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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 McDUGALL, }

{ EDITORS AND  
{ PROPRIETORS.

VOL. I.

TORONTO, MAY 1, 1849.

No. 5.

## The Canadian Agriculturist,

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

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

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

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

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

Subscribers who desire to continue the work, will do well to send their orders without delay; for, as we do not mean to print a large edition, with the view of having a surplus, we cannot promise that at the end of two or three months we shall have any back numbers on hand.

TRAVELLING AGENTS.—Mr. T. M. MUNN is our Travelling Agent for the Eastern section of the Province; Mr. PALMER for the Northern; and Mr. JAMES WILLSON for the Western: who are authorized to receive subscriptions for last year's volume as well as for the present.

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

## TORONTO NURSERY,

FOR SALE, an extensive collection of FRUIT TREES, consisting of all the choicest sorts of Apples, Pears, Plums, Cherries, Peaches, Grape Vines, Raspberries, Gooseberries, Strawberries, Currants, Asparagus, and Rhubarb Root, &c.

Also, Ornamental Trees, Flowering Shrubs, Hardy Roses, Herbaceous Flowering Plants, &c., in great variety.

Descriptive Catalogues, containing directions for transplanting, furnished gratis to post-paid applicants.

GEORGE LESLIE.

March, 1849.

4

## CASH! CASH!! CASH!!!

THE Subscriber will pay the highest Cash Prices for 1000 bushels clean Lambsy Seed; 100 bushels clean Spring Tares; 100 bushels White Marrowfat Pea; and 25 bushels Flax Seed.

JAMES FLEMING,

Yonge Street,  
Toronto, Jan. 1, 1849.

Seedsman and Florist.

1

**GORHAM & McDOUGALL,**  
**ATTORNEYS, SOLICITORS, &c.,**  
 South West Corner of  
**KING AND YONGE STREETS;**  
**TORONTO.**

Deeds, Mortgages, and other Legal Instruments promptly prepared.

**PHENIX FOUNDRY,**  
 No. 58, YONGE STREET, TORONTO.

**GEORGE B. SPENCER;**  
 (LATE G. ELLIOT).

CONTINUES every Branch in the above Establishment, as heretofore; and, in addition, keeps constantly on hand a good assortment of COOKING, PARLOR, BOX, and AIR-TIGHT STOVES, of the most approved patterns.

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

Toronto, Jan. 26, 1849.

1-tf

**MAMMOTH HOUSE,**

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

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

Toronto, 17th April, 1849.

5

**SEVERN'S BOTTLED ALE.**

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

J. D. BARNES,

6, Wellington Buildings,

Adjoining Mr. Sterling's, King-st.

Toronto, Jan., 1849.

1

**HOME DISTRICT AGRICULTURAL SOCIETY.**

THE SPRING EXHIBITION of this Society will be held in the City of Toronto, on WEDNESDAY, May 9, 1849.

GEO. DUPONT WELLS,

Honorary Secretary.

**PAPER HANGINGS!**

A LARGE and CHOICE assortment of PAPER HANGINGS, of the newest styles of patterns, for Sale, wholesale and retail, by

BREWER, McPHAIL, & CO.,

46, King Street East.

Toronto, April, 1849.

5-lin

**BRONTE MILLS FOR SALE.**

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

ALSO,

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

ALSO,

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

Toronto, March 1, 1849.

**STOVES! STOVES!! STOVES!!!**

**J. R. ARMSTRONG;**

**CITY FOUNDRY,**

No. 116, Yonge Street, Toronto,

HAS constantly on hand COOKING, BOX, PARLOR, and COAL STOVES, of various patterns and sizes, very cheap for Cash.

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

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

Toronto, Jan. 26, 1849.

3

**SHOE AND LEATHER STORE.**

DANIEL FARAGHER begs to inform his friends and customers that he has opened a Shoe and Leather Store, at No. 22 1/2, Yonge Street, Toronto, where he will be prepared to furnish all kinds of work in his line at the most reasonable prices. Having a Tannery of his own in active operation, he can supply the trade and others with as good an article of Leather, and at rates as low, as can be obtained elsewhere.

DANIEL FARAGHER.

January, 1849.

1-tf

**MESSRS. DENISON & DEWSON, ATTORNEYS &c., New Market Buildings, Toronto.**

January 26, 1849.

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THE  
CANADIAN AGRICULTURIST.

VOL. I.

TORONTO, MAY 1, 1849.

No. 5.

THE POTATO DISEASE.

If the nature of the potato disease and its remedy are destined to remain in impenetrable obscurity, it will hardly be said to be on account of any want of interest felt on the subject. Perhaps no question connected with vegetable nature ever before elicited so much public attention, and called into the field of observation so many practical and scientific men. From all that we can learn, this destructive malady appeared in a much more mitigated form in Upper Canada, during the past year, than it did in 1847, and a larger amount of potatoes have been kept during the winter, and appear generally to be in a sound condition. The cultivation of this root will probably be more extended this season, and we advise our readers to be extremely careful in selecting seed, in preparing and manuring the land, and to commence planting as early as possible.

Notwithstanding these favourable symptoms of the condition of the potato in this country, we have no guarantee for its healthy restoration, as we find that in several parts of England, where the disease previously seemed to have declined, yet, in 1848, it reappeared in as bad a form as ever. This fact seemed to indicate, that the visitation might become more or less permanent, and consequently but little reliance for the future can be placed upon the cultivation of this crop. Ordinary means of investigation had failed or become exhausted, and men appeared, after a lapse of four years, almost as much at a loss, as to the nature and management of this malady, as they were at its commencement. From the discordant results and conflicting testimony that had been collected, a discovery of the cause of the disease appeared almost hopeless. Scientific men were impressed with the supreme importance of accurate systematic observation. Dr. Lindley, than whom no one ranks higher as an authority upon this subject, accordingly addressed, last autumn, a series of printed questions to a great number of persons in all parts of the United Kingdom, who were likely to communicate re-

liable information. No less than 999 of these forms were filled up, and returned to London: 679 from England, 182 from Scotland, 92 from Ireland, 32 from Wales, and 14 from persons whose residence could not be ascertained. The information thus collected must possess the highest interest, and form a permanent record of authenticated facts. The details, however, are far too lengthy for the pages of the *Agriculturist*; we will, however, endeavour to give our readers some of the more important results of their scientific classifications, as they appear in several articles in recent numbers of the *Gardeners Chronicle*. It appears that the examination, classification, abstracting of the returns occupied a clerk and his assistants 16 weeks!

