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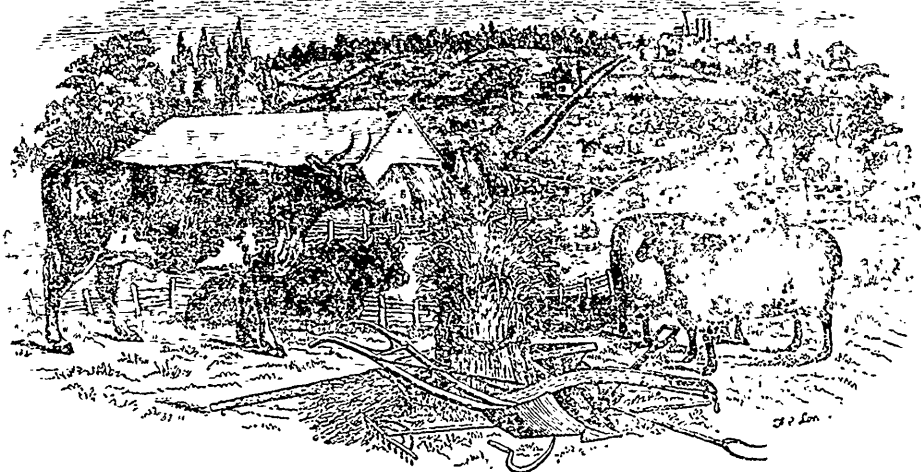
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# CANADIAN AGRICULTURIST.



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

GEORGE BUCKLAND,  
WILLIAM McDOUGALL,

EDITOR,  
ASSISTANT EDITOR.

VOL. III.

TORONTO, MARCH, 1851.

No. 3

## The Canadian Agriculturist.

Published Monthly, at Toronto, C. W.

### TERMS:

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### BOARD OF AGRICULTURE:—EXPERIMENTAL FARM.

We have received from several valued correspondents, hints and opinions relative to the above important projects. Although these were given, it is presumed, with no expectation that we should make any public use of them, we trust

that our correspondents will forgive us, if we cull a few sentences from their communications, for the consideration of our readers; the matters referred to possess a wide-spread public interest. It is a hopeful sign of the times, when the most intelligent and influential individuals connected with farming, in different sections of the country, proffer their advice and assistance in promoting the cause of agricultural improvement.

An experienced farmer in the Niagara District, after expressing his satisfaction that a Professorship of Agriculture was at last about being formed in the Toronto University, asks, “whether so much as 60 acres would be required for mere experimental purposes?” He suggests the propriety of each County Society carrying out “a full set of experiments for itself. If each one directed a set of experiments, and the results arranged and published by the Board, would not the good sought be equally well attained? Division of labour constitutes the wealth of nations;

and is equally applicable to societies as to individuals. *Experimental farms* at one half the size, where improvements could be exhibited, would be frequented by, and gratifying to, the man of business; far beyond mere lectures and scientific experiments. The mass of visitors to the University farm will, most likely, consist principally of this class; and under the direction of a practical man, it will be turned to a good account."—[We think 60 acres not too much for a central institution, where the science, as well as the practice of agriculture is to be taught to pupils. The suggestion that each society institute a set of experiments is an excellent one, and the central Board and Experimental farm, may be made to assist in carrying it out. This agrees with the idea of another correspondent, who observes: "I think the Board might in connection with the intended farm, furnish competent individuals, or societies through the Province, with new and improved seeds, and also recommend and procure for testing, different implements and machines." Another remarks. "If nothing more results from the present movement, than to place agriculture in the rank of the useful sciences and honorable professions, in a country where four-fifths of the people are farmers, it will be a good point gained. But I consider, in common with many others in this part, that the formation of a central Board, chosen by the different Agricultural Societies, and the publication of a respectable annual report, to be essentially necessary to the well working of the whole."—Some recommend that the Board should import, and keep on the farm, the best varieties of live-stock; while others think that such matters could be best managed by enterprising individuals and the different Agricultural Societies.

We must make room for the following extracts from the communication of an extensive and highly intelligent farmer, in the County of Norfolk, upon whose opinion and judgment, we set a high value.

"An universal feeling of satisfaction prevails at the prospect of a Professor of Agriculture in the University. \* \* \* \* \* Sanguine ex-

pectations of beneficial results are extensively entertained, as the consequence of establishing a Board of Agriculture, in connection with an experimental farm. I trust that I, as a farmer of some years standing in this country, shall not be considered as either obtrusive or presumptuous in writing a few words by way of suggestion.

"It is premised that the Farm will not be conducted precisely after the plan of any of the most approved establishments of the kind in Britain, but to a certain extent, after the system that experience shows must be adhered to, in order to success in this peculiar climate; and that to effect this some person of the country should be allied in the management, with a scientific and practical agriculturist from Britain. We are all now ready to admit that our vocation may secure large assistance from the hands of science; but we are not yet completely divested of what may be termed prejudices against theorists; and we therefore hope to be triumphantly shown, that in the modern systems of farming, theory and practice may be correctly and profitably blended.

"I need not tell you that the farmers of this Province,—and of this remote quarter in particular,—are poorly remunerated; that their business only requires the most laborious and most economical. We have not only to contend with the disadvantage of low prices, but that of high wages also. This latter circumstance forbids recourse to what is known at home as high-farming, embracing expensive plans of fertilizing, thorough draining, &c. But there may be with us inexpensive means at hand, which only require investigation and testing to be made practically available. Indeed the observation of many in this township, where large quantities of charcoal were formerly made for the Normandale Furnace, convinces them that that substance is a very valuable manure; but the proper quantity per acre, frequency of repetition, mode of application,—whether in a state of powder or coarsely crushed, are as yet unsolved problems. May I mention the hope that this and such like matters, may be deemed fit subjects for investigation on the Experimental farm.

"I would beg in conclusion to state that it will afford me great satisfaction, to be enabled to render any assistance to the Board of Agriculture, in obtaining correct information of a local character."

The same writer observes in reference to the *Agricultural Association of Upper Canada*:—"The importance of your Society is now so generally admitted, that I believe I am justified in saying the only feeling here, is one of regret that

our means should be so limited, as to prevent the offer of an amount, more in proportion to the rank and usefulness of the Association." Similar sentiments have been expressed by the Secretary of the Prince Edward Society; which, with that of Norfolk and several others, have steadily supported the Provincial Association from its commencement. We hope and believe that there will now be no falling off; but rather an increased, united, and systematic effort to sustain and improve the important interests of agriculture, worthy of the enlightened and advancing age in which we live, and the free and noble country that we inhabit. Canada, like a true scion of the Parent state; "*Expects every man to do his duty.*"

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#### IMPORTANT SALE OF SHORT HORN CATTLE.

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We request the attention of our readers to the extensive sale of pure bred short horns, announced on our last page. Mr. Vail has been distinguished for a number of years as among the foremost on this continent in importing and improving Durham cattle; and we are assured by a friend, on whose judgment in these matters, we set a very high value, that on no single farm this side of the Atlantic, had he ever seen so large a number of valuable and pure-bred animals as those possessed by Mr. Vail. We may just mention that Mr. Howitt's celebrated bull, (with which, and its progeny, its owner has such good reason to be satisfied) that won the first prize at the last Provincial Exhibition at Niagara, was bred by Mr. Vail; and that two of our most successful Canadian breeders,—the Hon. Adam Fergusson and the late lamented Mr. John Wettenhall, have bred from Mr. Vail's stock with the most satisfactory results. It is scarcely necessary to say that Mr. Vail's character as a man of business is such, that the fullest confidence may be safely placed in the statements which he puts forth. We shall rejoice to hear that a portion of his herd has been secured to Canada. Very few things we more urgently require.

#### NEW YORK STATE AGRICULTURAL SHOW.

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The Exhibition for the present year will take place at Rochester, on the 16th, 17th, 18th and 19th of September. John Delafield, Esq., of Geneva, an enterprising and intelligent agriculturist, has been elected President.

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#### THE EFFECTS OF TOBACCO.

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The cultivation of this weed has already exhausted some of the richest soils on this continent. By merely drawing tobacco smoke into the mouth, without being inhaled into the lungs, it acts principally on the nervous system, and produces the effects of a stupifying narcotic. The chewing of tobacco has a similar effect. Both are practices which admit of no rational defence. The money expended in tobacco and snuff by many individuals, would be sufficient to enable them to collect a useful library; thus enlightening and strengthening their heads, instead of injuriously exciting their nerves and thereby weakening their bodies. If men would consent to the disuse of tobacco, the cause of innumerable accidents by fire, and no small amount of intemperance, which now afflict society, would be removed.

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#### REASONS WHY COFFEE IS SO SELDOM WELL MADE.

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1st. The berries are frequently too much and too rapidly roasted, their proper colour being that of cinnamon; 2nd. The coffee is ground too fine; 3rd. Not enough coffee is used; 4th. It is usually overboiled, by which means the bitter principle is extracted from the berries, and little or no pains are taken to clarify it. In teas, as well as coffee, the markets in Canada and the States are always overloaded with inferior, and frequently worthless kinds; from which it is impossible to prepare a wholesome and delicious beverage. Pure water is infinitely preferable.

## HOW TO DISTINGUISH MUSHROOMS FROM POISONOUS FUNGI.

The Fungi form an interesting and rather extensive department of the vegetable kingdom; several of the species being highly poisonous, and many fatal mistakes are made from not knowing how to distinguish them.

The fact that a fungus is pleasant in flavour, affords a presumption that it is wholesome; but, if on the contrary, it has an offensive smell, a bitter, astringent, or styptic taste, or is even of *unpleasant* flavor, it is unfit for food. Color, figure, and texture cannot be relied on; yet the pure yellow, gold color, bluish pale, dark or lustre brown, wine red, or the violet, belong to many that are eatable; while the pale or sulphur yellow, bright or blood red, and the greenish, are generally poisonous. The safe kinds have mostly a compact, brittle texture; the flesh is white; they grow more readily in open places than in damp or wood-shaded spots. In general, those may be suspected which grow in caverns, on animal matter putrifying, as well as those whose flesh is watery.

### LIVE FENCES.

This is a subject that must soon, in some parts of Canada, be practically entertained. Already has fencing timber, in several places, become exhausted, and its price consequently much enhanced. Hedges will prove more economical, afford better shelter, and will quite change the appearance of the country. Nothing seems so strange and objectionable to an old countryman, as our zig-zag wooden fences; which however, are in the first instance quite indispensable.

A Pennsylvania correspondent of the *Horticulturist* strongly recommends the native buckthorn, as forming the hardiest and best hedges for farmers in that State. Young plants may be procured at the nurseries for \$5 to \$6 per thousand; or they can be raised from seed, sown like peas, and after they have grown one year in rows they may be transplanted into a hedge. The ground should be well cleaned, manured, and deeply cultivated. Set the plants in double rows,

six inches apart; not opposite but alternating with each other.

We shall be happy to hear from any of our readers, that have had experience in raising hedges in this country.

### EMBELLISHMENT OF ROCHESTER, N. Y.

The *Horticulturist* observes that an extensive and beautiful improvement is about to be effected in the environs of Rochester, by building up a part of the suburbs of that city, so as to combine the greatest amount of comfort, health and beauty possible. A suitable piece of land has been selected; in the centre of this, a park of 60 acres is to be laid out and planted in the best manner, and around this are to be located the various cottages and villas of the shareholders, with ample space for gardens, shrubbery, &c.

We are glad to hear of this laudable undertaking, and hope the example will not be lost upon other cities in this hemisphere. The almost entire absence of even unadorned open spaces in American towns having large populations, is a serious drawback to health and comfort, and indicates a sad want of taste. We hope the proper authorities will look to these matters, as regards the public buildings and institutions in Toronto; so that our fair city may be rendered still fairer, by the refining and elevating influences of nature, aided by art. Providence has wisely connected the conditions of public health with external adornments. Our beautiful University grounds have yet to be completed; the extensive common, when enclosed and planted, will form a public park unparalled, perhaps, on this continent; and the ornamental grounds of the cathedral church of St. James, now in course of erection, and the normal school, about being erected, will greatly add to the appearance, and we may observe also, to the salubrity of our rapidly increasing city.

### STARCH FROM THE HORSE CHESNUT.

Mr. Belloe stated to the Academy of Science, of Paris, that he had obtained from 19 to 21 per cent of perfectly white and tasteless starch from the Horsechestnut, by simple washing in cold water and decantation.

### RYE IN A WILD STATE.

According to M. De Candolle, both history and botany agree in rendering it probable that wheat, barley, rye, and oats came originally from Asia, especially from the western and central regions of that continent. M. C. Koch, an eminent scientific traveller, affirms that he found Rye under circumstances, in Armenia, the Caucasus and Crimea, where it appears to be really spontaneous and native. On the mountains of Pont, at an elevation of 5,000 or 6,000 feet, he found Rye growing on a granite soil; it was thin and the ear about 1 to 2½ inches long, and no one remembered that it had ever been cultivated in the neighbourhood.

