence of some deleterious matters—such for example, as an excess of the salts of iron. That this knowledge of the nature and composition of soils when based upon accurate analysis, is not more curious than it is practically useful, we shall now proceed to prove. It is almost unnecessary to remark, that no improving farmer will close his eyes against whatever light may approach him, that will afford him clearer and more satisfactory views of the composition and capabilities of that which occupies his every day thoughts, and upon which he and all creatures depend for subsistence, the soil he cultivates.

In reference to the preceding table, Sprengel observes, that the soil of No. 1, was among the highest in the scale of natural fertility, and had yielded heavy crops for sixty years without the application

of manure. The second was below the average of the district in point of productiveness, nevertheless yielding good crops by judicious manuring. The third was all but sterile, affording scarcely any produce; but by the means of superior culture and manure, might be made comparatively productive.

Now let us just take a glance at the contents of this table, and we cannot fail to learn something that will throw considerable light on the arcana of farming. The amount of organic matters, or that which gives peculiar richness to a soil, it will be seen is more than double in No. 1, than No. 3, while the latter contains a greater quantity both of silica and alumina. Take lime, another important substance in estimating the capabilities of soils, and it will be seen that while No. 1 has no less than fifty-nine parts of that material out of every thousand, No. 2 has but eight en parts, and No. 3 only four parts.—This indicates great dissimilarity. Again, let us turn to potash and soda, two very essential ingredients in all fertile soils, and it will be seen that while No. 1 possesses two and four parts respectively, Nos. 2 and 3 contain of these valuable salts only a mere trace. And if we look to chlorine and sulphuric and phosphoric acids, it will be seen that No. 1 contains an appreciable portion of them all; No. 2 a much less quantity, while No. 3 affords only a trace of their presence. It is of importance to remark, that in most sterile soils what is commonly wanting are the salts and phosphates. The foregoing table will amply repay the closest investigation of the practical farmer; and will shew him what important aid analytical chemistry can extend to his pursuits. Who can impartially look at these investigations without perceiving a greater beauty, a clearer reason and the means of a more certain control over the various operations of the farm? Surely against such proofs of the great practical utility of science, the cry of ignorance or prejudice will not much longer be heard. Sprengel informs us, in reference to the second of these soils, that with good culture and manure it produced heavy crops of clover, turnips and potatoes—particularly with the application of gypsum a substance in which it will be perceived by referring to the table, the soil was very deficient. For instance, how remarkably great is the difference between lime and sulphuric acid in No. 1 and No. 2! Now the remedy in case of No. 2, appears obvious, viz.: the application of gypsum which is a sulphate of lime, that is, sulphuric acid combined with lime: this manure being not in both the materials, of which the soil is deficient. Agricultural chemistry affords numerous instances of a similar kind. And how much safer and more probable is it for the practical farmer to be guided by the unerring principles of science in all his proceedings, than to depend merely on mere guesses or haphazard experiments!

The proper classification of soils is a matter of much importance in agriculture. The earthy or insoluble portion of most soils generally amounts to 90 or 95 per cent of their entire weight, when freed from moisture. It consists principally of silica or sand, of alumina combined with portions of sand, denominated clay,—and of lime, which exists in the soil in the form of a carbonate, that is, lime in combination with carbonic acid. These three earths, silica, alumina and lime, forming the principal ingredients of the most fertile parts of soils, are commonly employed as the basis of classification.

Professor Johnston observes, in reference to this part of our subject, that "If an ounce of soil be boiled in a pint of water till it is perfectly softened and diffused through it, and if, after shaking, the heavy parts be allowed to settle for a few minutes, the sand will subside, while the clay—which is in finer particles, and is less heavy—will remain floating. If the water and fine floating clay be now poured into another vessel, and be allowed to stand till the water has become clear, the sandy part of the soil will be found on the bottom of the first vessel, and the clayey part on that of the second, and they may be dried and weighed separately."

"If 100 grains of dry soil, not peaty or unusually rich in vegetable matter, have no more than 10 of clay when treated in this manner, it is called a sandy soil; if from 10 to 40, a sandy loam; from 45 to 95, a strong clay soil; and when no sand is separated at all by this process, it is a pure agricultural clay."