Much of the information is condensed in a tabular form. The first table comprises the effect of the different periods of planting, to which is appended the following memoranda:

“ENGLAND—*Time of Planting*.—February planting much recommended; said to be more beneficial than autumn planting. Some say February planting produces a heavier and as sound a crop as autumn planting; but the returns show that autumn planting escaped disease, when February planting suffered a little. In some of the northern counties, where there was comparatively little rain, April and May planting succeeded well. *Time at which the crop was attacked by blight*.—Hardy or course growing varieties, in some cases a fortnight later than fine varieties in being blighted, and do not decay so rapidly. Dry, light, and well exposed fields generally about a fortnight later in being blighted than close sheltered situations. In some places where lime was used, even on heavy land, (if dry,) the blight was about a fortnight longer in appearing. SCOTLAND.—Autumn planting not recommended; said by some not to produce such a good sound crop as spring planting. IRELAND.—Autumn planting not better than early spring planting, according to correspondents in Kilkenny and Down”

The second table shows the effect of soils and manures, and the third relates to the comparative power of resisting the disease possessed by certain varieties. It is stated:

“That when *Peat moss* suffered it had been clayed or marled. New heath land, planted in May, was half diseased. *Light lands* suffered much when highly manured, and planted late. *Heavy lands* suffered

little if naturally dry or well drained, or planted early with manure that does not stimulate, such as loose litter, ashes, or without manure."

[To be continued].

## NORMAL SCHOOL, TORONTO.

We are glad to find that the science of Agriculture has obtained a footing in this valuable Institution. His Excellency the Governor-General intimated to the Board of Education, some time ago, his desire to offer two prizes, to any two pupils who might pass the best examination in Agricultural Chemistry, Vegetable and Animal Physiology, and the Chemistry of Food.

At the recent half-yearly examination, his Excellency's liberal offer was carried into effect. The competitors amounted to no less than thirty-two, several of whom were females. The pupils were allowed four hours in each of two days to return written answers to a series of printed questions, amounting to sixty-six, and embracing the most important principles of Chemistry, together with Vegetable and Animal Physiology. We should state, that the pupils, during the time of writing their answers to the questions, were under the eye of one of the Masters, and were not allowed the use of any text-books or notes.

The first prize (consisting of a judicious selection of Educational and Scientific Works, to the amount of five pounds in value) was awarded to Mr. Abraham Diamond, of the Midland District. The second prize (consisting of books to the amount of three pounds) was given to Mr. James T. Pennock, of Johnstown District, both natives of Canada, and the sons of farmers. The prizes were presented by the Honourable Chief Justice Robinson, before a large and respectable audience, accompanied by some appropriate remarks, in his Lordship's usual chaste and felicitous style. Although there was, of course, much inequality in the attainments of the pupils, yet, when it is considered how fully and correctly many of the questions were answered by a considerable number, most of whom had devoted only a small portion of one Session of five-months to the subjects which the examination embraced, we feel pleasure, as one of the examiners, in saying, that the result was equally creditable to the efficient instructions of the Teacher and the industry of the pupils. We were particularly pleased with the returns of several of the females.

The following gentlemen were appointed by the Board as Examiners:—

Thomas Jaffray Robertson, Esq., Head Master of Normal School.

Henry Youle Hind, Esq., Mathematical Master, Lecturer in Chemistry, &c.

Henry Holmes Croft, Esq., Professor of Chemistry King's College.

Edward W. Thompson, Esq., President Home District Agricultural Society.

Francis Neale, Esq., A.M., Vice-President do. do.  
George Buckland, Esq., Secretary to the Provincial Agricultural Association.

## ADVANTAGES AND DISADVANTAGES OF SUBSOIL AND TRENCH PLOWING.

Subsoiling, we are to understand, consists of loosening the ground below the depth it is ordinarily disturbed by common tillage. A heavy plow is first run along the field, say from six to ten inches deep, and is then followed, in the bottom of the same furrow, by a subsoil plow, which has no mould board, stirring the soil to a depth of six or seven inches more.

The reasons generally stated in favor of the system, by its advocates, are the following:—1st. That where there are drains in a field, subsoil plowing facilitates the escape of water into these drains. 2d. It deepens the actual thickness or amount of soil to the extent of from eight to sixteen inches; thereby affording double nourishment to the crops. 3d. It increases the heat or temperature by lessening evaporation. 4th. In dry summers, when crops are parched, the increased thickness of soil, which causes the roots to penetrate to a greater depth than usual, enables the crop to withstand the drought.

The chief objections urged against subsoiling are:—1st. The extra labor of men and horses. 2d. From the tardiness of the operation, it drives out of season the other work of the farm. 3d. On light, leach soils, it is attended with little or no benefit, but on the contrary, is injurious in causing rains and liquid manure to descend more readily beyond the reach of the roots of the plants.

By *trench plowing*, the soil is cast up to the surface and is either benefited or injured thereby, according to the nature of its constituents and the manner in which it is trenched, after it is turned up. For instance, there is often contained in subsoils, a considerable proportion of matter, called by chemists *protoxide of iron*, which is readily dissolved by water, and in that state, is poisonous to plants, directly applied to their roots; but if these subsoils are opened to the influence of the atmosphere, the substance will gradually be converted into *peroxide of iron* (common red iron rust), and may be applied to crops without injury. It often happens, also, that some subsoils embrace fragments of rocks containing sulphur combined with iron (sulphur of iron), which on exposure to the atmosphere, is changed into green vitriol or common copperas (sulphate of iron), in that state is quite as unfit for the food of plants as the protoxide of iron. Both of the two last-named salts, however, when brought into contact with lime, or any of the alkaline carbonates, are easily decomposed, changing the iron into a peroxide, which is not only harmless to plants, but in some cases beneficial to them. The sulphuric acid, contained in copperas, also, at once combines, in definite proportions, with the lime, or other alkaline bases, springing upon the soil, and forms in one case, sulphate of iron.

(gypsum or plaster), and in others, sulphates of soda, potash, &c., according to the nature of the alkaline carbonate applied, the fertilizing influences of which are too well known to require repetition here. Hence, the good effects which often occur from abundant top-dressings with air-slacked lime, or of wood ashes, carbonates of soda, potash, &c., on land that has been trenched or deeply plowed.

If a soil be sandy, gravelly, or light, with little or no sod on its surface, or vegetable matter beneath no particular advantage will result from trenching, unless there be plowed under a liberal supply of course barn-yard manure—green clover, vetches, buck-wheat, or weeds—dry leaves, grass, stubble, straw, or some compost rich in animal and vegetable salts; and then it will often become necessary to add a slight top dressing of guano, pondrette, or some stimulating manure, in order to give vigor to the infant plants. But if the upper soil be deep, and is interwoven with the roots of grass, weeds &c., it may be turned under from a depth of ten inches to a foot; and so long as this vegetable matter remains in the soil, it will serve as a proper food for other plants. In short, if due attention be paid to the animal manures, if the ground be hot and sandy, trench plowing will make it cool and moist; and if it be strong and clayey, it will open it and keep it loose, rich, and mellow.—[Am. Ag.]