### DEODORIZING POWERS OF CHARCOAL.

Charcoal, which consists principally of the chemical element, *carbon*, is known to possess a high power of absorbing gaseous bodies, and to act beneficially, in many cases, when applied to growing plants. Charcoal prepared from Irish peat, exhibits great disinfecting powers. One part of night soil mixed with two parts of charcoal, and ground together, as recently tried in London, yielded no disagreeable odour whatever. It affords an admirable means of disinfecting cess pools. It has been found successful after careful experiments with many different manures. This is a property which will doubtless be turned to good account, both as regards the public health of crowded cities and the interests of the gardener and farmer. Charcoal obtained from wood, in the usual way, must possess similar qualities, and in most parts of Canada possess the means of procuring it in abundance.

### WHY ARE MEALY POTATOES MORE NUTRITIOUS THOSE WHICH ARE WAXY?

Because of the greater quantity of *starch* which they contain. Thus, a microscope shows a potatoe to be almost entirely composed of cells, which are sometimes filled, and sometimes contain clusters of beautiful oval grains. Now,

these little grains remain unchanged in cold water, but when it is heated to about the degree that melts wax, they dissolve in it, and the whole becomes a jelly, and occupies a larger space than it did in the form of grains. When a potatoe is boiled, then each of the cells becomes full of jelly, and if there be not a quantity of starch in the cells, it will not burst. But if the number of grains or their size be very great, the potatoe is broken on all sides by the expansion of the little masses of jelly; and mealiness is produced.

Frost-bitten potatoes are sweet, from the spontaneous conversion of their starch into sugar: the same effect takes place when potatoes sprout in the spring, and they are consequently of less value as food. Potatoes should be stored in the fall with a portion of earth adhering to them, or at least mixed with them; this keeps them a little damp, and prevents the action of the atmosphere from causing a too powerful evaporation.

### COUNTY OF YORK AGRICULTURAL SOCIETY.

We make room for the following Address of the retiring President, E. W. Thomson, Esq., read at the Annual Meeting, as it possesses more than a local interest. Mr. Thomson was unanimously re-elected for the current year.

*To the Members of the County of York Agricultural Society.*

GENTLEMEN,—In laying down the office I have had the honor to fill during the past year, and for many previous years, I think it incumbent on me to make a few remarks relative to our advancement as a Society; and while I have to regret that there still exists a very considerable degree of apathy on the part of the farmers of the County generally with regard to the interests of the Society, I think I may freely congratulate its few zealous friends, who, with myself, have from its formation, taken a deep interest in the welfare of this Society, upon some degree of advancement, as well as upon the increased interest manifested throughout the country at large in the advancement of Agriculture. And although all that we wished has not been done in our legislative halls, some degree of attention has been awakened, and some progress made towards giving that prominence to the agricultural interest of our country, which ought to be awarded to it as the most important of all its interests. I allude to the act establishing a Board of Agriculture, to which act you will, I presume, give effect by electing (as far as the voice of this Society will go)

the members necessary to form that Board, after the election of the officers, who are to be selected to manage the business of the Society for the ensuing year.

I have also to congratulate the Society and country upon the probability of a Professor of Agriculture being appointed in the University, and the establishment of an experimental farm in conjunction therewith. All these being within the limits of our Society will afford to us increased facilities for advancement, which it will not be creditable to us to neglect. While these institutions are intended to be, and no doubt will be, highly beneficial to the country at large, our local position gives superior facilities for improving them to an extent not possessed by others; and it therefore becomes us to be energetic in endeavouring to extend our influence, and the best mode of doing this is by inducing a greater number of practical men to join our Society.

At our Spring Fair in May last, there were 156 entries made, and premiums awarded, amounting to £95 10s. The show of horses, I believe, was very generally admitted to be the best ever had. The improvement made in this important department of breeding is highly creditable, and cannot fail to prove remunerative to the judicious breeder. We owe much to those spirited individuals who have imported valuable stallions, and it might be well to take into consideration the propriety of improving the opportunity which the coming season will offer, of importing from England some valuable animals. At our October Fair, the show of sheep and swine was as usual good, and the display of carcasses in the market abundantly proves that there is no falling off in that department. We have a few fine horned cattle throughout our county, but that there is a scarcity of the improved breeds must be admitted. Still I think they exist to a sufficient extent to warrant a more distinct classification at our shows than we have hitherto had. The whole number of entries in October was 269, and the amount of prizes awarded was £101 5s. The Treasurer's account will show the state of our funds, and I trust the balance will be largely increased by the addition of members before our next May Fair, in order that this may be the case, each member should exert himself to induce others to join. It is no small matter of surprise that it should be necessary to make an effort to induce any farmer, or any one who duly appreciates the advantages that result from efforts, to contribute the trifling sum of five shillings, to entitle him to all the advantages of membership: but such is the fact. I would therefore recommend that we commence this year's operations by taking a certain number of copies of the *Agriculturist*, and giving one at a reduced price to each member, with the double view of upholding that journal, and increasing our subscription list. No better proof can, in my opinion, be given of increased attention on the part of the farmer to his best interests, than a desire to obtain a knowledge of everything appertaining to his calling; and this

he certainly can obtain by reading the *Agriculturist* and similar publications. It should be borne in mind that liberal support is necessary to enable the publisher of any journal to do justice to it; and we might avail ourselves to a greater extent than we do, of the opportunity afforded by the publication of such a journal, of conveying useful information to each other, though living remote from one another.

Having made these few remarks, I will conclude with the expression of a hope that while our own best exertions are put forth in our calling we shall look for a blessing upon those exertions to that power who causes the sun to shine, the rain to fall, and the earth to bring forth its fruits, and without whose blessing we labour in vain.

The above is respectfully submitted.

E. W. THOMSON,  
Retiring President.

Feb. 12, 1851.

### SUMMER FALLOWING.

*The Editor of the Agriculturist.*

DUMFRIES, 18th Feb., 1851.

SIR,—

In your number for January, in remarking upon a communication from Waterloo, in which reference was made to a system of cultivation spoken of as prevalent in Dumfries, viz., that of ploughing land intended for summer fallow and then working it with the cultivator and harrow until ready for seed;—you ask me farmer in Dumfries to furnish you “with particulars and authoritative results.” I had hoped to see in your February number a reply from some party, who had made a more thorough trial of the system to which your correspondent alludes, and one in more exact accordance with it than the experiment which I am about to detail to you. I had heard of parties having worked their fallows somewhat in the manner your correspondent details, and two years ago, resolved to give it at least a partial trial on a field of thirty-two acres.

The previous cultivation of the field had been irregular, and various in different portions of it. Twelve acres had been several times in grass and repeatedly manured. Twenty acres were hilly and broken, had been only once in grass, and a portion had got very foul in consequence of having been broken up and from accidental circumstances obliged to be left. The year preceeding the fallow, the state of the field was as follows. That portion of it to which I have last referred, (about 10 acres) was sown with peas, but the return was a very poor one, and the land was left more foul than before. About 6 acres were in oats after grass,—4 acres, principally a steep side hill, were in grass,—4 acres in wheat after fallow, and 6 acres in barley, after Indian corn. In the fall of 1848, the whole field, with the exception of about 2 acres, which the frost interrupted me from completing was ploughed with the Scotch plough to the depth of from 6 to 7 inches,

The remainder was ploughed as early in the following spring as the plough could enter the ground. As soon as the grass began to shew itself in the furrows, and the ground was dry enough, the cultivators were put on across the ridges, followed by the harrows, succeeded by the cultivators again. This course was followed during the whole season, as occasion required. Whenever the grass began to shew itself, and I was too busy with any thing else to pay immediate attention to it, a large flock of sheep was turned out, and the grass kept down by them. A day, sometimes two, proved sufficient to make it necessary to remove the sheep. There is this difference between the system alluded to by your correspondent and the plan I followed.—I ploughed again for the seed, and I was much pleased with the appearance of the soil when turned up. It was firm and cloddy. The grass-roots were thoroughly rotted, and the fallow altogether was one of the cleanest I have seen.

It was sown with bearded wheat (the wild goose) on the 4th and 5th of Sept. The seed was covered by the cultivators, followed by a single turn of the harrows.

The result was as follows:—The straw, even on that portion which was likely to produce it weakest, was stronger than other straw of the same kind on land of similar quality, differently treated. It was much better headed. It rose better after the storm, by which wheat was so severely laid just before harvest, and it yielded rather more than 25 bushels per acre; although, owing to a scarcity of hands and the way in which the grain was "straw-buckled" by the storm, there was much more than ordinary loss in harvesting. This was not a large return, but it was larger than was obtained from neighboring fields, well worked in the usual way, and under the same description of wheat.

I ought to have told you that the soil is a lightish loam, resting upon gravel, with, in some places, more or less of a red marly subsoil intervening and is what is called, "*oak plains*." The field suffered very materially from the severe and long continued drought of last summer.

I am very confident that the crop was at least as large as I should have had under the ordinary mode of fallowing in this country, with the plough and harrows merely; and I am quite sure that I could not have cleaned the foul portion of the field, as effectually as has been done, by any other method, without being at a much heavier expense of time and labour. The land is now clean.

The cultivator used was the common triangular implement, (with the steel teeth imported from the United States,) and which has been pretty extensively introduced in this section of country, within the last three or four years. Even in that shape it has proved a very useful and labour-saving implement. Others with similar teeth,

but of a superior construction otherwise, have, as you must be aware, been since introduced.

I am, Sir,

Your most ob't ser'vt,

DAVID BUCHAN.

[It would aid materially the cause of agricultural improvement, if a number of our readers, in different parts of the country, would send us for publication, the details and results of their respective modes of cultivation, similar to the above. All arts are advanced by the mutual interchange of information derived from experience. This applies particularly to agriculture, which is a complex art, pursued by isolated individuals under a long series of varying conditions as regards both soil and climate. We hope soon to hear again from our intelligent and respected correspondent, on such practical matters as have come within the range of his observation and experience. In this manner, there is scarcely one of our readers, but might render some aid to the agriculture of the country.]—Ed.

#### ON BUTTER MAKING.

The following simple and practical directions with regard to an important department of the economy of a farm, we have received from a correspondent; and we doubt not several of our readers will find them useful. Butter, generally in this country, is by no means so good as it ought, and might be. Attention to the subjoined rules will facilitate the improvement of the quality of this important article, and increase its marketable value.

*To the Editor of the Agriculturist.*

Our cows are kept in the ordinary way, pastured in summer, and fed on clover hay and bran mash in winter, with the addition of a few cabbages now and then.

By the way I find white clover, or common meadow grass, makes better butter than red clover, although the latter makes the largest quantity.

The cows are milked at 6 A. M. and 6 P. M. in summer, and 7 A. M. and 5 P. M. in winter.

We use large shallow earthenware pans, 18 inches diameter at top and 5 in depth, in preference to tin ones; the latter seldom being made shallow enough in proportion to the depth, besides being objectionable in several other ways.



The pans should be kept carefully clean, and should be scalded before putting the milk in.

The milk should stand till *sour* in summer before skimming, in order to give all the cream time to rise, and the butter will be none the worse for it. In winter it stands 18 hours before skimming.

The cream is kept in a tall earthenware jar, in a cool airy place, and covered with wire-gauze to keep out the flies.

The cream is churned twice a-week in summer, and every ten days in winter. [We use Fraer's churn.] The cream is always brought to a heat of 62 degrees, before putting it into the churn, by putting cold water in, in summer, and setting it by the fire in winter.

When the butter is gathered, it is taken out of the churn with a wooden ladle, and the milk worked out in the bowl, with the ladle; when the milk is worked off, cold water is poured on and allowed to run off without working the butter in it; when tolerably worked it is weighed, and 1 oz. fine saltpetre is added to, and well mixed with, 1 lb. of the finest dairy salt; and 1½ oz. of the mixture put to each pound of butter. The rest of the milk well worked out and the butter made into rolls or put into small stone jars.

The hands are never allowed to touch the butter during the whole process, it is a dirty practice, and makes the butter disgustingly soft and greasy.

The butter made as above is considered by all who have tasted it to be first-rate, and commands the highest price.

J. M.

Ancaster, Feb. 10th, 1851.

#### VILLAGE LECTURES.—No. 4.

*The Soil and the Air Continued.*—Take a jar full of oxygen gas; it is not common air, tho' air contains it, and it is to the oxygen that the air contains, that it owes its ability to burn things, and its ability to maintain respiration—the breath of life in living animals. In the air, this gas is mixed with another, called nitrogen, which dilutes the former, so as to make it fit for the ordinary conditions of human life; were it not thus diluted, it would be much too violent in its action. I have here a jar full of it, and you will see that it makes use of the least spark to produce a flame; so that if the air were pure oxygen, every spark would end in a conflagration.