When a soil is sufficiently adhesive for the making of bricks and tiles, it comes under the designation of a strong clay; and such soils, particularly in the absence of frosts, are the most difficult and expensive of any to cultivate. In Britain, where this class of soils occupies large areas, draining and subsoil ploughing have produced astonishing changes for the better; and we shall advert hereafter more fully to these matters. Soils that contain carbonate of lime in combination with alumina are generally denominated marls; if they contain from 15 to 20 per cent of lime, they are termed calcareous; the latter comprising the most productive class of soils for general purposes in the world. The scientific principle involved in the cultivation and general management of soils we must leave for our next paper.

B.

FELINE ELECTRICITY.—A Correspondent of the *Gardener's Chronicle* states that when the cat is cold, in winter, and you are cold too, if you put one hand on the cat's chest, and then rub the back with the other hand, you will (a Frenchman has just found out,) receive a sharp shock, and two or three weeks after the cat will probably die.

OUR TABLE.

TO CORRESPONDENTS.

- C. King, Nelson. Your letter, of the 8th, is received; and we are glad that you have written, as we are anxious that all Subscribers should get their Paper regularly. In looking over our book, we find your name has been accidentally omitted. We shall consider you a subscriber from the 1st January, 1848. We hope every Subscriber, when he finds his Paper missing oftener than once or twice, will immediately let us know, and we will strive to ascertain the cause, and remedy the error.
- W. W., Waterloo. Subscription received. We hope you will still make some exertions: perhaps you will be more successful with the new Paper. Any well-written articles, on the subjects you mention, provided they are not too long, will be inserted with pleasure.
- P. D. H., S. Hill, Brantford. We are sorry to inform you that it is out of our power to send you all the Nos. of the *Canada Farmer* you require. Your subscription will commence with the New Work.

DELAY—A POLOGY, &c.

We must beg those of our readers who were entitled to receive this Paper on the first of the new year to suspend their anger, if they feel any, for the delay in its appearance. After this month, we shall try hard, and spare no reasonable expense, to get our Paper into the Post-office at the proper time. We feel as strongly as our Subscribers can, the importance of regularity. But, in the present case, it was entirely beyond our power, at any cost, to have got out the *Agriculturist* at the proper day. We were not able to conclude the agreement, as to the amalgamation, till after the 1st of January; and the last number of the *Cultivator* was not published until two or three weeks after the proper time. One, and the principal reason, was the want of paper. None could be had in Toronto; and the navigation being closed, it was impossible to obtain it in time from abroad. The same difficulty stared us in the face, in regard to the *Agriculturist*. We had to wait till the paper was made at one of the mills near this City, and then we had to put up with a poorer quality than we intend to use hereafter. Had the writer of this continued the publication of the *Canada Farmer*, he would probably have obtained paper enough to publish the edition for that in time; but for so large an edition as we shall strike off of the present work, the paper was not to be had. We do not apprehend that the same difficulty will occur again; and we trust our readers will bear their disappointment patiently, in consideration of a fair promise for the future.

NOTICE OF BOOKS, &c.

The *Union Magazine* (New York), edited by Mrs. C. M. Kirtland, the distinguished American authoress, is one of the very best Literary publications of its class, of the present day. The first writers in the American Literary world are among its contributors. From the hasty manner in which we have been obliged to look over the number for January, 1848, which is now before us, we will not venture to express a decided opinion upon its contents. But Mrs. Kirtland's name is a sufficient guarantee for the literary excellence and moral character of the work. The present Number contains two beautiful Mezzotint Engravings, with several others in line and wood. The *Union Magazine* is adapted to the softer sex, as might be supposed; and from the bright array of names with the prefix Mrs. and Miss, on the list of contributors, all, or nearly all "known to fame," we feel sure that no better reading (except the Bible), could be placed in the hands of a sister, wife, or female friend, than will be found in its pages. Price, \$3; two copies for \$5.

READ THIS.—We particularly request all persons receiving this number of the *Agriculturist* to preserve it, if they intend to become subscribers. Although we shall print a large edition, yet, should a majority of the old subscribers to the *Cultivator* and *Farmer* order this paper, we shall not be able to furnish them a second copy of No. 1. Those who subscribe will please inform us if they have received the first number.

THE LADIES.

THE WELCOME.