#### LOWER CANADA AGRICULTURAL SOCIETY.

The Annual General Meeting of the Lower Canada Agricultural Society took place at their Rooms in that City, on Saturday, 24th March last, in conformity to the Act of Incorporation, and to the Rules of the Society. The Hon. A. N. Morin, President of the Society, took the Chair, and addressed the meeting, giving a brief outline of the proceedings of the Society for the past year, and their future prospects.

##### REPORT.

The President and Directors of the Lower Canada Agricultural Society, for the past year, beg to submit to this General Meeting the following Report:—

And First—they congratulate the friends of Canadian Agriculture, assembled here to day, upon having a place of meeting exclusively appropriated to the interests of Agriculture and the advancement of its improvement and prosperity. For the first time in Lower Canada, an Agricultural Library has been commenced, and even at this early period of its establishment, contains, as you may perceive, many excellent books in both the English and French languages, on the science and practice of husbandry, and several of the most valuable periodicals, with a prospect of the number being augmented continually, affording to agriculturists, becoming members of the Society, constant access to useful information on the subjects of their profession, that is not to be obtained elsewhere in Lower Canada.

The seed store, opened in the same premises by the Seedsman of the Society, affords an opportunity of purchasing seeds of every species and variety on favorable terms, as well as offering the farmer an opportunity of showing any superior grain he may have to dispose of as seed to those who may require to purchase seed. There is a further advantage, that foreign seeds of any kind may be obtained through the Seedsman, by giving an order in due time. A show of implements is commenced, which there is every reason to expect will be well furnished before the next annual meeting. All these are direct advantages. The next subject they would advert to, is the Agricultural Journals, published both in the English and French languages, for the past year and up to this period of the present. It is needless to state to you what may be the merits or defects of these Journals, as no doubt you are all subscribers to them and perfectly acquainted with their character. The Directors regret to have to report that a large portion of the subscriptions remain unpaid, and it is an extraordinary circumstance, that while in some parishes and sections of the country, nearly the whole of the subscriptions are paid up willingly, in others scarcely any have been paid. The Directors, however, have reason to believe that the Journals have had a most beneficial influence among the farmers, and disposed them to introduce improvements. The expense of the Journals and the state of the subscription list will be submitted to you to-day.

The Agricultural Journals were the only means of maintaining a connection and correspondence between the Society and the agricultural classes, and each of the great National Agricultural Societies of the British Isles, publish a Journal, and regard it as the chief means of connection with Agriculturists and of advancing the improvement of husbandry. The Society have been organized and incorporated by the Legislature, and have so far proceeded in the great work they proposed to accomplish. If they meet with any check now, it will be solely attributable to the want of adequate support. The objects for which they have been organized are of as much importance to the country now to be attained, as they were two years ago, and the Directors of the Society have, so far, done all in their power, in proportion to the means at their disposal to attain these objects. They have done more than could have been expected, by incurring a very considerable responsibility in publishing the Agricultural Journals, and forwarding them to every parish and the Commissioners of every country school in Lower Canada with a view of awakening a spirit of improvement in the general system of

Canadian husbandry, and that they might be read in the schools by the scholars who were hereafter to become farmers. This measure was adopted as the only means possible of connecting the Society with the rural population throughout the Eastern section of the Province, and to show them that there was a Society organized, who however remote and separated by distance from them, were anxious for their welfare and desirous that they would introduce such judicious changes in their modes of farming as would likely prove advantageous to them—and the Society had the more confidence in the success of their measure, because there could not be any suspicion of self-interested motives attached to their efforts by the rural population—whose perfect confidence is so necessary to any Society that would propose changes in a system farmers were so long accustomed to follow. The Society were desirous of being regarded by the rural population as the Society of the people, actuated by no other motive but that of promoting their prosperity and augmenting their means of comfort and happiness; by suggesting the means to them by which they might attain these benefits from the resources within their own power. The proposition is generally admitted that agriculture is, and must be, the main stay of prosperity to this Province, and it may be presumed there is not one individual at this meeting that does not entertain this opinion. This Society, as the Agricultural Society of the people, cannot possibly have any other object than the improvement and prosperity of agriculture as the best means of giving strength and stability to the main stay of Canada; and if they will only follow the example of the great Agricultural Societies of the British Isles, they will confer a greater amount of unmixed good on the rural population and upon the country generally, than could be expected from any other measures possible to introduce. One of the principal objects for which this Society was organized was the establishment of Model Farms and Agricultural Schools. To accomplish this, considerable funds would be required. The question then appears to be—would such Schools and Model Farms produce general benefit to the country proportioned to the expenditure that would be necessary for their establishment? The Directors think that they would, and that such establishments would, under judicious management, soon pay their own expenses, and be of incalculable benefit to Canadian farmers, and to the country generally, affording a suitable education, and practical instruction in the art of agriculture to young farmers, and instructing laborers, or those

who were to be dependent upon the wages of labor, in all the various works of the farm; and those again who would be educated and instructed at these establishments, teaching others throughout the country how to farm, and how to execute every farm work expertly and well. The Canadian farmer only requires to be convinced by practical demonstration of the advantages of introducing a change in their system of agriculture, to insure their doing so in nine cases out of ten. On Model Farms this can be properly demonstrated, and this would be one of their principal uses.

The Directors will feel much gratified if their management of the affairs of the Society is approved of by this meeting; and in retiring from this management, they would earnestly recommend the care of Canadian agriculture to their successors in office. There is much good expected to result from the action of this Society, and it would be a matter for deep regret, should public expectation be disappointed.

A. N. MORIN, *President.*

WM. EVANS, *Secretary.*

Montreal, March 24, 1849.

#### FACTS IN FARMING.

There is a remark we often hear, when urging farmers to take an agricultural paper, which is this, "Why, sir, there is nothing practical in them, or so little, that we will not pay our money for one." Now there is no truth in the remark; and in proof of my assertion, I ask of any candid reader if he ever knew a farmer who has attentively read an agricultural paper for two years, without improving his farming more than ten times the value of the paper? A neighbor of mine, an old man, has taken one for two years; and a few days since, he remarked to me, that he had made an improvement which was fifty dollars profit to him last year. After reading your articles on draining and irrigation, he drained a cold, wet field, and turned the water from it so as to run over a dry, adjoining meadow, thus "killing two birds with one stone," by draining the one and irrigating the other.