I shall burn this piece of wood in this oxygen gas. Now, on removing the wood, I find a portion of it has disappeared—it has burned up—it has united with the oxygen gas, and is now in this jar, in the form of a clear gas. The gas is of very different properties now; the oxygen gas being satisfied by union with the charcoal in this

way, has no longer any appetite, so to speak, for union with other things of the same kind; it will not now unite with the substances of tallow, and consequently so far from encouraging that chemical action which is productive of flame, it would extinguish flame immediately on its being brought in contact with it; and therefore, also, so far from encouraging that chemical action which goes on during respiration of animals, and to which the healthfulness of a fine bracing air is owing, it extinguishes that chemical action at once, and would choke any animal that fell into it; but to this point we shall refer again.

Now, if I prove that the air contains this gas, the carbonic acid gas, as it is called, which contains the charcoally part of wood, then I shall have proved that the air contains the very substances which we find in trees and plants, and which they take from it in the act of growth, and this is the way in which I prove that. The carbonic acid gas is recognised not only by its extinguishing flame and destroying life, but by this curious property, that when united with lime it forms a chalky insoluble substance; so that if I pour some clear lime water into this jar of it, and shake it up to induce the lime of the water to unite with the gas, it will become white and milky in appearance, owing to the formation of this chalky, insoluble substance, as you see. Now, if I can pass a quantity of common air through some lime water, and the lime water, originally clear, becomes milky in this way, it will be because it, too, contains carbonic acid, and I shall thus have proved that there is in the air, a gas which contains the very particles of charcoal which our plants and trees require for their growth. Of course the air contains a very small portion of it, not so much as a 1000th of its bulk; because, if it contained much, it would destroy life instead of preserving it; and I must, therefore, employ an apparatus which enables me to draw a large quantity of air through a small quantity of lime water; such an apparatus, in fact, as I have here, where the water below falls out and pulls the air in after it, through the lime water in this crooked tube; and you see that though clear before, it is muddy enough now, owing to the formation of chalk in it, or carbonate of lime; and I have thus proved that the air contains the carbonic acid gas which was necessary to form this chalk, contains charcoal—contains the substance of our plants and trees.

The air, then, contains charcoal, and gives it to plants. The fact is, that carbonic acid gas is a compound of charcoal and oxygen; you saw it formed when I burned the charcoal in the oxygen; and the fact is, that, in the sunshine, plants ab-

sorb the carbonic acid, take its carbon, or charcoal, and give back its oxygen pure to the air. But before you can see the beauty of this process, for it does appear a really beautiful thing when rightly understood, it is necessary for you to know the properties of these two gases. Carbonic acid gas is "choke damp;" it sometimes collects in old wells and pits, and would then kill any one who enters them. It is heavier than common air, and so sometimes collects in deep places. There are places where this gas accumulates on the surface of the earth. There is a valley in the island of Java, in the bottom of which there is a spring of this gas, and accordingly the valley is a lake of carbonic acid gas, and it is, in reality, what is called, the Valley of Death. Travellers who have visited it describe it as an utterly barren basin, with a rim of remarkably luxuriant vegetation, and the skeletons of animals cover the ground beneath; they had wandered in, been choked by the gas and died. There was a skeleton of a man lying a little way down the slope; he had unwittingly entered the fatal lake of air, been intoxicated by breathing it, for it is a narcotic poison, and lying down, had died. No one dared venture to enter the fatal air to help or recover a friend without the certainty of sharing his fate.

Now, wherever oxygen is united with charcoal, it is forming this deadly destructive gas; and every fire that burns, and every dunghheap as it rots, and every breath that is drawn, is simply a uniting of the charcoally substance of wood or coal, or straw or food, with the oxygen of the air, and is constantly giving out carbonic acid gas. And the air, though it contains but little proportionally, contains a great deal of this gas actually. There is but one-thousand part of the air that is carbonic acid gas, but then there are 42,000 tons of air resting on every acre of the earth's surface, so that there are actually 400 lbs. of carbonic acid gas—a quantity containing 100 lbs. of charcoal—in the air over every square perch of ground; and this, of course, increases with every breath that is drawn, and every fire that is burned, so that we might suppose, in the course of years, the atmosphere would become loaded with this gas, and animals would be unable to live in it; and no doubt this would ultimately be the case; for besides the fires which are thus making the air unfit for animal life, animals are rapidly making it unfit for themselves. Each of us gives out carbonic acid gas with the air we breathe—our lungs are in fact, a little fireplace within each of us, where our food is in a great measure burnt up, and our windpipe is the chimney by which the products of that combustion are sent into the air. It is in this way that

the heat of the living body is kept up, whatever be the coldness of the air. Whenever carbon unites with oxygen gas, heat accompanies the chemical action, and whether it be the coal in our fire place, or the straw on our dunghheaps, or the tallow in our candles, or the food in our bodies—the union of the oxygen of the air with the charcoal they respectively contain, affords heat—heat in proportion to the rapidity of the process of union and the quantity of carbon in the fuel; and so, in order to increase this heat and induce the oxygen to combine rapidly with the charcoal, we build chimneys to draw the air through the furnace, or we turn over our dunghheaps to cause the air to mix with them more thoroughly, or we run about and take exercise in order to breathe the faster; and so the furnace gets hotter, and the dunghheap heats more rapidly, and we get warmer; or perhaps the heat is increased by using substances which contain more charcoal to unite with the oxygen gas; and in this way, coke makes a hotter fire than wood, and oil or camphine, a brighter light than tallow; and for this reason, too, the Esquimaux of the arctic regions eats enormous quantities of blubber, while the inhabitants of the hot countries of India and China live sparingly upon rice. The heat in every case is proportioned to the quantity of charcoal which can be got in a given time to unite with the oxygen of the air; and so the cold-country man makes a perfect oil lamp of his lungs within him, and takes boisterous exercise to keep the bellows blowing, in order to preserve his warmth; while the hot-country man of placid temper and sluggish movement eats sparingly, employing less fuel, because he loses less heat.

**SENSIBLE HORSES.**—Lang, in his Travels in Norway, says, that the horses in that country have a very sensible way of taking their food. Instead of swilling themselves with a pailful of water at a draught, no doubt from fear of not getting any again, and then overgorging themselves with dry food for the same reason; they have a bucket of water put down beside their allowance of hay. It is amusing to see with what relish they take a sip of the one and a mouthful of the other alternately, sometimes only moistening their mouths as a rational being would do while eating a dinner of such dry food. A broken-winded horse is scarcely ever seen in Norway.

**INDIVIDUAL ENTERPRISE.**—A trader named Mr. Zacharia, five months ago, took a small store, 6 ft. by 10 ft., situated on the levee, and invested \$50 in clothing. Since that time he has turned over \$215,000, has enlarged his house of business, and is now on his way to the States to bring his family to Stockton.—*Stockton Times.*

## SMITHFIELD CATTLE SHOW.

Doctor Rogers, of Rochester, the author of a Scientific Treatise on Agriculture. It now, it appears, in England, and is contributing a series of letters to our excellent contemporary, "*Moore's Rural New Yorker*."

Referring to the last Smithfield Cattle Show the Doctor observes.

"There were exhibited a large number of agricultural implements, some of which were of very good patterns and fine workmanship, while others were heavy, unwieldy and clumsy. One thing worthy of remark was the fact that many which have been in use for many years in England, are now just being patented in the United States, and supposed to be new inventions. The patent two wheeled plough, I have seen both in England and France, and have been informed it has been in use many years. I noticed among hundreds of articles, only two worthy of special remark, viz., glass milk pans and other dairy furniture, and a new machine for making hollow bricks and tiles and pipes for draining. The bricks made by this machine are perforated longitudinally by a square opening in the centre from one to two inches in diameter, so that they are laid in the wall in such manner as to allow of a free circulation of air; they have also the advantage of being lighter, quicker burnt, and requiring less material than solid bricks."

[The writer must have been particularly unfortunate in his opportunities of tasting butter;—an article which it is notorious the British Islands produce unsurpassed both in quantity and quality, by any other portion of the world.]—Ed.

"The dairy was also largely represented,—the department devoted to cheese, fully sustained the reputation which it has long enjoyed abroad. The Cheshire cheese is, in reality, rich and deliciously flavored, beyond the conception of one who has never tasted it; this is owing partly to the skill employed in its manufacture, and partly to the food of the cows, being composed of such nutritious roots, and the rich tender pasture which a mild moist climate produces. The butter, however, is far inferior to that made by our best dairymen in New York; it is adhesive, tasteless, too fresh, and nearly all more or less rancid: this latter quality is attributed to the season of the year,—but a dairy conducted on scientific principles, ought to produce butter which will keep through a winter, and if necessary, through one or more whole years. But whatever the explanation may be, I have not seen or tasted a particle of good butter as yet, in England or France."

## BEAT THIS WHO CAN—A GIGANTIC HOG.

Mr. John Tindale of the Village of Bolton, in Albion, bred during the past year one of the largest pigs we remember to have seen an account of.—The pig is 2½ years old—was fed on peas and oatmeal—of the common Canadian breed of hogs.—Its weight when in Toronto was 980 lbs., color white, height 3 feet seven inches, length from nose to tail six feet 3 inches, girth six feet 7 inches round the breast, girth round his loins seven feet. Mr. Tindale sold this hog to Mr. Ewart of Montreal pork dealer, for \$15, having exhibited it for several days in Toronto. Mr. Ewart has since been offered he says three times the amount given for it. He has taken it alive to Montreal, whence he is going to ship it alive to London to exhibit at the Great Exhibition of this year.

## HOW TO MAKE HORSES SURE-FOOTED.

A singular account of the manners of the ancients in the matter of breaking in their horses and rendering them sure footed when galloping over the most irregular and dangerous grounds, is related by Vegetius. The Parthian horses were lighter and harder than those of the Cappadocians or Medes, and were the best war horses.—A spot of dry level ground was selected, on which various troughs or boxes, filled with chalk or clay, were placed at irregular distances, and with much irregularity of surface and height.—Here the horses were taken for exercise, and they had many a stumble and many a fall as they galloped over this strangely uneven course; but they gradually learned to lift their feet higher and to bend their knees better, and to step sometimes shorter, and sometimes longer, as the ground required, until they could carry their riders with ease and safety over the most irregular and dangerous places. Then it was that the Parthians could fully practice their favorite manœuvre, and turn upon and destroy their unsuspecting foes. They were as formidable in flight as in attack and would often turn on the back of the animal and pour on their pursuers a cloud of arrows that at once changed the fortune of the day.

(Concluded from our last.)

OBSERVATIONS AND REMARKS on the METEOROLOGY and CLIMATE of UPPER and of LOWER CANADA; by WILLIAM WINDER, Esquire, M.D., Librarian to the Honorable the Legislative Assembly of Canada.

The vegetable kingdom in America has reigned under two great aspects, those of forests and prairies. The forests extend from the River St. Lawrence to the Gulf of Mexico, over plains, declivities, and mountains. A European can form no idea of the magnitude and beauty of the American primeval forests and trees; and while in France there are said to be only thirty-seven kinds of trees that grow to the height of thirty

feet, there are, in America, one hundred and thirty kinds which excelled this measurement; which, with the variety of their growth and foliage, are the admiration of every beholder.

On a review of the vegetable products of the Canadas, we find that in both Provinces they are much the same, a consequence that might be expected to follow from the similarity of climate.

Of those of Upper Canada it may be remarked, that all the fruits generally found in England thrive remarkably well; but the plum, apple, strawberry, raspberry, and melon, attain a luxuriance of growth and perfection, as stated by a modern writer, unknown in England. The melon, planted in the open ground, in most years produces excellent crops. In many places vines prosper well. Peaches are indigenous south of the parallel of 43°, or at least grow rapidly from the stone, and bear fruit within a few years; although good and rich flavoured grapes and peaches are seldom met with, owing to their culture being neglected. The same observations apply to all garden produce, which will attain a degree of luxuriance unknown in England, with much less care and culture. In Lower Canada, the new land is covered with timber; the greater part of the trees being from two to three feet in diameter—the larger the timber, the better the soil—and therefore the choice of land is generally directed by the growth of timber on it. Where beech, maple, hickory, butternut, and chestnut grow, we find a good soil of yellow or hazel loam; where elm, white-ash, white-oak, butternut, and red-oak grow, the soil is strong; where white-pine, hemlock-pine, birch and spruce grow, the soil is sandy; cedar swamps, though often composed of good soil, are not desirable, unless easy to drain; black-ash, soft-maple, or plane swamps, are mostly on a clay or marl, and it well-drained make lasting meadows; where there are small poplar and small white-birch, the soil is poor, being light loam on white clay.

The foregoing may be taken as a descriptive list of forest trees in the Lower Province, and the soils on which they grow. The soils most congenial for orchards are light loams or gravel. Apple-trees thrive much, also, on rocky or limestone land. A great variety of apple, pear, peach, plum, cherry, grape-vines, and other fruit trees may be found in the neighbourhood of Montreal; the apples from thence are considered superior to any other. Cherries, chestnuts, walnuts, hickory, hazel, and filbert nuts, grow wild, as in Upper Canada,—as do gooseberries, strawberries, raspberries, blueberries, cranberries, and black currants.

These details will, it is hoped, be of some service to those whose attention may be directed to the study of the climate of the Canadas, and their agricultural capabilities.