Come in the evening or come in the morning,
Come when you're looked for, or come without warning,
Kisses and welcome you'll find here before you,
And the oft'ner you come here the more I'll adore you.
Light is my heart since the day we were plighted,
Red is my cheek that they told me was blighted,
The green of the trees looks fir' greener than ever,
And the linnets are singing, "True lovers don't sever."

I'll pull you sweet flowers, to wear if you choose them,
Or after you've kissed them, they'll lie on my bosom;
I'll fetch from the mountain its breeze to inspire you,
I'll fetch from my fancy a tale that won't tire you.
O! your step's like the rain to the summer-ve'd farmer,
Or sabre and shield to the knight without armour,
I'll sing you sweet songs till the stars rise above me—
Then, wandering, I'll wish you, in silence, to love me.

We'll look through the trees at the cliff and the eyrie,
We'll tread round the path on the track of the fairy,
We'll look on the stars, and we'll list to the river,
Till you ask of your darling what gift you can give her;
O! she'll whisper you, "Love as unchangeably beaming,
And trust, when in secret, most tunefully streaming,
Till the starlight of Heaven above us shall quiver,
And our souls flow in one down eternity's river."

So come in the evening, or come in the morning,
Come when you're looked for, or come without warning;
Kisses and welcome you'll find here before you,
And the oft'ner you come here, the more I'll adore you.
Light is my heart since the day we were plighted,
Red is my cheek that they told me was blighted;
The green of the trees looks far greener than ever,
And the linnets are singing, "True lovers don't sever."

READING THE WILL.

PAGE FROM THE DIARY OF A FORTUNE-HUNTER.

BY MRS. ADDY.

This morning I received a note from my affianced bride, Constance Graham, requesting me to attend at two o'clock that day, at the house of her late uncle, at Marley Street, for the purpose of hearing his will read. I had the greatest pleasure in complying with this invitation. I had really begun to fancy that old Mr. Graham was going to remain perpetually on the earth, like Mrs. Norton's "Undying One," he was always on the point of death, and always cured, and better than ever in the course of a few days; last month the cold water system seemed completely to renovate him, but he suddenly relapsed, departed from the world, and left fifty thousand pounds and a will behind him. Though Constance is the prettiest and most amiable girl of my acquaintance, I had determined never to marry her while her uncle lived; he had frequently proclaimed her his heiress, but as frequently took offence at something in her behaviour, and bequeathed his wealth to a hospital prison, or a lunatic asylum. I felt quite easy on the present occasion, for Mrs. Bates, Mr. Graham's house-keeper, had given the information that, only an hour before her master's death, he told her he had handsomely provided for Constance. I felt, however, that it was my policy to appear ignorant of that circumstance, Constance being very romantic, and Constance's mother very suspicious.

At the appointed time I walked into the drawing room in Marley Street; the very few relatives of the old gentlemen were assembled. There was Constance, looking as Hebe might have looked if Hebe had ever worn crape and bombazine; Constance's mother, looking stiff, cross, and uneasy; an elderly female cousin, and a stripling nephew of the deceased. I feared none of them. I knew that Mr. Graham disliked his fine lady sister-in-law, despised the severity of his elderly cousin, and dreaded the frolics of his stripling nephew. I seated myself by Constance, and in a soft tone began to protest my affection and disinterestedness. "Knowing the caprice of your uncle, my beloved," I said, "I have every reason to conclude that I shall hear that you are disinherited; this, however, will be of little moment to me; I have enough for comfort, though not for luxury, and, as the song beautifully says—

"Still fixed in my heart be it never forgot
That the wealth of the cottage is love."

"I fancy, Mr. Clifton," said Constance's mother, looking excessively sncerish and shrewish, "that it is pretty well known that my daughter is the sole heiress of her uncle's wealth."

"Indeed, madam!" I replied, with a start of surprise, "I was not aware that any surmise was hazarded concerning the contents of Mr. Graham's will."

"I have heard a surmise hazarded," sharply interposed the elderly cousin "that Mr. Graham was not in his senses when he made it."
"The mind must be both base and weak," retorted Constance's mother, "which could give credence to such a rumour." And forthwith a sparring dialogue took place between the two ladies, during which I whispered to Constance a page of Moore's poetry done into prose.