In 1840, I had six acres of land entirely worthless, being covered with bogs and bushes, upon which the water stood most of the year. I drained it, cut up the bogs and bushes, plowed and sowed it with buckwheat, for two years, and then seeded it down with Timothy. The result of my labors was as follows:—

160 bushels of buckwheat, valued at . . .	\$80
8 tons of hay, in two years, . . . . .	80
Increased value of the land, . . . . .	150

\$310

From this deduct—

For expense of draining, bogging, &c., . . .	\$100.00
For seeds, plowing, harvesting, &c., . . .	115.00

\$218.50

Net profit, \$91.50

I would ask every farmer who has such land to "go and do likewise." It would be a better investment than

to put out money on bond and mortgage; for in four years, and often the first crops will repay all expenses attending the improvement, it will be permanently valuable; besides the gratification of beholding that which was worthless and unsightly, converted into a productive and smiling field.—[Cor. Am. Agriculturist.

### AGRICULTURAL PERIODICALS.

*To the Editors of the Canadian Agriculturist.*

GENTLEMEN,—I congratulate you, as well as your readers, upon the satisfactory appearance, and increased usefulness which the three issues of the *Canadian Agriculturist* have assumed; and I hesitate not to predict that we may, with the utmost sanguineness, expect, from the style and contents of the first three numbers, that the publication will ultimately become second to none of its kind on this side of the Atlantic. This, at least, is my conviction; and I earnestly hope that time may confirm it. I am, nevertheless, fully aware that the responsible calling and onerous task you have so laudably imposed upon yourselves cannot but for a time be surrounded with many difficulties; but, with the persevering energy and talents you possess, I have no fear for the result. And were I qualified, either by education or scientific knowledge, there is no occupation I could choose that I should more rejoice in than the one in which you are engaged; for where, let me ask, can be found one more honourable or useful to mankind, or more satisfactory to the individuals engaged in it? And I do fervently hope, that the enterprising spirit, and decided talent, with which your publication is commenced, may be duly and sincerely valued by the farming and general community of this Province, and that its circulation and remuneration may be commensurate with its worth.

I could wish to say much on this subject, but, for fear of making my letter too long, I must content myself by briefly calling upon my brother farmers, *one and all*, in every section of the Province, to aid, by every means at their command, not only the circulation of your valuable paper, but to contribute occasionally an article, based upon their individual experience and practical knowledge, acquired in this country. For it cannot be reasonably expected, let the scientific and practical knowledge of an Editor be what it may, that he can impart all the information that is desirable or necessary, unless farmers at a distance furnish the requisite materials. It is not, in my opinion, the mere fact that a farmer subscribes to an agricultural paper that should lead him to rest satisfied of having done his duty, either to the class to which he belongs, or the country of which he forms a part. A single article, perhaps, from his pen, based upon his own experience, might be the means of advancing the important art of practical husbandry, and of materially increasing the wealth of the country.

When, therefore, the untold benefits, both to the present and succeeding generations, that would flow from such a mode of procedure, are considered, allow me to call upon all who have at heart the success of agriculture (and who is there, Messrs. Editors, in this country, that is not, either directly or indirectly, interested in this great question) to give this subject their serious consideration.

None, I am sure, but will admit its paramount importance, in a country like ours; and also how deficient we are in Canada, generally speaking, in those kinds of knowledge which are necessary to our professional calling, that we may induce the soil to yield to industry and talent the full measure of her riches. What, then, but the dissemination of sound knowledge, derived from the practical experience of those around us, combined with persevering energy and study, can give us the valuable information we so much need and desire. I must candidly admit, as regards myself, although a farmer of some five and twenty years standing, that I find, the more I read and practice, the more I have got to learn; and it is this conviction that makes me anxious to see so valuable a publication as the one you have now presented us with patronised by an extensive circulation throughout the Province. And when it is taken into consideration, that one single page will sometimes contain information worth a hundred times the price paid for the work, no farmer's fireside, however humble his circumstances, or exalted his station, or extensive his knowledge, ought, in my opinion, to be without it. Indeed, what is there more interesting, or more profitable to a farmer, than furnishing himself with information, by turning over a few pages of an agricultural paper, containing the results and experience of the long and industriously spent lives of those in the same profession as himself? In every number, I may hazard an opinion, that the reader, let his experience be what it may, shall find something which he never knew before. And it is not, Messrs. Editors, your *Agricultural Journal* alone that I would recommend to my brother farmers, but I would say to them, compare also the science and practice most extensively given in publications of the same nature as your own, by our neighbours across the Lake, and the one also from the Lower Province. Three of those from the States I am monthly in receipt of, as well as the Lower Canada journal, all of them of the highest order, and conducted by gentlemen of talent and extensive practical knowledge. I say it is by comparing the contents of such works that the farmer secures to himself, at a trifling cost, a fund of invaluable information, which, when brought into action, not only becomes, in due time, a source of wealth to himself, but of incalculable benefit to his children.

I feel, Sirs, that I ought here to drop my pen; for I have written much more on this subject than I thought of doing at the commencement of my letter, but on the importance of the subject I feel deeply.

Yours, truly,

April, 1849.

LEICESTERENSIS.

### PLASTER—ITS USES, AND MODE OF APPLICATION.

*To the Editors of the Canadian Agriculturist.*

GENTLEMEN,—In a former Communication, I promised that I would give you the results of my experience in the application of plaster (gypsum) upon the several crops with which I have tested its efficacy—more, however, I must confess, with a hope of

inducing those to use it who are not fully alive to the real value of its fertilising properties, than with any expectation of making converts of others, who, through ignorance and prejudice, are determined not themselves, nor will yet allow, if they can possibly help it, their neighbours, to be benefitted by it. To such, I fear it is almost useless to write or talk; and yet I have known *time* and *facts* convince even the most sceptical on many subjects, and eradicate the most inveterate and deep-rooted prejudices in the minds of some individuals. It is therefore, perhaps, wise to live and hope!