The present rage for emigration to North America and Canada, has certainly been the means of eliciting much valuable information relative to those countries; but it has also produced much merely literary speculation, numerous ridiculous blunders, and not a few wilful misrepresentations. The dictum of Voltaire, that Canada was merely a barren rock, covered with perpetual frost and snow, has, with strangers, passed into a proverb; but the emigrant farmer may be told with truth, that although the season appears short, and the cold intense at certain periods, the winters are more pleasant and salubrious, and the summers warmer than those of England; the seasons more uniform, and the air more clear and dry.

Medium temperature of the air in Upper and Lower Canada, from the 1st of January to the 31st December, 1848, inclusive:—

MONTREAL	Mean of the Month.	TORONTO.	Mean of the Month.
January, . . . . .	18.9°	January, . . . . .	27.41°
February, . . . . .	19.	February, . . . . .	26.28
March, . . . . .	27.6	March, . . . . .	27.4
April, . . . . .	42.8	April, . . . . .	40.67
May, . . . . .	61.	May, . . . . .	53.74
June, . . . . .	70.	June, . . . . .	62.54
July, . . . . .	73.5	July, . . . . .	65.97
August, . . . . .	72.8	August, . . . . .	68.34
September, . . . . .	57.1	September, . . . . .	53.39
October, . . . . .	45.	October, . . . . .	46.38
November, . . . . .	31.4	November, . . . . .	33.61
December, . . . . .	23.45	December, . . . . .	29.12
Total Means,	538.89°	Total Means,	533.89°

MONTREAL	Mean of the Month.	TORONTO.	Mean of the Month.
January, . . . . .	11.7°	January, . . . . .	18.49°
February, . . . . .	Not known	February, . . . . .	Not known.
March, . . . . .	31.66°	March, . . . . .	33.24°
April, . . . . .	39.6	April, . . . . .	38.74
May, . . . . .	54.2	May, . . . . .	48.30
June, . . . . .	71.5	June, . . . . .	63.
July, . . . . .	75.7	July, . . . . .	67.82
August, . . . . .	74	August, . . . . .	65.
September, . . . . .	59.1	September, . . . . .	57.
October, . . . . .	45.3	October, . . . . .	44.94
November, . . . . .	41.	November, . . . . .	41.87
December, . . . . .	17.9	December, . . . . .	26.56
Total Means,	519.6°	Total Means,	514.96°

1847.	Mean of the Month.	1847.	Mean of the Month.
MONTREAL		TORONTO.	
January, . . . .	Not known	January, . . . .	Not known.
February, . . . .	13.25 °	February, . . . .	22.48 °
March, . . . . .	23.55	March, . . . . .	26.25
April, . . . . .	39.36	April, . . . . .	39.
May, . . . . .	61.45	May, . . . . .	53.49
June, . . . . .	70.	June, . . . . .	58.14
July, . . . . .	77.76	July, . . . . .	67.62
August, . . . . .	72.	August, . . . . .	63.93
September, . . .	59.5	September, . . .	54.91
October, . . . .	45.	October, . . . .	43.71
November, . . .	35.6	November, . . .	38.
December, . . .	20.9	December, . . .	30.
Total Means	516.57 °	Total Means.	497.53 °

YEAR.	Mean of Year.	YEAR.	Mean of Year.
Montreal, 1847,	46.77 °	Toronto, 1847	45.21 °
do. 1848,	44.9	do. 1848	44.49
do. 1849,	47.18.	do. 1849	46.81
Total, . . . . 3	138.4 °	Total, . . . . 3	136.50 °
Mean of 3 yrs.	46.4 °	Mean of 3 yrs.	45.50 °

YEAR.	Mean of Year.	YEAR.	Mean of Year.
Mean of Montreal, . . . . .	46.4 °	Mean of Montreal, . . . . .	46.4 °
Mean of Toronto, . . . . .	45.50	Mean of Toronto, . . . . .	45.50
	91.54 °		
Mean average Temperature of Upper and Lower Canada, . . . . .	45.77 °	Difference of Temperature between Upper & Lower Canada, for three years, . . . . .	1.46 °

The following results, taken from the Government Meteorological Observations, made at Toronto for the past ten years, will serve to correct any erroneous impressions respecting the climate of Upper Canada:—

Mean temperature, taken from ten years observations, 44.3 °.

Highest temperature, 95.0 °—12th July, 1845.

Lowest do. 18.6 °—16th January, 1840.

Total number of days on which rain fell, 965.

Yearly average, 97.

Total number of days on which snow fell, 475.

Yearly average, 47.

Total number of days perfectly fair, 2,213.

Yearly average, 221.

Average yearly depth of rain, 33.4 inches.  
Average yearly depth of snow, 56.6 do.  
Mean temperature of four summer months, 62.6 °, four warmest months.  
Mean temperature of four winter months, 26.6 °, four coldest months.

It is to be remarked, that if a particle of snow or rain falls during the 24 hours, the day is respectively considered at the Observatory as a rainy or snowy day.

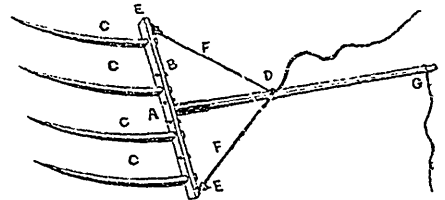
WILLIAM WINDER.

Toronto, 2nd August, 1850.

### PITCHING HAY BY HORSE POWER.

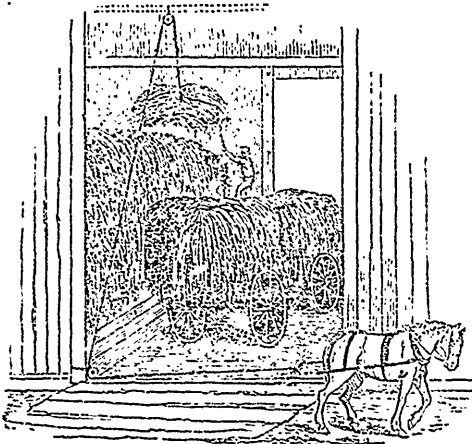
We find described in an American Agricultural Journal a new mode of unloading hay which in our opinion might be adopted on large Hay farms with great advantage.

It was first practiced in Pennsylvania, we believe, and is said to be of great advantage where large quantities of hay are stored in barns and sheds—especially as the work of hauling and storing is often done in a hurry to avoid rains, and this contrivance, by a saving of time in unloading, is sometimes the means of preserving several tons of good hay from damage. The cost of the fork and blocks and ropes is only about \$7. The following description is from the Pennsylvania Cultivator:—



The head of the fork, A, is about 28 inches in length, and two and a half inches square, and is made of white oak. The handle should be about five and a half feet long, and morticed into the head, and secured firmly by a strap of iron clasped around the head, and extending some distance up the handle. The prongs CCC, must be made of good steel, about 20 inches long, and five-eighths of an inch thick at the head, and tapering down to a point. They are to be set in the head at equal distances apart, with a burr to screw them up tight, and a rivet on each side of the middle prongs, to keep the head from splitting. Staples are to be riveted into the head at each end, EE, to which ropes, FF, are attached and brought together, about 3 feet from the head at D, and a single rope connected with them at the junction, is passed over a pulley fixed to a rafter near the peak of the roof. This pulley is placed about two

or three feet over the mow. The rope is passed down under another pulley, fixed to the lower part of the door post, in order to change the direction of the rope, and admit of a horizontal or level draft for a horse. Everything being prepared, and the gearing complete, the wagon load of hay is driven into the barn floor, and the process of unloading commences, as exhibited in the following cut:—



The fork is inserted into the load of hay, and the horse, attended by a boy, is put in motion, and the hay drawn to any required height. The fork is kept level by means of the rope G, attached to the end of the handle, until the time of discharging the fork-full. The rope in the hand of the man on the load is then slackened, and the hay deposited; or a person in the mow can, if he chooses, give direction to the fork-full, while it is still suspended, so that one man can ordinarily dispose of it in the mow. The horse is then backed up, and the fork drawn down by the small rope attached to the handle, and retained in the hand of the person on the load. In this way six tons per hour can be pitched 20 feet high; and in a great hurry, and changing hands, even double that much may be pitched in an hour.

**EXTRAORDINARY YIELD OF WHEAT.**—Wm. Wallace, Esq., Township of Cavan, has informed us, that he imported from Rochester last year, 11 bushels and 40 lbs of the Soli's wheat, which he sowed on 7 acres, and which yielded the large quantity of 327 bushels of superior wheat and averaging over 46 bushels and 42 lbs to each acre. This is truly gratifying and must prove greatly encouraging to our agricultural friends to imitate the laudable example of Mr. Wallace, and strive with all their might to get similar results from their well cultivated fields. If Mr. Wallace has not already disposed of his wheat, we would recommend every practical farmer within 25 or even 50 miles of his residence, to try and get a few bushels of his celebrated Wheat for seed, and give it a fair trial, and we have no doubt they will be fully and amply rewarded by a rich and abundant harvest.—*Port Hope Watchman.*

**THE HUSKERS.**

BY JOHN G. WHITTEK.

It was late in mild October, and the long autumnal rain  
Had left the Summer Harvest-fields all green with grass  
again;

The first sharp frost had fallen, leaving all the woodland  
gay

With the hues of Summer's rainbow, or the meadow  
flowers of May.

Through a thin dry mist that morning, the sun rose dry  
and red,

At first a rayless disc of fire, he brightened as he sped;  
Yet, even his noon-tide glory fell chastened and subdued.  
On the corn-fields and the orchards, and the softly pic-  
tured wood.

And all that quiet afternoon, slow sloping to the night,  
He wove with golden shuttle the haze with yellow light;  
Slanting through the painted beeches he glorified the  
hill,  
And beneath it, pond and meadow lay brighter, greener  
still.

And shouting boys, in woodland haunts, caught glimpses  
of that sky,  
Flocked by the many tinted leaves, and laughed they  
knew not why;  
And school-girls gay with sister-flowers, beside the mea-  
dow brooks,  
Mingled the glow of autumn with the sun-shine of sweet  
looks.

From spire and barn, looked westerly the patient weather  
cocks;  
But even the birch-trees on the hill stood motionless as rocks;  
No sound was in the woodlands, save the squirrel's droop-  
ing shell,  
And the yellow leaves among the boughs, low rustling as  
they fell.

The Summer grains were harvested; the stubble-fields  
lay dry,  
Where June winds rolled, in light and shade, the pale  
green waves of rye,  
But still, on gentle hill-slopes, in valleys fringed with  
wood,  
Ungathered, bleaching in the sun, the heavy corn crop  
stood.

Bent low by autumn's wind and rain, through husks that  
dry and sere,  
Unfolded from their ripened charge, shone out the yellow  
ear,  
Beneath the turnip lay concealed, in many a verdant fold,  
And glistened in the slanting light the pumpkin's sphere  
of gold.

There wrought the busy harvester: and many a creaking  
wan

Bore slowly to the long barn door its load of husks and grain ;  
Till, broad and red, as when he rose, the sun sunk down at last,  
And like a merry guest's farewell, the day in brightness past.

And lo! as through the western pines, on meadow, stream  
Flamed the red radiance of a sky set all a-fire beyond,  
Slowly o'er the eastern sea-bluffs a milder glory shone,  
And the sunset and the moonrise were mingled into one.

As thus into the quiet night the twilight passed away,  
And deeper in the brightening moon the tranquil shadows lay ;  
From many a brown old farm house, and hamlet without name,  
Their milking and their home tasks done, the merry huskers came.

Swung o'er the heaped up harvest, from pitchfork in the mow,  
Shone dimly down the lantern on the pleasant scenes below ;  
The glowing pile of husks behind, the golden ears before,  
And laughing eyes, and busy hands, and brown cheeks glimmering o'er.

Half hidden in a quiet nook, serene of look and heart,  
Talking their old times o'er, the old men sat apart ;  
While up and down its unhusked pile, or nestling in its shade,  
At hide-and-seek, with laugh and shout the happy children played.

U'rged by the good host's daughter, a maiden young and fair,  
Lifting to light her soft blue eyes and pride of soft brown hair,  
The master of the village school, sleek of hair, and smooth of tongue,  
To the quaint tune of some old psalm, a husking ballad sung.

—♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦—  
I'M OF THE BAND THAT TILL THE LAND.

—  
BY JAMES STARREY.  
—

I'm of the band that till the land,  
And draw from the earth her store ;  
Right happy indeed's, the life we lead,  
While our days are passing o'er,  
Many there are, in riches far  
Surpassing the farmer's purse,  
While other pursuits may yield more fruits,  
Yet often bring forth much worse.

We envy not the statesman's lot,  
Still clamouring for his class ;  
Nor his that fights for glory's rights,  
At some redoubted pass.

No risks have we on boisterous sea,  
Nor fears lest tempests whelm  
All we possess, without redress  
While laboring at the helm.

The fruitful field its beauties yield,  
A rich reward for toil ;  
Be ours the trade to ply the spade,  
And deeply plough the soil.  
We walk abroad on carpet sod,  
And flowerets kiss our feet,  
Whose odours rise to scent the skies—  
A tribute poor and meet.