Temple now entered the room, the solicitor and intimate friend of the late Mr. Graham; he was a handsome young man, and had presumed at one time to lift his eyes to Constance; he opened the will and we all became intently attentive. Oh, what a disappointment awaited us! Three thousand pounds were bequeathed to Constance, (this was the old fellow's idea of a handsome provision!) Five hundred pounds to the elderly cousin, ditto to the stripling nephew, small legacies to the servants, and the remainder of his wealth to found a cold water establishment for the reception of those who were not rich enough to pay a gratuity for being half drowned. Temple read the names of the attest witnesses, and then refreshed himself with sherry and biscuits. As he was a friend of the family, his presence was no restraint on conversation.

"That will ought to be disputed," said Constance's mother, looking very red; "I do not believe Mr. Graham was in his senses when he made it."

"I thought," said the elderly cousin with a sneer, "that the mind must be both base and weak which could give credence to such a surmise."

"Dear mamma!" said Constance, "do not be discomposd; I am very well contented—I shall not be quite a portionless bride." Constance here held out her delicate white hand to me—I affected not to see it.

"My dear Miss Graham," I said, "do not believe me so cruel and selfish as to wish to plunge you into poverty."

"I thought you said that your income was sufficient for every comfort," remarked the stripling nephew.

I did not condescend to answer, but continued: "No, though it breaks my heart to do so, I give you back your freedom, saying, in the pathetic words of Haynes Bayly: "May your lot in life be happy, and undisturbed by thoughts of me!" I was just making for the door, leaving Constance looking more like Niobe than Hebe, when Temple said, "I think the party had better remain till I have read the codicil."

I reseated myself in amazement, and Temple forthwith read that the testator, being convinced that he had received no benefit from the cold water system, rescinded his legacy to it, bequeathing the same to his beloved niece, Constance Graham.

"Constance! dear Constance!" I exclaimed in the softest of tones. But Constance looked neither like Hebe nor Niobe, but stern and severe as Medea. I then attacked Temple. "Is it legal," I said, "only to read part of a will?"

"I read every word of the will," he replied, "and having greatly fatigued myself in so doing, I trust that it was perfectly legal to relish myself with a glass of sherry before I read the codicil."

I was going to utter some further remarks, when Constance's mother said, "Good morning, Mr. Clifton!" in a tone of voice which left me no alternative but to echo her leave taken, and I descended the stairs,—pursued by a smothering laugh from the party in the drawing room, returned home in very low spirits, and entered my adventure or rather my misadventure in my diary, deducting from it this valuable piece of advice to gentlemen in search of fortune: "Never believe that a will is concluded till you have inquired whether there is any codicil to it."—*Sharpe's Magazine*.

MATRIMONY AND MEAL.—"Love rules the camp, the court, the grove," so sings the Scottish bard; but among his own canny people it appears that love itself is sometimes ruled by the quotations of the corn market. A local paper relates that a buxom country girl in Ayrshire, left her place last Whitsun term, with the merciful determination of putting a matrimonial period to the doubts and sighs of her stalwart swain; but, having the bump of caution large, she read of high markets, and sagely pondered thereon; and, ultimately, she last week arrived at the dwelling of a civic functionary, in whom she placed implicit reliance, and requested, as a most particular favor, that he would give her his advice. The question she put was, whether markets were likely to rise or fall? "For," added she, in a whisper, "Alick and me intend to gang together at this time, but I canna mak up my mind to't wif the meal at 2s. 3d. a peck. Alick, I see, wad risk it at twa shillings; but faith I'll no try't aboon aughteen pence."

Not long since a woman in North Carolina shot her husband in the head for kissing another. At trial she managed her own case, made a glowing appeal to the jury in behalf of woman's rights, and was acquitted.

"Ma, whereabouts on the map shall I find the State of Matrimony?" "Oh, my dear, that is one of the United States."

When Dr. H. and Sergeant A. were walking arm in arm, a wag said to a friend—"Those two are just equal to one highwayman." "Why?" was the response. "Because," rejoined the wag, "it is a lawyer and a doctor—your money or your life."

SCIENCE AND MECHANICS.

COPPER.