My first essay with plaster was about ten years ago, upon a piece of Indian corn, grown a good deal about the neighbourhood in which I then resided. It was my first year in the country, and being a perfect stranger to the crop, I sought, as a matter of course, instruction of my neighbours, as to the best mode of cultivation; and, on expressing my doubt as to the land being in sufficiently good heart to carry such a bulky crop through to maturity (having little, or no manure then on the farm), I was told there was no fear of that, with the manure I had, provided I gave the corn a liberal dressing of plaster. I immediately set about procuring the *precious article*,—for such I have considered it ever since, its virtues being sufficiently tested upon that crop, to my entire satisfaction, as well as upon those of the two subsequent years' growth on the same spot, without any additional plaster or other manure; and I will here give the particulars. The corn piece was about five acres; and on learning that cattle, horses, and sheep were extremely partial to it as fodder, I determined on trying what extra quantity I could procure, to cut for that purpose, by leaving the plants twice as thick in the row (for I had sown the part on which the corn was to ripen in drills, about three feet apart, and the one acre for fodder about half that distance), and dressing them liberally a second time with plaster. The result, I need hardly say, more than answered my most sanguine expectations; for I cut between four and five tons, as near as I could guess, by the number of loads we hauled out of the field; and I do not hesitate to assert, that had the land been properly prepared the fall previously, we should have cut fully six tons to the acre; for I have since seen upwards of that weight grown on a favourable location, where the crop has been well managed, and the season a *kind one*; for you well know, Gentlemen, notwithstanding all the experience, skill, and energy we farmers may possess, the *seasons* will occasionally (if I may be permitted to speak plain) make fools of us all! I have two or three times since grown the same crop broad-cast, but not with exactly the same successful result: but I do not attribute it to any fault in the system; it was owing to the soil being greatly impoverished, in one instance; and in another the crop was sown too late; and the third time it had to contend with the hottest summer Canada has experienced, according to the recollection of that veritable personage, "the oldest individual then alive!" It is fully my intention this year, notwithstanding, to sow four or five acres for fodder, if I can accomplish it; being short of grass land, and heavily stocked: but I shall prefer putting it in

with the ribbing plough, as before, or with a drill, the rows eighteen inches apart, and the plants thinned out about nine inches asunder in the row. I may as well here state, that I prefer this system to the broad-cast, as I have not only the plants more uniformly distributed, but I think a heavier crop, besides the advantage it affords of running the ribbing-plough, or cultivator, one between the rows, when the plant is about nine inches high, to keep down the weeds; and those that rise between and close to the plants are destroyed with the hoe, in thinning out the latter. This leaves the soil as clean, and in as good order for wheat, as the best fallow you can make.

And now for the result of the double application of plaster that was given to the acre, from which the fodder was cut, upon the two subsequent crops. For this is what I wish more especially to call the attention of your readers to, and particularly of those (should this letter, by chance, meet the eye of such) who unscrupulously assert, without having given it a trial, and thereby prejudice their neighbours, that plaster is an *exhauster* of the soil, and therefore does more injury than good. The first crop that succeeded the corn was oats, the second peas. They were both good throughout; but upon the acre that was doubly plastered, the crop was rank in the extreme—a much darker green; and the oats, when ripe, much heavier, and more of them; and the straw nearly a foot and a half higher than the remaining part of the five acres. And, as regards the pea crop, the following year, the effect where the double dressing of plaster had been applied, was, if possible, more plainly discernible. The pea straw was nearly as long again as the other part of the crop—also darker in colour, stronger, the leaves larger, and the pods much more numerous. In fact, I believe the crop would have gone on growing and flowering till Christmas, had the weather permitted; for when we cut it, which was very late (the middle of September), that part of the crop was still in blow, and the other part harvested.

Now, Messrs. Editors, what will the *unbeliever* in the fertilizing property of plaster say to this statement? Did the plaster, in this case, prove an *exhauster of the soil*, or an injury to it? Was *ever* such miserable fallacy heard of—such stupid ignorance promulgated? Is it not equally surprising and deplorable that men will allow themselves to be robbed, as it were, of hundreds of dollars, yearly, because they will not give this cheap and extraordinary fertilising manure a fair trial; when it can be procured, too, at so small a cost? To those who use the article I need not even say, persevere—their own sagacity will lead them to that; but to the who argue themselves and their neighbours out of the benefit arising from it, and thereby lessen the yearly produce of their farms nearly, if not fully one-third (for I do not hesitate to affirm, that there scarcely a crop grown, upon which it may not be applied with success, provided it be *judiciously used*), I would urge most strenuously to give once a *fair trial*; and I dare hazard they will be ready, *ever after*, to travel almost to the *Land's end* for it, rather than to be without it. Let Messrs. Editors, ask the simple question of the who erroneously assert, through sheer ignorance, that "*plaster is of no benefit to the farmer.*"

They suppose our intelligent and shrewd neighbours, across the lines, would be such arrant fools as to send hundreds of miles, to the Grand River, for ship-loads of plaster yearly, and afterwards transport it all over the Union, if there was not something good in it? Why, Sirs, the American, as well as the native Canadian Farmer, would about as soon think of expecting a crop of wheat without sowing the seed, as to harvest his clover or corn without a liberal dressing of plaster, let the cost be what it might.

But do not let it be conceived, for a moment, that I would wish your readers to understand that plaster will do everything for them: it is in conjunction with other manures, and good husbandry, that its efficacy is most conspicuous and valuable. And in certain cases, where a sufficiency of barn-yard, or vegetable manures, cannot be procured, it will be found a cheap and sure auxiliary. I have used it most successfully on my oat, wheat, and pea crops, as well as upon grass land and corn, especially on the three first, where the soil has been somewhat impoverished by constant grain cropping, without aid from any kind of manure; but I would not advise its application on wheat, where the soil is at all rich, unless you could ensure a rest are the means to force the straw too; a bushel and a half to the acre, upon a seventeenth-acre piece of land I had just taken, for spring wheat. The soil was naturally a good sandy loam, but had been, I thought, over cropped. It was sown broad-cast, and harrowed in with the wheat, clover, and timothy, and the intention was to have given half-a-bushel more per acre, when the wheat was up about three or four inches. This, however, from some cause or other, was not done. It was, nevertheless, obviously plain to my mind that there were fully five bushels of wheat more to the acre where the plaster was applied, as there was part of a land left unplastered, to give the experiment a fair trial; which was made in consequence of the crop being sown three weeks later than it ought, through a delay, the clover-seed not reaching me at the proper time, and of a suspicion entertained by myself of the land being deficient in condition. I speculated upon gaining time, by the plaster forcing both the wheat and clover, immediately they began to germinate; and in truth I was not disappointed. Besides which, I believe that I secured that year my crop of clover and timothy by the operation: at any rate, it was very considerably increased thereby, for it was the trying, hot summer, before alluded to, when eighteen out of twenty farmers lost their clover and timothy crop. But, as the summer turned out, and had I applied another bushel of plaster per acre, I firmly believe that I should have had another five bushels of wheat per acre, in addition to the other five obtained by the first plastering; and my clover and timothy crop (which was very good the following year) increased proportionably.

I have also tried plaster with good effect on both turnips and potatoes. I have seen it, too, applied with considerable advantage on rye and buckwheat, where the soil lacked condition; but on clover and timothy, or general mowing land, I will guarantee

for every bushel and a half of plaster per acre an extra ton of hay, provided the plant is thick on the ground, and the plaster sown immediately vegetation begins to start. For here, I hold, is the secret of plastering with the most advantageous effect; for it is sure to get well washed down to the roots, by the spring showers, by which the roots become quickly stimulated, and a covering of the ground, by the plant, is rapidly obtained, that keeps out the extreme heat of the sun, with which we are often visited, in this climate, in May and the beginning of June. I have been much surprised to hear many farmers talk of not plastering their clover and other crops till half-a-foot or a foot high. Now, from my own experience, and several years' close observation of my neighbours' doings, I feel myself warranted in pronouncing it a most erroneous system. And I dare assert, that any one plastering his wheat crop when a foot high, shall have more straw and rust than he bargained for; and in his clover crop, half a ton, instead of a ton, extra per acre.