To all we give the means to live,  
As brother shares with brother,  
And thus fulfil the holy will  
That bids us "love each other."  
Oh! life secure from guile, and pure!  
To thee my soul clings ever  
With all its might, in fond delight,  
To change from thee, no never.



BEET ROOT SUGAR.

The following is from the *Cork Examiner*:—  
"Some portion of the attention which is now generally turned towards the promotion of manufactures would be usefully directed to the production of sugar from beet root. Already it is carried on to a great extent in France and Belgium where vast numbers of people are employed in it, and large establishments erected for the purpose. We have seen a specimen of sugar made from beet root in the latter country, which was exhibited at a late meeting of the Dublin Society, and which naturally excited much curiosity. It is of the purest appearance, of strong sweetening quality, and in colour resembling the species of sugar known as crushed lump. The most singular part of the matter is, that it was manufactured in the space of forty-five minutes, the entire time occupied from taking of the root out of the ground and putting it into the machine to the production of the perfect article. Some reluctance was evinced to tell the price at which it could be made; and, in reply to a question on that point, it was said that it could be produced at the market rate for sugar of a similar quality in this country, about 6d. per pound. We have ascertained, however, that the article could really be made for two-pence half-penny per lb. An acre of ground is calculated to yield fifty tons of Sillesian beet, which, in France and Belgium, give three tons of sugar, worth about £50; the refuse being useful for feeding cattle and in those countries being actually used for that purpose. But from the superior fitness of the Irish soil, as shown by experience to be the case, it is confidently affirmed by persons competent to form an opinion, that eight per cent. of sugar could be obtained here on the raw bulk."

## Horticulture.

### ACTION OF CARBONIC ACID ON PLANTS.

Professor Daubeny of the University of Oxford, reported to a late meeting of the British Association, the following facts as the result of careful experiments:—Plants consisting of ferns and pelagonians, subjected to an atmosphere containing 5 per cent of carbonic acid, did not appear to be injuriously affected; second, a quantity amounting to 20 per cent, injured plants exposed to it; third, the quantity of oxygen given out by plants was not found to be increased by the quantity of carbonic acid to which they were exposed; fourth, on exposing animals to the action of carbonic acid, it was found that frogs and many fish could live in an atmosphere charged with 5 per cent of this gas. From these experiments, he concluded that no objection could be offered to the theory of a large proportion of carbonic acid having existed in the atmosphere, in the early periods of the world's history; such for instance when the immense coal strata were in the course of formation.

### THE ROSE.

Professor Agassiz, in a lecture on the trees of America, stated a remarkable fact in regard to the family of the rose, which includes among its varieties, not only many of the beautiful flowers which are known, but also the richest fruits, such as the apple, pear, peach, plum, apricot, cherry, strawberry, raspberry, blackberry, &c.: namely, *that no fossils of plants belonging to this family have ever been discovered by geologists!* This he regarded as conclusive evidence, that the introduction of this family of plants upon the earth was coeval with, or subsequent to the creation of man, to whose comfort and happiness they seem especially designed by a wise Providence to contribute.—*Scientific Annual.*

### FIRE BLIGHT.

This mysterious disease, to which the finer sorts of fruits,—particularly pears, are so liable in this

climate, may be owing in a great degree to sudden changes in atmospheric temperature. The *Horticulturist* recommends the shielding of the most vulnerable points from excessive heat or cold; to mulch the ground and sheath the stems with straw, whenever they are not sheltered by the leaves. This is said to work well in preserving the trees in sound health.

### QUINCES ON THORNS.

A correspondent of the *Horticulturist* for February, observes that he had seen the most beautiful quinces grown upon the common white-thorn. The stocks were from 1 to 1½ inches in diameter, and grafted about 2 feet from the ground. It is said that in this way the trees are less subject to the borer and other insects; the stocks are hardy, being natives of the poorest soils and most exposed situations; and they are converted by grafting into objects of beauty and utility.

### PLANTING ROSES.

The beauty and interest which a garden affords depend greatly upon the disposition of its individual parts; even the arranging and planting of a single bed require experienced taste in order to produce effective display. Take, for example, a rose bed; imagine the kinds to be indiscriminately mixed, and no attention to have been paid to their respective heights, and the effect produced by such a medley assemblage will be immediately felt by any person possessing taste and unaccustomed to observation. Let us further suppose such a bed to be circular, and the effects will be as bad as they well could be, unless the object aimed at was to represent wild nature. The taller plants should have been planted in the centre and the others arranged so as gradually to fall to the outer rim. This arrangement would advance us a step; but let us proceed further and dispose of the trees in zones or circles. In this way we give the bed the expression of design. For be it clearly understood that we are discussing gardening in an artificial sense. Now let us go a little further still, and consider whether there be not yet room for improvement; suppose we plant one colour in the centre circle, and so change each circle until we reach the outer one. By such a classification we add colour as well as design; but imagine the colours to be so arranged that another important feature is produced, viz., contrast, and the picture becomes still further improved, though not yet finished. Would not an edging render the whole more complete? Tho



beauty and brilliancy of the rose would be singularly improved and relieved by an evergreen margin. This would in some measure help as it were to lift the group from the earth and place it nearer the eye. This edging may be of Ivy or Cotoneaster microphylla or Pernettya mucronata, or in fact any low dwarf evergreen shrub kept shorn into a formal rim. In the above is shown how much beauty may be exhibited even in a circular bed, by the exercise of a little taste and forethought; but these simple principles are by no means confined to a rosebed; they can be carried into effect in the arrangement of a garden, so that unity and comprehensiveness of design may characterize the whole. When a contrary state of things prevails, delight vanishes, confusion takes the place of order, disgust that of pleasure, and instead of the most charming of all pursuits, contributing to relieve the man of business from the oppression and satieties of mind usually resulting from close application, he abandons the whole in utter dismay and hopelessness.—*Gardener's Chronicle*.

**GOOSEBERRY CATERPILLAR.**—As the eggs of the gooseberry moth are laid on lines on the back of the leaves, they are easily destroyed on the bush while in that state, without injuring either the bush or the fruit: and, as there may be a succession of young larvæ for a considerable length of time, we would need to repeat the cure every other week, which would perhaps be troublesome as well as expensive. From experience I have found hand-picking the surest plan in the end, if judiciously done. My plan is this:—I go round and examine the centre or heart of the bush; by this view of the bush you can easily perceive the leaves that are attacked by caterpillars, as they will be seen perforated with small holes, as if pierced with a pin. Yet after these are all off the bush, you have not finished your labour, as there may be a great number of leaves with the caterpillar in the ovum or egg state in hundreds on the back of these leaves, ready to sally forth in a few days and devour the foliage; therefore you must go round and lift up the branches, one by one, and look upward, on the back of the largest and most detached foliage; you may there see the eggs laid in great numbers on the back of the leaves. If one single leaf in this state is pulled off, what a saving of labour and vexation is gained! Besides, if the caterpillars had been left undisturbed, perhaps for a day or two, you would have had to seek them throughout the whole or a considerable portion of the bush. As necessity is frequently the mother of invention, I lately fell on a plan which facilitates the work a great deal; the plan is as simple as it is successful, and although it may be thought rather a novel method, yet if one becomes accustomed to it, it will be found of great service in getting a proper view of many parts of the bush that could not be got at otherwise:—Take a common hand mirror or looking-glass, and with one hand hold it under the leaves of the bush, near the ground, and

move it in different directions under the branches, and by looking into the glass you will see the eggs on the back of the leaves, while by your eye you can direct your other hand to the proper leaf; and by picking off the caterpillars on the leaves in this state, what a world of future labour is saved, as I have frequently counted from 80 to 150 on the back of a single leaf.

### A BEAUTIFUL FLOWER.

A friend presented us a day or two since, with a curiosity in the shape of a flower, which we think, is one of the greatest wonders of the floral kingdom we have ever seen. It is about the size of a walnut, perfectly white, with fine leaves resembling very much indeed the wax plant.— Upon the blooming of the flower, in the cup formed by the leaves, is the exact image of a dove lying on its back, with its wings extended. The Peak of the bill and the eyes are plainly to be seen, and a small leaf before the flower at maturity forms the outspread tail. This leaf can be raised or shut down with the fingers, without breaking or apparently injuring it, until the flower reaches its full bloom, when it drops off. We regret our inability to give a technical description of this curiosity at this time, but we hope to do shortly, as one has been promised us by a person every way qualified to write.—*Panama Star*.

### THE COW TREE.

When travelling in South America, Humboldt and his companions had an opportunity of satisfying themselves, by ocular examination, respecting the truth of the accounts they had received of the *palo de vacca*, or cow tree, the milk of which the negroes were said to consider wholesome aliment. They found by experience that the virtues of this extraordinary tree had not been exaggerated, the *palo de vacca* is a handsome tree, resembling the broad-leaved star-apple; incisions are made in its trunk; it yields an abundance of glutinous milk, of an agreeable and balmy smell. This sweet and nourishing fluid flows most abundantly at the rising of the sun. The blacks and natives are then seen hastening from all quarters, with large bowls to receive the milk.

**FRUIT-RAISING IN NEW JERSEY.**—Mr. George W. Orbet, of Pennington, Mercer county, N. J., writes us that he has a peach orchard of 3,300 trees, nine years old, which has borne six full crops in succession. It occupies twenty acres of ground. He states that in 1849, his crop cleared \$6,000. The peach in general was that year destroyed by frost. The orchard is on a high northern exposure, which keeps the trees from blossoming till the spring is well advanced. Mr. O. states that he put out 500 apple trees last spring of the choicest kinds, and that he did not lose one of the trees. Several of them produced apples the same season.

**ANALYSIS OF THE APPLE.**—A paper on the analysis of the fruit of the apple, by Dr. Salisbury, furnishes some facts worthy of notice. Owing to the lateness of the season (in spring,) before the analysis was commenced, the following sorts only were examined, viz: Swaar, Kilham Hill, Rhode Island Greening, English Russets, and Talman Sweeting. From the numerous facts of results, the following facts are drawn:—

The English russet contains less water and more dry matter than any other sorts—This is doubtless the reason why this variety is so hard to freeze. The Talman Sweeting contains more, the greening still more, and Kilham Hill most of all; ranging in all these from 79 to 86 per cent. A fresh potato contains about as much water as the Russet. These results show the reason that apples when manufactured into cider produce nearly their own bulk of juice, a fact which has often puzzled many who merely regarded the solid nature of the fruit.

A striking difference in the composition of the apple and potato, is the entire absence of starch in the former, while in the latter it constitutes about one half of the solid part. The apple, according to this analysis, is rather superior to the potato in the fat producing qualities, and which accords with the experience of some accurate farmers. The apple contains about twice as much of the compounds of nitrogen as the potato.

The Russets were found to contain a larger portion of tannic and gallic acids than other sorts. These acids impart a stringency, and are indicated by the black colour given to a knife of iron or steel used in cutting this fruit. The apple is rich in phosphoric and sulphuric acids and potash and soda. Hence we may infer that bone dust, ashes salt and plaster, would be likely to prove useful as portions of the manure applied to a bearing tree, in addition to what is already contained in yard manure.—*Transactions N. Y. Ag. Society.*

**RECOVERING DRIED GRAFTS.**—It often happens that grafts of particular fruits are received in a dried or withered condition from being badly packed; and being supposed to be worthless are thrown away. The writer once received in autumn a small package of a new and rare sort of apple, from a distance of some hundreds of miles, without any protection at all, and they were quite thoroughly *seasoned*. They were encased in moss, and buried a few inches beneath the surface of the earth on a dry spot of ground. By spring they had gradually imbibed moisture, and had become plump again, and on being set, every graft grew. Efforts of this kind often fail in consequence of applying the moisture too copiously and suddenly. Shoots in so withered a condition should receive it so gradually as to require some weeks at least for the completion of the process.—*Albany Cultivator.*

**TO PREVENT THE ATTACK OF THE "ONION GRUB."**—The growth of the onion is frequently prevented and the plant sometimes destroyed by a worm which attacks it as soon as it appears above ground. A correspondent of the *Gardener's Chronicle* states that he has applied nitrate of soda with good effects in preventing the ravages of this insect. He used half a pound of the salt to a gallon of water, and applied eight gallons to a bed of ten yards in length. He states that it checked the progress of the worms, and the crop turned out well.

## Scientific.

### HOW COAL WAS MADE.

Geology has proved that, at one period, there existed an enormously abundant land vegetation, the ruins and rubbish of which carried into seas, and there sunk at the bottom, and afterwards covered over by sand and mud beds, became the substance which we now recognize as coal. This was a natural transaction of vast consequence to us, seeing how much utility we find in coal, both for warming our dwellings and for various manufactures, as well as the production of steam, by which so great a mechanical power is generated. It may naturally excite surprise that the vegetable remains should have completely changed their apparent character, and become black.—But this is explained by chemistry; and part of the marvel becomes clear to the simplest understanding when we recall the familiar fact, that damp hay thrown closely into a heap, gives out heat and becomes a dark color. When a vegetable mass is excluded from the air, and subjected to great pressure and bituminous fermentation is produced, and the result is the mineral coal, which is of various character accordingly as the mass has been originally intermingled with sand, clay or any other earthly impurities.