At the present day, when the discovery of the extensive deposits of copper on the shores of Lake Superior and Lake Huron, has attracted such general attention to this most useful substance, it is probable that there are many persons in the country who either from having some pecuniary interest in the mines, or from a mere love of knowledge, may desire to obtain information on many points connected with this metal, such for instance, as its history, its properties, its applications in the arts, the useful compounds it forms with other substances; the minerals and ores in which it is contained, the chemical and mineralogical characters by which such ores can be distinguished, the geological nature of the copper formations, the method of working the mines, and the various operations and contrivances used in extracting and purifying the metal. These and many similar questions might easily be answered, by reference to books, but the information is scattered through a number of works, and it can scarcely be expected that many residents in Canada will be able to consult the several treatises on mineralogy, geology, chemistry, and metallurgy, from which alone an adequate knowledge of the subject could be obtained. Moreover, reference to public libraries is out of the question, except in large towns, and it therefore appears desirable, considering the almost universal attention at present directed to the subject, to publish in some widely diffused newspaper, a series of articles embracing the several points above mentioned.

Such papers might be made interesting to a large class of readers besides those personally interested in the mines, by not confining them to a mere description of the ores, mines and metallurgical processes, but by branching out in several directions, and giving descriptions of a number of those applications of the metal, or its compounds, which may appear worthy of attention.

Should you think the subject of sufficient importance to merit a place in your excellent Journal, I will supply the articles as rapidly as my leisure time will permit, and would propose the following as the headings of the several chapters:—

1. The history of copper and its compounds.
2. The geological formations in which it is found.
3. The ores and minerals containing it.
- 4, 5. The method of mining and working the ores, both in England and Germany
- 6, 7. The applications of copper and its compounds, as for instance, in the manufacture of brass, bell-metal, the coloring of glass, &c., &c.

To this last chapter a list of authorities might be added, as it would be better to introduce it at the end, than at each place where an extract has been made.

H. C.

CASE HARDENING.—The hardness and polish of steel may be united, in a certain degree, with the firmness and cheapness of malleable iron, by what is called case-hardening—an operation much practised, and of considerable use. It is a superficial conversion of iron into steel, and only differs from cementation in being carried on for a shorter time. Some artists pretend to great secrets in the practice of this art, using saltpetre, sal ammoniac, and other fanciful ingredients, to which they attribute their success. But it is now an established fact, that the greatest effect may be produced by a perfectly tight box, and animal carbon alone. The goods intended to be case-hardened, being previously finished with the exception of polishing, are stratified with animal carbon, and the box containing them luted with equal parts of sand and clay. They are then placed in the fire, and kept at a light red heat for half an hour, when the contents of the box are emptied into water. Delicate articles like files, may be preserved by a saturated solution of common salt, with any vegetable mucilage to give it a pulpy consistence. The carbon here spoken of, is nothing more than any animal matter, such as horns, hoofs, skins, or leather, just sufficiently burned to admit of being reduced to powder. The box is commonly made of iron, but the use of it, for occasional case-hardening upon a small scale, may be easily dispensed with; as it will answer the same end, to envelope the articles with the composition above directed to be used as a lute, drying it gradually before it is exposed to a red heat; otherwise it will probably crack. It is easy to infer, that the depth of the steel induced by case-hardening will vary with the time the operation is continued. In half an hour it will scarcely be the thickness of a sixpence, and therefore will be removed by violent abrasion, though sufficient to answer well for fire irons, and

a multitude of other utensils, in the common usage of which its hardness prevents its being easily scratched, and its polish is preserved by friction with so soft a material as leather.

STRENGTH OF MAN.—The power of a man to produce motion varies according to the mode in which he applies his force, and the number of muscles which are brought into action. In the question of turning a crank, a man's power changes in every part of the circle which the handle describes. It is greater when he pulls the handle upwards from the height of his knees, next greater when he pushes it down on the opposite side, though here the power cannot exceed the weight of his body, and is therefore less than can be exerted in pulling upward. The weakest points are at the top and bottom of the circle, where the handle is pushed or drawn horizontally. If a windlass be provided with two cranks placed at right angles with each other, two men will perform much more work than they could if the cranks were disconnected, because at the moment one puts forth his strength to the least advantage, the other is exerting his with the greatest effort. The mode in which a man can exert the greatest active strength, is in pulling upward from his feet, because the strong muscles of the back as well as those of the upper and lower extremities, are then brought advantageously into action, and the bones are favourably situated by the fulcra of the levers being near to the resistance. Hence the action of rowing is one of the most advantageous modes of muscular exertion: and no method which has been devised for propelling boats by the labour of men, has hitherto superseded it. According to Mr. Buchannan, the comparative effect produced by different modes of applying the force of a man, is nearly as follows. In the action of turning a crank, his force may be represented by the number 17. In working at a pump, by 29. In pulling downward, as in the action of ringing a bell, by 39. And in pulling upwards from the feet, as in rowing, by 41. Violent efforts are not true specimens of a man's labour; since they can be exerted for a short time only. A moderate computation of an ordinary man's uniform strength, is that he can raise a weight of 10 pounds to the height of 10 feet once in a second, and continue this labour for 10 hours in the day: his power may be estimated at $10 \times 10 \times 60 = 6000$ lbs. raised one foot high per minute, about the fifth of what a horse can raise. This is supposing him to use his force under common mechanical advantages, and without any deduction for friction.