Let the simple question be asked, for what purpose is the plaster applied? To stimulate the growth of the plant, most certainly! Is it, then, possible that that stimulant can be applied too soon after the frost is well out of the ground? I think not. And with this observation I will draw this much longer good wishes for the prosperity of your A. G. & Co.; paper.

I am, Messrs. Editors,

Your obedient Servant,

Guelph, Sil. March, 1849.

LEICESTERENSIS.

### THE CULTIVATION OF THE CLOVER PLANT.

MESSRS. EDITORS,—The importance of the clover crop is by no means sufficiently estimated in this country. And as this is about the season when many farmers supply themselves with clover-seed, as well as with that of timothy, for the purpose of seeding down with their wheat and other grain, my object is, to point out to such as have practised the plan of *thin* sowing the immense loss they incur, in a series of years, by so mistaken a practice; and at the same time to represent to them the actual and enormous gain, in a variety of ways, they will realise, by a liberal sowing of clover-seed.

I regret much that I am not able to show at once, for want of correct statistical data, the immense loss the Province annually suffers from the single and erroneous operation of a parsimonious sowing of clover-seed, but at some future day I will endeavour to procure, as near as possible, the number of acres that are seeded down every year to clover; and I am certain the result of this wretchedly imperfect branch of agriculture will actually astound any one whose eyes it may chance to meet.

I am well aware, Sirs, that the quantity of clover-seed *generally* sown by farmers in this country varies from two to five pounds per acre. In England I never sowed less than 18, and here not less than 14 lbs., with from 3 to 5 lbs. of timothy, to the acre. Some people may think this too much, but I will prove that it is not so; for, in the first place, I am convinced that the farmer here, by *thin* sowing, has *one-third, at least*, of his clover-plant thrown out and killed, at the breaking up of the winter, by alternate thawing and freezing, which the plant is subject to in this climate; for I have witnessed with my own eyes ~~the~~ effect, wherever a paucity of seed has been the farmer's practice; but never have I found it so, except where draining was very badly needed, in the course of my observations, where the plant, at the commencement of the winter, was as thick upon the ground as it ought to be. Besides, where can the man be found who has not observed, in walking over his clover-fields, when we have to contend with one of our dry, scorching summers, or, indeed, during the ordinary hot months of every summer, ~~the~~ *need* ~~of a~~ *why*, Sirs, it was but the latter end of last summer that I had the pleasure of spending a day with one of our most respected and zealous farmers—an extensive Durham and South Down breeder, who was lamenting the condition of his flock and herd, through the failure of their pasturage, in consequence of the dry summer; but when I pointed out to him the thinness of the clover plant (second year's growth), and I found, on inquiry, the small quantity of seed, 5 lbs. to the acre, he had sown, and upon making him acquainted with the quantity that I, with many others, usually sow, it was no longer a mystery to him that there was a thin plant, or that the sun and frost, together with his cattle, had made the pasture so bare. And on reflecting upon what I had said, he at once saw the advantage derivable from thick sowing, and allowed that it would be best to practice it in future. But it is not only the bare loss of pasturage and hay that accrues from this miserable system of thin sowing of clover and other grass seeds. Look, for instance, at the incalculable loss in beef, mutton, tallow, butter, cheese, and wool that the farmer individually, and the country collectively sustains, from the mistaken economy of this single operation of husbandry. If a farmer gets but half a *wheat* crop, he is not long considering the extent of his loss without setting about repairing that loss as quickly as he can. And if, then, he gets but half a crop of hay, or half the quantity of

fat mutton, beef, wool, cheese, and butter, for market, from a cause that is almost immediately under his own control, is he not bound to make the exertion; nay, is it not equally his interest in the one case as in the other, to redeem the error as speedily as possible that creates the loss?

There is another evil I would also wish to point out, arising from the sowing of grass seeds, and which every one will, I think, allow to be of equal magnitude with those already named—it is the filth and weeds of one kind or another which takes possession of the soil, that not only chokes, but deteriorates your grain crops to a very considerable extent, and also creates an enormous expense in securing a good, clean tilth for the root and grain crop that has to follow. There is nothing, in my opinion, that will keep a farm so free from weeds, and in good heart, *at so small a cost*, as a thick plant of clover! I speak advisedly on this point, from many years' experience and conviction.

Besides all the advantages and ~~disadvantages~~ <sup>the most im-</sup>portant one to speak upon. It is the rich and highly-prepared state in which the soil is left, by the great mass of fertilising matter deposited by the clover-root, on which the wheat plant delights to luxuriate, previously to and during the filling of the ear; and the consequent increase will be from seven to ten bushels per acre! Let any farmer give the practice a fair trial, and I dare hazard my right hand he will find it as I have stated. Again, from experience, I can affirm, that upon my clover ley I have grown both heavier, finer, and a larger quantity of wheat per acre than I could ever produce in any other way. This is where I sowed not less than 18 lbs. of clover-seed to the acre, with no other grass seeds. But here I would recommend not less than 12 to 15 lbs., with 3 or 4 lbs. of timothy. But if required for market hay, of course considerably less clover, and more timothy-seed must be used. Are not, therefore, Messrs. Editors, the facts I have here stated worthy of a consideration with the farming community of this country? Let me ask, if a ton to a ton and a half of hay to the acre *extra*; one third more, if not double the amount of stock kept, and wool clipped, upon the farm, with at least from 5 to 10 bushels more wheat, as well as other grain in proportion, grown per acre, and a clean, creditable farm, in good condition, *will not almost double the farmer's gains?* Surely it is a system that will recommend itself, when it can be effected at so trifling an outlay, compared with the advantages in every way gained. I am well