On account of the change effected by mineralization, it is difficult to detect in the coal the traces of a vegetable structure; but these can be made clear except the highly bituminous caking coal, by cutting or polishing it down into thin transparent slices, when the microscope shows the fibres and cells very plainly. From distinctly isolated specimens found in the sandstones amidst the coal beds, we discover the nature of the plants of this era. They are most all of a simple cellular structure, and such as exist with us in small forms, (horse tails, club mosses and ferns.) but advanced to an enormous magnitude. The species are all long since extinct. The vegetation is generally such as now grows in clusters of tropical islands, but it must have been the result of high temperature, obtained otherwise than that of the tropical regions now is, for the coal strata are found in the temperate and even the polar regions.

The conclusion, therefore, to which most geologists have arrived is, that the earth, originally an incandescent or highly heated mass, was gradually cooled down, until the carboniferous period it fostered a growth of terrestrial vegetation all over its surface, to which the existing jungles of the tropics are barrenness in comparison. The high and uniform temperature, combined with a greater proportion of carbonic acid gas in the manufacture, could not only sustain a gigantic and prolific vegetation, but also create dense vapors, showers and rains; and these again gigantic rivers, periodical inundations and deltas. Thus all the conditions for extensive deposits of wood, in estuaries, would arise from the high temperature; and

circumstances connected with coal measures points to such conditions.—*Chamber's Miscellany.*

#### AN IRREVERENT SPARROW.

Amongst other experiments going on some time ago in the Observatory enclosure, were some by which Mr. Glaisher sought to discover how much warmth the earth lost during the hours of night, and how much moisture the air would take up in the day from a given surface. Upon the long grass within the dwarf fence were placed all sorts of odd substances in little distinct quantities. Ashes, wood, lather, linen, cotton, glass, rad, copper, and stone, amongst other things, were there to show how each affected the question of radiation. Close by, upon a post, was a dish, six inches across, in which every day there was punctually poured one ounce of water, and at the same hour next day as punctually was this fluid re-measured to see what had been lost by evaporation. For three years this latter experiment had been going on, and the results were posted up in a book; but the figures gave most contradictory results. There was either something very irregular in the air, or something very wrong in the apparatus. It was watched for leakage, but none was found, when one day Mr. Glaisher stepped out of the magnet-house, and, looking toward the stand, the mystery was revealed. The evaporating dish of the philosopher was being used as a bath by an irreverent bird!—a sparrow was scattering from his wings the water left to be drunk by the winds of heaven. Only one thing remained to be done; and the next minute saw a pen run across the tables that it had taken three years to compile. The labor was lost—the work had to be begun again.

**GAUDALUPE MINE.**—The California *Courier* gives the following description of a quick-silver mine. If reliable—of which it would seem there can be but little doubt—the owners have certainly “struck a vein.”—A gentleman who has recently made an examination of this mine, has placed upon our desk a specimen of the ore now obtained there, which is fully equal to the richest and best cinnabar we have ever seen. From him we learn that the vein is daily increasing, and is found to extend in all directions, presenting on every side a nearly solid mass of ore, yielding from 60 to 85 per cent of pure mercury. The mine is reached by a beautiful road, good at all seasons of the year. It is in the same hill as the New Almaden mine, four miles distant from it, and only about eight miles from the city of San Jose. The company are now erecting extensive smelting apparatus, and in a short time will be able to run out some thousands of pounds of quicksilver per day. The value of the quicksilver obtained from this and the New Almaden mines this year, will amount to several millions of dollars. Our readers may not be aware that it requires two pounds of quicksilver to produce one pound of silver; and that hundreds of silver mines, in Mexico and South America, cannot now be worked in consequence of the impossibility of obtaining this supply. The demand for quicksilver in this country,

will, as the rich placers fail, and the quartz becomes more worked, and silver mines are opened, be very great; and, except for these cinnabar mines in our midst, impossible to be supplied. But those mines will not only fully supply us, but have a surplus to be sent abroad. Thus California not only yields to the world the richest treasures of gold, but in her quicksilver she holds in her hands the key to unlock the silver deposits of our own and other States, and the means to extract the finest particles of gold from our auriferous soil and gold-bearing rocks.”

It is a vulgar notion that politeness is only required towards superiors. But the truth is, that every man ought to regard his fellow man, or friend, as his superior, and treat him accordingly. Such feeling the real gentleman always has.—“Let each esteem others better than himself,” says an Apostle. This is the very soul of good manners.

It is reported in the scientific world, that a very beautiful, and, if we consider it, a very wonderful, experiment has been tried, or discovery made in Europe, and verified, by the savans of Berlin and Paris. It is this:—The needle of a galvanometer, or machinery to measure galvanism, has been moved, many degrees, by the mere action of the human will! For example, the operator, standing near the instrument, wills the needle to move one way or the other, and it obeys, moving a greater or a less number of degrees, according to the strength of his will.

**HOW RUMINANTS CHEW THEIR FOOD.**—When these animals (ruminants) feed they swallow their aliments at first without having chewed them. These substances then enter into the paunch, and there accumulate; thence they pass into the second stomach, (reticulum); but after having remained there for a certain time, they are carried back into the mouth to be chewed, and afterwards swallowed again; and when they descend again into the stomach, they no more enter the paunch or reticulum, but go directly to the *manyplies*, (third stomach) from which they pass into the fourth stomach or *rennet bag*, where they are digested.

At first one is astonished to see food pass at one time into the paunch and reticulum, at another into the *manyplies*, (third stomach,) according as it had been swallowed for the first time, or after it has been regurgitated; and one is tempted to attribute this phenomenon to a sort of tact with which the openings of these different digestive pouches seem to be endowed. But there is nothing of the kind; this result being the necessary consequence of the anatomical arrangement of the parts. The œsophagus terminates below in a species of gutter, or longitudinal slit, which occupies the upper part of the reticulum (second stomach) and the paunch, and is continued to the *manyplies*. Ordinarily, the edges of the slit of which we have just spoken lie close together, and then this gutter constitutes a perfect tube, which leads from the œsophagus into the *manyplies* (third stomach;) but if the alimentary ball swallowed by the animal is solid, and somewhat large, it distends this tube, and separates the edges of the opening through which the œsophagus communicates with the two first stomachs; the food falls into these pouches; but if the alimentary ball be soft and pulpy, as is the case when mastication has been completed, the matter swallowed enters into this same tube without separating the edges of the slit, and reaches the third stomach.

It is by this mechanism that unchewed food, which the animal swallows for the first time, stops in the paunch and reticulum; while after it has been chewed

a second time, and well mixed with saliva, it penetrates into the *manipulis*.

"The mechanism by which aliment accumulated in the first stomach is carried back to the mouth, is also very simple. When regurgitation begins the reticulum contracts and presses the alimentary mass against the slit-like opening which terminates the œsophagus; then this opening enlarges so as to seize a pinch or portion of the alimentary mass, compresses it, and forms it into a small pellet, which engages in the œsophagus, the fibres of which contract successively from below upwards, to push forward the new alimentary ball into the mouth."—*Ruhenberger's Elements of Mammalogy*.

## General Science and Miscellany.

### British Libraries.

1. *British Museum Library, London*.—There is probably no other public institution in Great Britain which is regarded with so great and general interest as the British Museum. By the variety of its departments, this splendid national depository and antiquities, meets in some way the particular taste of almost every class of society. The department of Natural History, in its three divisions of Zoology, Botany, and Mineralogy, contains a collection of specimens unsurpassed, probably unequalled, in the world. The department of antiquities is in some particulars unrivalled for the number and value of the articles it contains. But the library is the crowning glory of the whole. If, in respect to the number of volumes it contains, it does not yet equal the National Library of Paris, the Royal Library of Munich, or the Imperial Library of St. Petersburg—in almost every other respect, such as the value and usefulness of the books, the arrangements for their convenient and safe keeping, and, in fact, in every matter pertaining to its internal arrangements, the library of the British Museum, by the concurrent testimony of competent witnesses from various countries, must take rank above all similar institutions in the world. Well may the people of this country regard the Museum with pride and pleasure. The liberal grants of parliament, and the munificent bequests of individuals, are sure indications of a strong desire and purpose to continue and extend its advantages.

Some idea of the magnitude of the Museum, and of its vast resources, may be formed by considering that the buildings alone in which this great collection is deposited, have cost since the year 1823, nearly £700,000; and the whole expenditure for purchases, exclusive of the cost of buildings just named, is considerably more than £1,100,000. Besides this liberal outlay by the British Government, there have been numerous magnificent bequests from individuals. The acquisitions from private munificence were estimated, for the twelve years preceding 1835, at not less than £400,000. The latest considerable bequest was that of the Right Hon. Thomas Grenville: his library, which he gave to the Museum entire, was valued at £20,000.—The annual receipts of the institution of late years, from parliamentary grants and the interest of private legacies, have been about £50,000. The number of visitors to the Museum is immense. In the year 1848 they amounted to 897,985, being an average of about 3000 visitors per day for every day the Museum is open. On special occasions there have been as many as thirty thousand visitors on a single day.

This noble institution may be said to have originated in the bequest of Sir Hans Sloane, who, dying in

1752, left his immense collections of every kind to the nation, on the condition of paying £20,000 in legacies to different individuals; a sum considerably less than the intrinsic value of the medals, coins, gems, and precious metals of his museum. This bequest included a library of 50,000 volumes, among which were 3566 volumes of manuscripts in different languages; a herbarium of 334 volumes, other objects of natural history, to the number of six-and-thirty or forty thousand, and the house at Chiswick, in which the whole was deposited. The Harleian collection of manuscripts, amounting to 76000 volumes, chiefly relating to the history of England, and including, among many other curious documents, 40,000 ancient charters and rolls, being about the same time offered for sale, parliament voted a sum of £30,000 to be raised by lottery, and vested in trustees, for the establishment of a National Museum. Of this money, £20,000 were paid to the legatees of Sir Hans Sloane, £19,000 were given for Harleian Manuscripts, and £10,000 for Montague House as a receptacle for the whole. Sloane's Museum was removed thither with the consent of his trustees. In 1797, George III., by an instrument under the great seal, added the library of the kings of England, the printed books of which had been collected from the time of Henry VII. the manuscripts from a much earlier date. This collection was very rich in the prevailing literature of different periods, and it included, amongst others, the libraries of Archbishop Cranmer, and of the celebrated scholar Isaac Casaubon. His majesty annexed to his gift the privilege which the royal library had acquired in the reign of Queen Anne, of being supplied with a copy of every publication entered at Statoners' Hall; and in 1759 the British Museum was opened to the public.

The value of the library has greatly enhanced by magnificent donations, and by immense parliamentary purchases. In 1763, George III. enriched it with a collection of pamphlets and periodical papers, published in England between 1640 and 1660, and chiefly illustrative of the civil wars in the time of Charles I., by whom the collection was commenced. Among other valuable acquisitions may be mentioned Curriek's collection of old English plays, Mr. Thomas Tyrwhitt's library, Sir William Musgrave's collection of biography, the general library of the Rev. C. M. Cræcherole, the libraries of M. Ginguene, Baron de Moll, Dr. Burney, and Sir R. C. Hoare; and above all, the bequest of Major Arthur Edwards, who left to it his noble library, and £7000 as a fund for the purchase of books. Four separate collections of tracts, illustrative of the revolutionary history of France, have been purchased at different times by trustees, in the exercise of the powers with which they are invested. One of these was the collection formed by the last president of the parliament at Bretagne, at the commencement of the revolution; two others extended throughout the whole revolutionary period; and the fourth consisted of a collection of tracts, published during the reign of the Hundred Days in 1815—forming altogether a body of materials for the history of the revolution as complete in regard to France as the collection of pamphlets and tracts already mentioned is with respect to the civil wars of England in the time of Charles I. Another feature of the Museum Library is its progressive collection of newspapers, from the appearance of the first of these publications in 1488. Sir Hans Sloane had formed a great collection for his day. But to this was added, in 1818, the Burney collection, purchased at the estimated value of £1000; and since that period the Commissioners of Stamps have continued regularly to forward to the Museum, copies of all newspapers deposited by the publishers in their office.

In 1823, the Royal Library collected by George III. was presented to the British nation by his successor George IV., and ordered by parliament to be added to the library of the British Museum, but to be kept for ever separate from the other books in that institution. The general plan of its formation appears to have been determined on by George III., soon after his accession to the throne; and the first extensive purchase made for it was that of the library of Mr. Joseph Smith, British consul at Venice, 1762, for which his majesty paid about £10,000. In 1768 Mr. (afterwards Sir Frederick) Barnard, the librarian, was despatched to the continent by his majesty; and as the Jesuits' houses were then being suppressed and their libraries sold throughout Europe, he was enabled to purchase, upon the most advantageous terms, a great number of very valuable books, including some very remarkable rarities, in France, Italy, and Germany. Under the judicious directions of Mr. Barnard, the entire collection was formed and arranged; it was enlarged during a period of sixty years, by an annual expenditure of about £20,000, and it is in itself, perhaps, one of the most complete libraries of its extent that was ever formed. It contains selections of the rarest kind, particularly of scarce books which appeared in the first ages of the art of printing. It is rich in early editions of the classics, in books from the press of Caxton, in English history, and in Italian, French, and Spanish literature; and there is likewise a very extensive collection of geography, and of the transactions of learned academies.—The number of books in this library is 65,250, exclusively of a very numerous assortment of pamphlets; and it appears to have cost, in direct outlay, about £130,000, but it is estimated as worth at least £200,000.