THE MENAI BRIDGE.—The enormous bridge which is in course of erection across the Menai Strait has been thus described by a correspondent of the *Manchester Examiner*:—"If we suppose ourselves stationed in a boat in the middle of the Menai Strait, a few hundred yards distant from the new bridge on the south side, and suppose it finished, we shall see a wonder of the world of this kind: first, there is the middle pier rising out of the water founded on the Britannia rock, after which the bridge is named. This rock can be seen at low water. The breadth of this pier is sixty-two by fifty-three feet and a quarter of an inch. The blocks of stone are seven and eight feet long, by three and four feet in breadth and deepness; and they rise, stone upon stone, until the pier is 230 feet high. At the distance of 460 feet on each side of this centre pier there rise, near the water's edge, two other piers of the same gigantic breadth and height; while on each side of these two piers, at the distance of 250 feet, there rise two walls. Continuing outward the wall on our right hand, on the Carnarvon shore, does not extend its ponderous bulk far back; for the land is high and bold, and the railway comes along its elevated brow, and at once lays hold of the bridge. But on our left hand, which is the Anglesea shore, the wall is the forehead and end of a mighty embankment, on which the railway is raised to the level of the bridge. There, then, are the four spaces before us, across which, in the iron tubes, the railway is laid; namely, two spaces on each side of the centre pier of 460 feet each—(let the reader measure 460 feet on a street or on a road; and he will wonder at the vastness of this structure); and two more spaces of 250 feet respectively, at each end. The tubes are eight in number; each of them thirty feet on the exterior side, and twenty-seven feet high in the interior. Each is 14 feet wide, and they are laid in couples parallel to each other. In the whole, with the breadth of the piers and the landward buildings, the length of the bridge is one-third of a mile. In height the three piers are, as already said, 230 feet. Measuring from low-water mark to the bottom of the tubes, the height is 130 feet, the tubes being thirty feet on the side, and the pier seventy feet above their upper surface. As ornaments to the two walls, which rise upon each shore, are four lions, two at each end of the bridge. The lions contain about 8,000 cubic feet of stone. They lie crouched; and yet, the height is twelve feet; the greatest breadth across the body is nine feet; the length twenty-five feet; the breadth of each paw, two feet four inches. The tubes are made of plates of iron of various thicknesses, riveted together. The iron increases in thickness as we proceed towards the centre. The roofs of the tubes are formed of cells, and also the floors. These cells are formed of iron plates set on edge, the cells of the roof being within a fraction of one foot nine inches wide, and two feet three inches deep. The rails on which the trains run are laid on these cells of the floor. The flat bottom, the two upright sides, and the flat roof of each tube are formed of plates, the thinnest of which is a quarter of an inch, and the thickest three quarters of an inch. The weight of each of the four long tubes

will be about 1,000 tons: the weight of each of the four short ones about 600 tons. In the whole there will be at least 7,600 tons of iron used. The masonry will cost £200,000. They expect to finish the masonry by August 1849. It will contain one million and-a-half of cubic feet of stone."

ELECTIONS.

The most exciting topic of public interest, at the present moment, is the progress of the Elections. We give, below, the Returns, as far as received up to the time of going to press:—

CONSERVATIVE.

Brockville, George Sherwood; Cornwall, Hon. J. H. Cameron; Frontenac, Henry Smith; Hamilton, Sir Allan MacNab; Huron, Wm. Cayley; Kingston, John A. Macdonald; London, John Wilson; Lennox and Addington, B. Seymour; Niagara, Walter Dickson; Northumberland, A. H. Meyers; Simcoe, W. B. Robinson; Stormont, Alexander McLenn; Toronto, W. H. Boulton and Henry Sherwood; Missisquoi, John Badgley; Megantic, D. Daly; Sherbrooke County, S. Brooks; Stanstead, J. M'Connell; Prescott, Mr. Johnstone; Sherbrooke Town, A. Gagy—20.