aware that there are many who may think this a waste of seed, and an unnecessary outlay, and will say that they can produce a sufficiently thick plant without it; and I am quite willing to allow they may, *provided* they can ensure the *growth of every seed sown*. But when it is taken into consideration that one-fourth, at least, if not one-third of the *seed bought* will never germinate, either from old age or imperfect ripening, and another fourth, at least, may be reckoned upon not getting even a *chance* to grow, from various causes, such as being smothered by stones, lumps of earth, and rubbish of one kind or another; harrowed in too deep, or not harrowed or rolled in at all, as is the fashion with some people; and a part scorched up or frozen out immediately the seed begins to germinate; besides no small proportion being consumed by birds and all kinds of insects, I think I am not stating *too much* when I assert that *one-half*, at least, of the seed sown cannot be considered to come to maturity! Others, again, may say, as indeed I know they do, that they cannot afford, or have not the means to purchase a sufficiency of seed, at that rate. Pray let me ask those who talk thus, that if they deem it sufficiently important to furnish themselves with a proper quantity of seed for their wheat, and all other grain and root crops, why, in the name of all that is good, should they not equally and determinedly make the effort to procure seed for that *plant*, which, in my humble opinion, is equally, with the root crop, the foundation of all good and profitable farming; and more, *far more* sure of remuneration than any other crop grown, provided it is put in in a creditable and husbandman-like manner. But, after all, let us see what this extra outlay of a few pounds more seed will come to. Suppose, for instance, 5 lbs. of clover-seed. at a cost of 10 cents per lb., or six dollars a bushel, which is about the price at the present time, has been sown to the acre, and the farmer wishes even to double that quantity, the additional cost will be the trifling sum of 50 cents; or even suppose the seed to be 12 dollars per bushel, ought the small additional outlay of five shillings currency per acre to be a consideration for a moment, or an impediment with the farmer, to his sowing that quantity, when the immense advantages I have pointed out are to be gained by so doing. How, let me ask, can any man manure and keep his land clean so effectually at so trifling a cost? I well know there are those who have practised this system in this country, from my recommendation, years ago; and whenever I visit, or pass their farms, I invariably see a *very heavy crop of clover*, and nearly *double the quantity of stock* there used to be on the farm; and all other crops heavy in proportion.

I hope, Messrs. Editors, that this truthful statement may be the means of inducing some of my brother farmers to ponder on the subject. And I feel assured, that if they will once begin to reflect, they will not be long before they act! And I hope the consideration of my having written but of facts that have occurred under my own supervision, and of my writing neither for fame nor for profit—my signature being a feigned one—may have its due weight with those who may chance to read this letter. In conclusion, believe me, that the only inducement I have in taking up my pen, is to be of service, if I can, to those in the same profession as myself in this, the country of my adoption. And should you deem this letter worthy a place in your valuable paper, or think my future efforts can be of service to any of your readers, I may be induced to give you my experience in other matters relative to Agriculture. But I promise you that my next letter shall be a much shorter one. With my ardent wishes for the continued success and usefulness of your publication,

I am, Gentlemen, your obedient Servant,

LEICESTERENSIS.

Guelph, 25th February, 1849.

P.S. Enclosed, you will find the subscription and names of 13 new subscribers; and I shall have great pleasure in renewing my exertions to add thereto, as soon as my health and the roads will permit me to get more amongst my neighbours.

I was much pleased at reading, in your first number, a very instructive article from the able pen of that zealous and successful agriculturist, Henry Moyle, Esq., of the Sheep Walk, near Brantford, on the advantages of sheep-farming in connexion with the growing of wheat; and of the great benefits realised by the use of plaster. The subject is, indeed, fraught with invaluable information, which the Canadian farmer will do well to reflect on, and profit by. The immense advantages attending, in a variety of ways, the liberal use of plaster, cannot be too strenuously urged upon the farmers of this country. And I will endeavour, if agreeable to you, to give you a few results of my own experience of its utility in your next number. In the meantime, I would say, let every farmer supply himself with it, almost at any cost or inconvenience, provided it is within his reach. I.

[The two preceding Communications would have appeared in our last, had our matter not been made up before their arrival. We beg our respected Correspondent to accept our warmest thanks for his good wishes and exertions. We shall always be happy to receive Communications from his pen.]

## THE CULTIVATION OF THE SOIL.

The cultivation of the soil is the most noble employment of human hands and thought. It is the most ancient, the most natural, the most beneficial, the most universal, the most healthy, and the most enduring employment, and, while accompanied with a thousand holy associations, leads the mind "through nature up to nature's God." If the "undevout astronomer is mad," how much more so is the undevout cultivator of the soil! God speaks to man in the bursting vegetation, in the whispering foliage, the ripening fruit, and in the "scare and yellow leaf. His voice is in the wind, that brings nature's plaintive music to the ear, in the rushing waterfall, and in the vivid lightning that rends the mountain top.

"Read nature; nature is a friend to truth;  
Nature is Christian, preaches to mankind,  
And bids dead matter aid us in our creed."

Men, at the present day, are beginning to have a more just conception of the cultivation of the soil. Agriculture is become elevated. Science, the handmaid of every vocation, has lent her aid to this department of usefulness, and the farmer has risen from a mere laborer to the practical philosopher. To be a proficient in his art, he must study the laws of vegetation,—a field of boundless investigation,—and so apply his knowledge in assisting nature, as to produce the greatest possible results from the soil which he cultivates. There is abundant exercise for his hands, his head, and his heart; and the great variety of living objects under his care must render his labor the most satisfactory. In a word, agriculture tends to harmoniously develop the whole man.

While the gaiety and bustle of a city life may be more congenial and tempting to the young men, as they become tempered by age and wisdom, almost instinctively turn their thoughts to some pleasant rural retreat, which may furnish them an honest competence, and afford shelter from the shocks of a precarious business. Industry is the price of happiness; and the spirits broken will revive by labor, and gain their wonted elasticity and strength. As the chaste Cowper exclaims of *labor*:—

"Tis the primal curse,  
But softened into merrcy; make the pledge  
Of cheerful days and nights without a groan."

To many, a country residence is irksome and insipid; but such persons little know where true happiness is to be found. They are poorly schooled in self-reliance, who pin their happiness to gay and senseless companions, and can find no pleasure in the cultivation of a little plot of ground, in communion with nature, with books, and a few choice friends. They are the greatest and purest minds who love Nature for her beauties. What is a dreary waste to others, to them is a paradise. Such men as Numa, Cato, Cincinnatus, Bacon, Cowper, and Washington, have blessed Providence that they saw the beauty of his handiwork, and were enabled to read

"The Living PAGE, whose every character  
Delights and gives us wisdom."

[*New England Farmer.* D. W. L.]

Dr. FRANKLIN, in speaking of education, says, "If a man empties his purse into his head, no one can take it from him."

## THE GADFLY IN CATTLE—INQUIRY.

I have a cow which I value highly, and she is troubled with grubs in her back, which I suppose are caused by the gadfly depositing its eggs, in the summer, in the animal's back; and they are now undergoing a change preparatory to their exit and transformation into a fly, to torment anew the cattle. In the present state, they seem to create great uneasiness, the animal constantly licking herself; and although well-fed and sheltered, she falls away in flesh, which I have no doubt is caused wholly by the irritation of these insects.