The nucleus of the department of manuscripts at the British Museum was formed by the Harleian, Sloanean, and Cottonian collections. To these George II. added, in 1757, the manuscripts of the ancient royal library of England. Of these, one of the most remarkable is the "Codex Alexandrinus;" a present from Cyril, patriarch of Constantinople, to King Charles I. It is in four quarto volumes, written upon fine vellum, probably between the fourth and sixth centuries, and is believed to be the most ancient manuscript of the Greek Bible now extant. Many of the manuscripts came into the royal collection at the time when the monastic institutions of Britain were destroyed; and some of them still retain upon their spare leaves the honest and hearty anathemas which the donors denounced against those who should alienate or remove the respective volumes from the places in which they had been originally deposited. This collection abounds in old scholastic divinity, and possesses many volumes, embellished by the most expert illuminators of different countries, in a succession of periods down to the sixteenth century. In it are also preserved an assemblage of the domestic music-books of Henry VII., and the "Basilicon Doron" of James I. in his own handwriting. The Cottonian collection, which was purchased for the use of the public in 1701, and annexed by statute to the British Museum in 1753, consists of 861 manuscript volumes, including "Madox's Collections on the Exchequer," in ninety-four volumes, besides many precious documents connected with our domestic and foreign history, about the time of Elizabeth and James. It likewise contains numerous registers of English monasteries; a rich collection of royal and other original letters; and the manuscript called the "Durham Book," being a copy of the Latin Gospels, with an interlinear Saxon gloss, written about the year 800, illuminated in the most elaborate style of the Anglo-Saxons, and believed to have once belonged to the venerable Bede. The Harleian collec-

tion is still more miscellaneous, though historical literature in all its branches forms one of its principal features. It is particularly rich in heraldic and genealogical manuscripts; in parliamentary and legal proceedings; in ancient records and abbey registers; in manuscripts of the classics, amongst which is one of the earliest known of Homer's "Odyssey;" in missals, antiphonars, and other service-books of the Catholic Church; and in ancient English poetry. It possesses two very early copies of the Latin Gospels, written in gold letter; and also contains a large number of splendidly illuminated manuscripts, besides an extensive mass of correspondence. It further includes about three hundred manuscript Bibles or Biblical books, in Hebrew, Chaldaic, Greek, Arabic, and Latin; nearly two hundred volumes of writings of the fathers of the church; and a number of works on the arts and sciences among which is a tract on the steam-engine, with plans, diagrams, and calculations by Sir Samuel Morland. The Sloanean collection consists principally of manuscripts on natural history, voyages and travels, on the arts, and especially on medicine.

In 1807 the collection of manuscripts formed by the first Marquis of Lansdowne was added to these libraries, having been purchased by parliament for £4925. It consists of 1252 volumes, of which 114 are Lord Burleigh's state papers, 46 Sir Julius Caesar's collections respecting the reigns of Elizabeth and James I.; and 108 the historical collections of Bishop Kenner.—Other valuable collections are the classical manuscripts of Dr. Charles Burney, the Oriental manuscripts collected by Messrs. Rich and Hull, and the Egyptian papyri presented by Sir J. G. Wilkinson. It would be endless, however, to enumerate these treasures; we have indicated enough to convince our readers that the library of the British Museum is worthy of the nation to which it belongs.

**THE RETALIATION.**—The noblest revenge we can take upon our enemies is to do them a kindness; for to return malice for malice, and injury for injury, will afford but a temporary gratification to our evil passions, and our enemies will only be rendered the more bitter against us. But, to take the firm opportunity of showing them how superior we are to them, by doing them a kindness, or by rendering them a service, the sting of reprobation will enter deeply in their soul; and, while unto us it will be a noble retaliation, our triumph will not unfrequently be rendered complete, not only by blotting out the malice that had otherwise stood against us, but by bringing repentant hearts to offer themselves at the shrine of friendship.

**HOW TO MAKE A FORTUNE.**—Take earnestly hold of life, as capacitated for, and destined to high and noble purposes. Study closely the mind's bent for a labor or profession. Adopt it early, and pursue it steadily, never looking back to the turned furrow, but forward to the new ground, that ever remains to be broken. Means and ways are abundant to every man's success, if will and action are rightly adapted to them. Our rich men, and our great men, have carved their paths to fortune and fame by this eternal principle—a principle that cannot fail to reward its votary, if it be resolutely pursued. To sigh or repine over lack of inheritance, is unmanly. Every man should strive to be a creator, instead of inheritor. He should bequeath instead of borrow. The human race, in this respect want dignity and discipline. It prefers to wield the sword of valorous forefathers, to forgoing its own weapons. This is a mean and ignoble spirit. Let every man be conscious of the God in him, and the providence over him, and fight his own battles with his own

good lance. Let him feel that it is better to earn a crust, than to inherit coffers of gold. This spirit of self-nobility, once learned, and every man will discover within himself, under God, the elements and capacities of wealth. He will be rich, inestimably rich, in self-resources, and can lift his face proudly to meet the noblest among men.—*New York Sun.*

FORTUNE-TELLING is as much in vogue as ever in Paris. A book, which is said to have caused much observation, appeared there lately, which is thus described in the correspondence of the London *Literary Gazette* :—

"It consists of extracts from the voluminous writings of a poor *gentilhomme* of Brittany, during a period of upwards of sixty years, and each extract is a prediction of some one of the great political convulsions which have occurred in this country during that time. Never was there a more correct *Vates*; but Cassandra herself was not more disregarded than he. The downfall and execution of XVI., the horrors of the Terror, the power and overthrow of Napoleon, the revolution of 1830, and the republic of 1848, were all predicted years before they came to pass; but the poor prophet was set down as a madman by all his literary contemporaries, and during his lifetime not a single newspaper would consent to say any thing about his predictions. What is the most singular thing of all is, that he foretold (years ago, remember—when Louis Philippe was at the height of his power), that the proclamation of the republic would lead to the domination of a member of Napoleon's family, and so it has; though if any one only six months before Louis Napoleon's election had predicted the same thing, he would certainly have been set down as a lunatic. In consequence of this extraordinary foresight of our prophet, people have looked with no little concern to what he says for the future.—And alas! they have met with nothing very consolatory. We are, it seems, on the brink of a fearful social crisis, the consequence of which will be the complete destruction of European society as at present constituted; and this destruction is only to be effected by the shedding of rivers of blood, and the weeping of oceans of tears!"

INDUSTRY.—A lazy husband, or a wife, though rich as Cræsus, is a bad bargain in any rank of society, but unspeakingly so in the ranks of our operatives. Here everything depends upon effort. You cannot help the mechanic or laborer who will not help himself. Indolence, like drunkenness, cannot be elevated. The proverb of Solomon has been verified in all ages—"The drunkard and the glutton shall come to poverty, and drowsiness will cover a man with rags;" and not only men, but women too. Hundreds of families are now in the most abject wretchedness solely through their sloth and idleness. We would have all young men inquire what time their sweethearts rise in the morning, and how they spend their days; and the young woman to be just as inquisitive concerning their swains. It may not be very poetical to be thus prying, but it may save a world of trouble by-and-bye.

HINTS TO YOUNG LADIES.—If any young woman waste in trivial amusements the prime season for improvement, which is between the ages of sixteen and twenty, they hereafter bitterly regret the loss, when they come to feel themselves inferior in knowledge to almost every one they converse with; and, above all if they should ever be mothers, when they feel their inability to direct and assist the pursuits of their chil-

dren, they find ignorance a severe mortification and a real evil. Let this animate their industry, and let a modest opinion of their capacities be an encouragement to them in their endeavours after knowledge. A moderate understanding, with diligent and well directed application, will go much further than a more lively genius, if attended with that impatience and inattention which too often accompany quick parts. It is not for want of capacity that so many women are such trifling insipid companions, so ill qualified for the friendship and conversation of a sensible man, or for the task of governing and instructing a family; it is often from the neglect of exercising the talents which they really have, and from omitting to cultivate a habit of intellectual improvement; by this neglect they lose the sincerest pleasures, which would remain when almost every other forsakes them, of which neither fortune nor age can deprive them, and would be a comfort and resource in almost every possible situation of life.—*Mrs. Chapone.*

#### MAXIMS TO GUIDE A YOUNG MAN.—

- Keep good company or none.
- Never be idle. If your hands cannot be usefully employed, attend to the cultivation of your mind.
- Always speak the truth.
- Make few promises.
- Live up to all your engagements.
- When you speak to a person, look him in the face.
- Good company and good conversation are the very sinews of virtue.
- Good character is above all things else.
- Never listen to loose and infidel conversation.
- You had better be poisoned in your blood than in your principles.
- Your character cannot be essentially injured except by your own acts.
- If any one speaks evil of you, let your life be so virtuous that none will believe him.
- Always speak and act as in the presence of God.
- Drink no kind of intoxicating liquor.
- Ever live, misfortune excepted, within your income.
- When you retire to bed, think over what you have been doing during the day.
- Never speak lightly of religion.
- Make not haste to be rich if you would prosper.
- Small and steady gains give competency with tranquillity of mind.
- Never play at any kind of game.
- Avoid temptation, through fear that you may not withstand it.
- Earn your money before you spend it.
- Never run into debt, unless you see a way to get out again.
- Never borrow if you can possibly avoid it.
- Do not marry till you are able to support a wife.
- Never speak evil of any one.
- Often think of death, and your accountability to God.
- Read over the above maxims at least once a week (Saturday night).

P. S.

—*Gazette and Courier.*

**A MOUNTAIN CAT.**—A gentleman yesterday brought into our office one of the most curious animals we have ever seen. He was caught in a trap baited with sugar, on the North Fork of the Yuba. Some have named this species of animal the mountain cat; but, with the exception of some of his habits, he seems to resemble the cat very little. He is about two and-a-half feet long, one-half of which length is his tail, which is ringed with alternate white and black. His shape more resembles the kangaroo than any other animal, his haunch portions being much larger than his breast. His head is small, with very large, glittering, prominent eyes, and a nose somewhat approaching the form of that of the lemming. He is as flexible as a weasel. With short legs and fine fur, and exceedingly clean and neat *toilete*, he is really one of the nice young men of the animal tribe. He is a curiosity, being unlike any thing we have before seen in any zoological collection or in a wild state. His color is grey, not so silvery as the grey squirrel, and the most inquisitive little Paul Pry that has ever looked in upon us. He is a far handsomer and cleaner animal than the coon, in all graces is as much his superior as is "Hyperion to a Satyr," and when we establish a new political party, shall probably instal him instead, as the insignia of our embodied principles.—*Alta California.*

**AFRICAN CHIEFS.**—At a late meeting of the Ethnological Society there were introduced a Zuloo chief, and also a Kafir chief; his wife, of the tribe of Annampoula, an infant child about a month old, brought over to this country by Mr. Caywood, and introduced to the society by Mr. Tyler, with a view the more clearly to illustrate the paper submitted to them by Earl Grey. The appearance of these interesting strangers in the rooms attracted general attention. The Zuloo chief is a man of fine muscular proportions, standing nearly six feet in height, the limbs being finely proportioned and displaying a symmetry not met with in the black tribes of other parts of the torrid zone. The Kafir chief was somewhat taller than the Zuloo, being about six feet and wearing the emblems of the rank of his caste, which was particularly marked by the circular natural coronet formed of matted hair, on the top of the head, which is considered to be an object of great distinction by its possessor. The war dress of both chiefs was composed of the same materials, consisting of numerous tails of the mountain cats, strung together, and hanging from the neck to below the knee; but a peculiarity very remarkable in both of them was the way in which they carried about their stuff or scent boxes, being the small horn of some animal peculiar to their country, ingeniously covered with a lid, and the small end being passed through a hole cut in each ear, from which place it is taken as occasion requires. In the course of the evening they exhibited their war dances, and also their mode of attack upon their enemies, the two chiefs being placed antagonistic to each other, but it required the constant interference of the interpreter to prevent what was gone through in sport for the gratification of the spectators from becoming earnest, almost from natural instinct to those who were engaged in it. Indeed, the war cry, the appearance of the features, the extended nostrils, and ready and certain aim, gave it all the aspect of a fatal reality. The Kafir chief also exhibited his mode of attack upon cattle, armed with a buckler of buffalo hide and a spear, which he performed with great dexterity. It appeared that these people had been brought to London by railway, and in their own language, they described their wonder at the velocity with which they travelled. On it being explained to them that the car-

riages were not moved by bullocks or any other cattle, but by steam produced from fire and water, the Zuloo wanted to know if so, how it was that the pot in which he boiled his food did not run off the fire—a question, it is needless to say, that caused great amusement.