LIBERAL.

Durham, James Smith; Glengarry, J. S. Macdonald; Grenville, Read Burrit; East Halton, John Wetenhall; Hastings, Billa Flint; Lanark, R. Bell; Lincoln, W. H. Merritt; Leeds, W. B. Richards; Middlesex, William Notman; Norfolk, H. J. Boulton; Oxford, Hon. Francis Hincks; Peterboro', James Hall; Russell, G. B. Lyon; Wentworth, Dr. H. Smith; York—1st Riding, J. H. Price; 3rd Riding, W. H. Blake; 4th Riding, Hon. R. Baldwin; Belecchasse, Hon. A. N. Morin; Champlain, Louis Guillet; County of Montreal, A. Jobin; Dorchester, R. Lemieux; Montmorenci, Joseph Cauchon; Quebec, Hon. T. C. Aylwin and J. Chabot; Quebec County, P. J. O. Chaveau; Richelieu, W. Nelson; Three Rivers, Dumoulin; Two Mountains, W. H. Scott; Vercheres, James Leslie; Montreal, Hon. L. H. Lafontaine and J. Holmes; West Halton, — Ferguson—32.

DOUBTFUL.

Carleton, J. G. Mailloch; Essex, John Prince; Ottawa, John Egan; St. Maurice, J. Papineau, L.—1.

Arrival of the Steamship Saledonia.

This splendid steamship arrived at Boston, on Tuesday last, bringing fifteen days later intelligence. The money market was improving; and it will be seen, by the particulars which follow, that the prices of breadstuffs are advancing. We give a comparative view of prices in Liverpool, on the 3rd and 18th ultimo:—

Telegraphic Prices of Breadstuffs in Liverpool.

	Dec. 3.		Dec. 18.	
	7s. 6d.	to 8s. 1d.	7s. 6d.	to 8s. 6d.
American Wheat	31 0	" 34 0	32 0	" 35 6
Indian Corn	15 0	" 15 6	14 0	" 14 6
Indian Meal	28 0	" 30 0	28 0	" 29 6

Annexed is a telegraphic view of the remainder of the news:—

The steamer *Washington*, as advertised, was to sail from Southampton on the 19th ultimo, for New-York.

The French steamer *New-York* put back to Havre, on the 12th ultimo, with six feet of water in the hold.

The French steamer *Union* put into Cherbourg, on the 1st of Dec., from longitude 13, leaky and pump-checked.

The *New-World* will sail on the 21st, with full cargo, and a complement of passengers.

The English Parliament, since opening, has been chiefly occupied with the affairs of Ireland.

The bill for the suppression of crime in Ireland will soon become a law. It is of the most gentle character, and is expected as the precursor of ameliorative measures to answer the end designed.

Lord Palmerston has denied that Lord Pinto was charged with diplomatic mission to the Court of Rome.

The celebrated Father, Thomas Maguire, the Roman Catholic Divine Controversialist, died the week before last, in Ireland.

Within the last fortnight or three weeks, the British Islands have been visited by a succession of tremendous gales, causing the most appalling loss of life and property on the coast. Several vessels have been wrecked, either with the whole or a considerable portion of their crews. Among other ships, from this port, that have shared in the casualties, is the *Franklands*, for Callao, whose master and twenty of the hands were drowned.

Spain is tolerably tranquil, though the Carlists are, as usual, unsettled. In the Cortes a fierce attack has been made upon the administration.

There is no intelligence of importance from France. The health of the King is bad.

Agarian disturbances have somewhat subsided in Ireland. Father Matthew will proceed to America in the *New-World*, early in April next.

Mr. Liston, the eminent surgical operator, is dead.

The commercial news from India is highly gratifying. Trade has suffered nothing from the embarrassments of England, and is represented as being in an exceedingly flourishing condition.

The turmoil in Switzerland is brought to a final close. The diet has decreed, that the seven revolted cantons of the league are to be held accountable for the expenses of the war, and to be occupied by the federal troops until the amount is paid.

THE MARKETS.