**A GOOD CHARACTER.**—A good character is to a young man what a firm foundation is to the artist who proposes to erect a building on it; he can build with safety, and all who behold it will have confidence in its solidity, a helping hand will never be wanted; but let a single part of this be defective, and you go a hazard, amidst doubting and distrust, and ten to one it will tumble down at last, and mingle all that was built on it in ruin. Without a good character, poverty is a curse—with it, is scarcely an evil. Happiness cannot exist where a good character is not. All that is bright in the hope of youth, all that is calm and blissful in the sober scenes of life, all that is soothing in the vale of years, centres in, and is derived from, a good character. Therefore acquire this as the first and most valuable.

There is but one road to permanent happiness and prosperity, and that is the path of unspotted integrity, of high-souled honour, of the most transparent honesty.

**PITMEN AND MATHEMATICS.**—A paragraph has appeared in the papers, stating the fact, that the booksellers of Newcastle had observed that most of the standard mathematical works were purchased by pitmen. The following anecdote is in point. Some years since, a gentleman on his passage from Newcastle to Shields in a steam-boat, went into the engine room, and found one of the books mentioned—namely, "Emerson's Fluxions"—lying on the table rather black and smutty, evidently much read. He asked the young engineman who read the book? He answered that he did when he had time. Rather surprised at the fact, and presupposing that he was a young man of superior talent, he questioned him upon the subject, stating that himself had studied these matters at the University—had passed, he believed, a fair examination—and obtained a creditable degree. With this prelude they entered freely into conversation; and from that time the stranger used all his influence to bring the studious engineman into notice. The engineman is now a distinguished mathematician, and the author of many of the very works alluded to. He had a short time previous to this interview "risen from a bank-trapper to a breaksman" in a Newcastle coal pit, as stated in evidence before the Lord's committee the last session; and is now—Professor Hann, of King's College!—*Gateshead Observer.*

**THE BIBLE.**—The Bible itself (as Professor Maclagan has said) is a standing and an astonishing miracle. Written fragment by fragment throughout the course of fifteen centuries, under different states of society and in different languages, by persons of the most opposite tempers, talents, and conditions, learned and unlearned, prince and peasant, bond and free; cast into every form of instructive composition and good writing—history, prophecy, poetry, allegory, emblematic representation, judicious interpretation, liberal statement, precept, example, proverbs, disquisition, epistle, sermon, prayer—in short, all rational shapes of human discourse, and treating, moreover, of subjects not obvious, but most diffi-

cult—its authors are not found, like other writers, contradicting each other upon the most ordinary of fact and opinion, but are at harmony upon the whole of their sublime and momentous scheme.

**EARLY RISING.**—A talented physician remarks that—“Early rising is the stepping stone to all that is great and good. Both the mind and the body are invigorated by the practice, and much valuable time is gained that is lost to the sluggard. It is the basis upon which health and wealth are founded. The early morning is the best period for reflection and study; for it is then, after refreshing sleep, that the mind is most vigorous and calm. The statesman, as well as the merchant, arranges his plan for the coming day, and all passes smoothly; while he who wastes his morning in bed loses much of the most valuable commodity in life—time—which is never regained. Early rising will often make the poor man rich; the contrary will too often beggar the wealthiest. It will do much towards making the weak strong; and the reverse will enfeeble the strongest. Second sleep often produces headache and languor. There is nothing more true than that—‘He that loses an hour in the morning is seeking it the remainder of the day.’ All our greatest men have been early risers; for instance—Newton, Franklin, Wellington, Shakspeare, Milton, Reynolds, Hunter, Eldon, Erskine.”

**MORAL INFLUENCE OF BABIES.**—The influence exerted unconsciously upon a family, by a little child, especially if it be beautiful, gentle, and good, is not easily estimated. Few persons are aware or take time to think, how much ill-feeling is prevented, how much good nature and affectionate emotion are evoked, how much dullness and gloom are banished by the odd ways and sweet innocencies of the dear toddling baby. Even the rebuke which is slyly administered over baby’s shoulders to some older body, loses its vinegar and provokingness. Often to the brother or father, impatient for his meal, that he may get to business, is cheated into forgetfulness, while holding baby and listening to its funny attempts to talk. How we should like to know, can a man grumble that his steak is over or undone, or that a button is off, or that his wife has made a bill at the dry goods store, while baby is crowing in his face, or clambering on his knee? Heaven’s blessing on all good babies we say.

**CURIOS.**—A few days ago Mr. Anthony Marshall, a farmer in Dumfries, during a days thrashing of wheat, killed the enormous number of 150 rats, which were laid in a pile on the barn-sill; that day and next there was a keen frost, and the day after not a dead rat was to be seen, and no dogs or cats had been near! There is no accounting for their disappearance but upon the supposition that the remaining live rats carried them away—a habit they are known to possess.

**RICE BLANC MANGE.**—The following receipt for cooking rice, is worthy of preservation by every housekeeper—it presents a nutritious and agreeable article of diet for the invalid and a delightful and cheap dessert for the family table. Boil half a pint of whole rice in as little water as possible, till all the grains lose their form, and become a solid mass. Next put it in a sieve, and drain and press out all the water. Then turn it into a saucepan, and mix with it a large half pint of rich milk, and a quarter of a pound of powdered sugar. Boil it again till the whole is reduced to a pulp. Then remove it from the fire, and stir in (while hot) a wine-glass of rose water. Dip your moulds into cold-water, and then fill them up with the rice; set them on ice, and when quite firm and cold, turn out the blanc mange, and serve it up on dishes with a sauce tureen of sweetened cream flavored with nutmeg. Or you may eat with a boiled custard, or with fine sauce. You may mould it in large breakfast cups. Always dip your moulds for a moment in lukewarm water before you turn out their contents.

**VARNISHES FOR COATING METALS.**—Digest one part of bruised coral in two parts of absolute alcohol; but as this varnish dries too quickly, it is preferable to take one part of oil of rosmary, and two or three parts of absolute alcohol. This gives a clear varnish as limpid as water. It should be applied hot, and when dry, it will be found very hard and durable.

**FOR VARNISHING FURNITURE.**—The fused copal dissolved in oil of turpentine is the most economical. If the copal has not been kept a sufficient time in the state of fusion, the varnish made with it remains soft, for some time after it is dry, and afterwards peels off.

## Editor’s Notices, &c.

### GRANTS TO PROVINCIAL AGRICULTURAL ASSOCIATIONS FOR 1851.

The Secretary has been informed of grants made by the following county agricultural societies, up to the present date, March 6th.

Middlesex £25; Norfolk £20, York £30; Carleton £25; Prince Edward £20, Frontenac, Lennox, and Adirondack £25.

### FRUIT TREES, SEEDS, &c.

As the season for Spring operations has arrived, we observe, in answer to some inquiries, that all kinds of Agricultural and Garden seeds, flowers, &c., may be obtained of Mr. JAMES FLEMING, Yonge Street Nursery; Seedsman, by appointment, to the Agricultural Association of Upper Canada; who has a large assortment of imported and native seeds.

Mr. LESSLIE, of the Toronto Nursery, can supply the various kinds of fruit and ornamental trees, adapted to this climate: and his assortment is very extensive. Mr. DOUGALL’S Establishment at Amherstburg, is also well known, and there are besides a few smaller nurseries, in different sections of the Province,—where most of the common varieties of fruit can be obtained.

R. F. C.—received your communication in our next



## INQUIRER.

"Morton's Cyclopedia of Agriculture," is the best work of its kind in the English language. It embraces all the details of agriculture, practical and scientific, written by the most eminent farmers and scientific men of the day. It is an original work, and not as many such productions are, in great measure, a compilation. It can be procured in monthly parts of Mr. Maclear, bookseller, of this City, or of any of his travelling agents in the country.

## EXHAUSTING EFFECTS OF PLASTER.

H. A.—Your case is a very common one. No manure containing only one or two ingredients can invariably meet all the wants of vegetation. Your soil was evidently deficient in sulphuric acid and lime—the constituents of Plaster—that is, *sulphate of lime*, which enters largely into the composition of clover, and such like plants. Hence your extraordinary but short lived success with such crops.—But you have been removing from the soil in wheat, rye, barley, oats, &c., some half dozen important substances and have returned in the Plaster only two, and those not of the first moment to grain crops. No wonder then that the soil is exhausted, and that Plaster does no good. A fertile soil must contain a sufficient amount of eight or ten different substances, each of which is more or less carried off in every crop, the absolute amount of which in itself, of course, exhaustion of the land. For grain crops your soil require *phosphates*; for roots, *alkalies*.—Good farmyard dung is unquestionably the best fertiliser for general purposes, as it contains, more or less, all the constituents of plants. But as its supply is too commonly insufficient, recourse must be had, to bones, guano, wood ashes, saw, &c., when practicable, we advise the ploughing in of clover or buckwheat, with as liberal, previous dressing of such kinds of manure as can be obtained as possible, seed down with a grass crop, and pasture for a few years. The land will then be again "in heart," and may be kept so by judicious cropping and manuring.

## THE GOOSEBERRY.

G. F.—The nurserymen about Toronto and elsewhere, can no doubt supply most, if not all the sorts you require. The gooseberry is not naturally well adapted to this climate, our summers being too hot and dry. Plant in a cool and moist situation, protected as much as possible from the rays of the midday sun, in a *stiff* soil. Cut away the wood freely, mulching with hay and saltpetre, or common salt, will prove advantageous. Even in the moist climate of Lancashire, where the largest gooseberries in England are raised; particular attention is paid to the thinning out of the shoots and keeping the ground moist and shaded, with moss, &c. Our correspondent will find more information in our volume for 1849, page 102, by a Canadian gardener.

## STEPHEN'S FARMER'S GUIDE.

The 14th number of this cheap and excellent publication contains a steel engraving of a Short Horn Ox, and much useful information on the management live stock; modes of sowing seeds, and the laws of vegetation, illustrated by numerous cuts.—Toronto: H. Rowse.

## GREAT SALE OF SUPERIOR THOROUGH BRED SHORT HORN CATTLE.

The subscriber having more stock, than he can well sustain on his farm, will offer at public Auction about 30 head of his improved short horn cattle, consisting of Bulls, Cows, Heifers and Heifer and Bull Calves, on the 26th day of June next, at his his farm 2½ miles from the City of Troy.

It is known to breeders of improved Stock, in this country, and in Canada, that the proprietor of this herd, during the past 12 years, has through the medium of importations, from England, and selections from the best herds in this country, spared no expense to rear a herd of Cattle from which superior animals could be safely drawn, for improvement and crosses upon other herds. His importations have been derived from that eminent breeder, the late Thomas Bates, Esq. of Kirkcarrington Yorkshire, England, which herd it is well known has recently been disposed of at public sale by his administrators, and dispersed in many hands, and can no longer be resorted to as a whole for improvement. The announcement of that sale created great interest, and all short horn breeders in England seemed emulous to secure one or more of these animals, to mingle with the blood of their own herds, and at the day of sale, there was found assembled the largest audience ever before witnessed upon a similar occasion, numbering as was said from 4000 to 5000 persons, and among them the best breeders in England, and several from other countries, some of the animals bringing prices that seemed incredible to many.

In the herd now offered for sale will be included, the Imported Bull Duke of Wellington, and the premium Bull Meteor, these are Bates's Bulls, and their reputation as stock getters are two well known, to need any comment. I am however authorized by Lewis F. Allen of Black Rock, one of the most prominent breeders in this country, and who has had ample means of forming a judgment, that in no instance to his knowledge had these two Bulls been bred to short horn Cows of other herds, previously imported into the United States but what the produce were superior in general qualities to such herds.

The most of the stock which is now offered for sale, has been bred from these two Bulls and the proprietor, having a young Bull more remotely connected with that portion of the herd, he retains (being about 14 in number) can spare these two valuable Bulls. There will be in the stock offered for sale, 6 young Bulls from 8 months to about 2 years old, in addition to the two named above, and the remainder of the stock will be composed of Cows, (most of them possessed of extraordinary milking qualities) Heifer and Heifer Calves. It is believed that no herd of short horns has ever been offered for sale in this country, exhibiting more of the valuable combinations of qualities which contribute to make up perfect animals. A catalogue containing the pedigrees of these animals, will be ready for delivery at an early period in which the terms of the sale will be particularly stated. A credit will be given from 6 to 8 months. Gentlemen are invited to examine the herd at their convenience.

GEORGE VAIL.

Troy, near Albany, N. Y.

## NOTICE.

Parties requiring either a FARM MANAGER OR GARDENER, or one to act in both capacities, may hear of a respectable and well qualified person, by applying (if by letter, *post-paid*) to our office. We also know a young man recently from Scotland, possessing most satisfactory testimonials, that would be happy to engage with any respectable party, requiring a person of industrious habits and agricultural skill.