LONDON MONEY-MARKET, December 17.—Since the departure of the *Hibernia*, the money market has not undergone any remarkable change. The rapidly improving condition of the Bank of England, which now holds upwards of eleven millions of bullion, has greatly tended to ameliorate the consequences of additional failures, and to sustain, in some measure, the tottering confidence of the country. Notwithstanding, however, the operations of this cause, as well as other influences of a similar effect, those anticipations of improvement, which were lately founded upon a relaxation of the monetary pressure, and increased facilities of discount, have been seriously staggered by the continued fall in value of produce, particularly colonial, and the almost unparalleled difficulty of realizing, save at an enormous sacrifice. Although the general aspect of trade is gloomy enough, no positive retrogression from the last month's average is observable, and it is regarded as less than suppositious, that the depression can much longer resist the growing financial power of the country, and the increasing disposition of money holders to make advances upon terms advantageously alike to all parties.

LIVERPOOL, Dec. 18, 1848.—Best Western Flour, 29s. to 30s.; Richmond and Alexandria, 28s. to 29s.; Philadelphia and Baltimore, 28s. to 29s.; United States and Canada, sour, 23s. to 24s. 6d. Wheat, United States and Canada, per seventy pounds, white and mixed, 7s. 7d. to 8s. 6d. Indian Corn, 31s. to 35s. 6d. per quarter. Cornmeal, 14s. to 15s. 6d. per barrel. Oatmeal, 25s. to 27s. 6d. per two hundred and forty pounds. Barley, 3s. to 4s. per sixty pounds. Rye, 3s. to 3s. 7d. per sixt y pounds. Peas, 28s. to 34s. per five hundred and four pounds.

UNITED STATES AND GREAT BRITAIN.—REPEAL OF THE NAVIGATION LAWS.—The Washington correspondent of the *New-York Herald*, in a letter dated the twenty-first ultimo, communicates the following important information, the accuracy of which is vouched for:—

A correspondence has taken place between the British Secretary for Foreign affairs and our Minister at that Court, relative to the Repeal of the Navigation Laws of Great Britain. Mr. Bancroft applied to Viscount Palmerston, early in November, to learn whether Ministers would consent to establish with the United States a perfect system of reciprocity, in making all vessels of either country, fitting out from any port in the world, free to trade to any port of the other nation, whether home or colonial. Viscount Palmerston, after the lapse of some weeks, replied, that although her Majesty's Ministers did not feel at liberty to advise her Majesty at once to make such a change in the commercial system as was asked by Mr. Bancroft, without the sanction of Parliament, yet, as soon as that body would meet, a measure would be introduced which would embrace all the views put forth by Mr. Bancroft in his note. It is not doubted but that Parliament will at once act favourably on the bill. The importance to the United States, of such a measure, cannot be exaggerated.

The Hamilton Board of Trade has appointed G. S. Tiffany, W. W. Merrit, and Malcolm Cameron, Esqs., a Deputation to go to Washington, to endeavour to assist in bringing about a reciprocity of Trade between Canada and the United States. What particular steps these gentlemen are to take we are not aware.

It is stated that the Montreal Banks refuse, this season, to extend any of their usual accommodation to speculators in grain.

Home Markets.

The following table gives the highest average prices at each of the three places:—

	Toronto, Jan. 15.	Hamilton, Jan. 14.	Montreal, Jan. 12.
Flour, per barrel	£1 1 3	£1 3 9	£1 6 0
Wheat, per bushel	0 3 9	0 3 9	0 0 0
Barley, per 48lbs	0 2 0	0 0 0	0 4 0
Rye, per 56lbs	0 3 4	0 0 0	0 4 0
Oats, per 34lbs	0 1 2	0 1 3	0 1 6
Peas, per 60lbs	0 2 0	0 0 0	0 0 0
Oatmeal, per barrel	1 2 6	0 0 0	1 7 6
Potatoes, per bushel	0 4 6	0 3 9	0 3 6
Hay, per ton	2 10 0	2 0 0	0 0 0
Beef, per 100lbs	0 18 6	0 17 6	p. brl. 2 0 0
Pork, per barrel	1 0 0	1 0 0	2 15 0
Lard, per lb	0 0 6	0 0 0	0 0 7
Butter (fresh), per lb	0 0 10	0 0 0	0 1 1