Now, what I want to know is, what is the remedy? Can any thing be employed which will destroy these grubs, and do no injury to the cow?

Feb. 18.

G. R. P.

REMARKS.—These grubs are undoubtedly the larvæ of the gadfly, (*astrus bovis*.) This fly, which somewhat resembles a small bumblebee, deposits its eggs in the skin of the backs of cattle during the latter part of the summer; and these worms or grubs, live during winter in or under the skin, causing bunches or lumps easily felt by the hand outside, and, when at all numerous, injuring the health and growth of the animal. Each of these bunches will be found to have a small opening, to admit air for the insect, or to allow matter to escape. We know of no way to destroy these vermin but to extract them by hand, squeezing them with the thumb and finger, and aiding their exit with the point of a knife. When the orifice is well open, a drop of turpentine will do the work more easily. In no case should they be allowed to remain long after their presence is discovered.—[Editor of Ohio Cultivator.]

## HINTS TO DAIRYMEN.

Four years ago the number of cows milked in the State of New York was within a small fraction of a million. It now considerably exceeds even that high figure; for the dairy business has been greatly extended since the census of 1815. No branch of rural industry presents greater facilities for improving a farm, for increasing its capacity to keep more cows and enlarge the annual receipts of the husbandman. By carefully saving all the manure, both solid and liquid, made by domestic animals, it will be easy to raise an immense amount of excellent food for cows, on a comparatively small surface. For this purpose, corn, carrots, potatoes, pumpkins, clover and herd's grass are among the most available crops which we have seen cultivated.

The dairyman, by uniting skilful tillage with grazing, will experience little difficulty in feeding a much larger number of cows than is now generally kept in New York and Ohio. Of course, he will need more funds to purchase more cows, and more help to milk and take care of them. Many, however, who do not lack the wherewith to procure either labor or cows, fail to see their way clear, how to raise six or eight tons of sweet nutritious forage an acre, by planting corn quite thick in drills for that purpose. Like all other farming operations, this must be practiced repeatedly to be well understood. We have seen some failures, but more cases of the most satisfactory results. There is some trouble,

particularly in wet weather, in curing a luxuriant growth of green maize. Being cut when most succulent, just as the kernels begin to form when the whole plant abounds in saccharine matter, it needs to be exposed to the sun, turned over, like thick new mown grass, and thereafter to be bound in small bundles and set up to make in small bunches or stooks. The Rochester City Milk Company, and other milk-producing establishments with which we have been acquainted, have found the raising this kind of forage as well as carrots, profitable. At the South green rye, oats and peas are fed to mules, horses and cows. On good land, the expense of growing additional feed for dairy cows, i. e. something beside common pastures and meadows, is much less than one who has never tried it would suppose.

A top-dressing of lime and gypsum spread over pastures and meadows in the spring of the year will often impart new vigor to the grass, and add greatly to its yield for the season, if not longer. Sometimes more grass seed should be sown, and the ground well scarified with the harrow. Ashes are particularly valuable to scatter over all fields where a good crop of grass is desired. Swamp muck sweetened with caustic lime in the form of compost, is generally worth more than it will cost, to be used as a top-dressing on meadows and pastures. Applied to hood crops it is also valuable.

As first rate dairy cows are always in demand at fair prices, every farmer should be careful to raise all calves, particularly females, from a family remarkable for good milkers. In this way the dairies of the country will improve rapidly. Much depends on the keep of calves and heifers, and the way in which the latter are treated during the two first years they are milked, in fixing their productive value for dairy purposes. Perfect regularity in feeding, uniform kindness and gentleness, as well as milking reasonably fast and quite clean, are matters of practical importance. A young cow which is much inclined to elaborate a large flow of milk will secrete more, if it be drawn three times in twenty-four hours, and at eight hours between each milking than she would if milked but twice a day. Salt cows regularly, or have it under a shed where they may eat what they will, after having been restricted a little, till accustomed to a full supply by degrees. Have your pastures as near the milk house as practicable that your herd be not taxed with a long walk to and from their fields to the yard or cow house.—[Gen. Farmer.

EXPERIMENT IN WIRE FENCE MAKING.

BY D. KINGMAN.

Messrs. Editors,—Believing that my brother farmers feel an interest in whatever experiments others may try, whether useful or otherwise in themselves considered,—especially if facts are stated, so that they can practice, throw away, or improve upon them, as their judgments may direct—I have been induced to send you my experience in making a wire fence.

During the last fall I constructed 104 rods of wire fence in the following manner: I placed red cedar posts one rod apart, the posts being sawed about 3½ inches square at the bottom, and 3½ by 2 inches at

the top, and set firmly in the ground to the depth of 2½ feet. I then bored holes through the posts with a ½ inch bit—the upper one 4½ feet from the ground, and then 9, 8½, 7½ and 6 inches below, using five wires. Five inches below the lower wire I placed a board fourteen inches wide, (with a short post in the centre to which I nailed the board,) which comes near enough to the ground. I then drew the wires through the posts and strained them by means of a lever, one end of which I stuck into the ground. I then looped the end of the wire around the lever near the ground, and while one is drawing upon the top of the lever, I plug the hole tight with pins of red cedar, previously prepared. I usually strained the wires 16 or 20 rods at a time, then spliced the wires by looping and twisting the ends, and proceeded in like manner again. After the wires are in and the boards on, I take pieces of wire of the right length and make one end fast to the upper wire, and then wind it round the wires below till I come to the board through which I bore a hole and fasten the lower end of the wire; three of these wires between each two posts, thus fastening it all together.

The upper and lower wires are No. 10, and the others No. 11. I bought my wire of Messrs. Pratt and Co., of Buffalo, at \$7,50 per hundred. The five wires weighed 355 pounds. The wire that I used to weave in up and down was No. 16, and cost 10 cents per pound; it took 25 pounds. My posts I bought in the log (pretty large ones,) at \$12 per cord; one cord made 105 posts, the number used. It took 2000 feet of hemlock boards, which I reckon at \$7 a thousand. The saving of the posts was \$2,25. The cost foots up as follows:

355 pounds of wire, at 7½ cents, . . .	\$26,02
25 pounds of wire, at 10 cents, . . .	2,50
One cord red cedar posts, . . . . .	12,00
Sawing posts, . . . . .	2,25

Making the cost of materials, . . . . . \$35,77

Which being divided by 104, the number of rods of fence made, gives 53½ cents as the cost per rod—aside from nails of which I kept no account.

Some of your numerous readers may be anxious to know whether such fence will answer the purpose in all cases. I can only say that mine is a road fence, and that when it was built, there was a good crop of pumpkins lying in the field along side, where they grew, and that notwithstanding many cattle and hogs made the attempt at them, they did not succeed: and my short experience goes far to convince me that no cattle, hogs or fowls will go over or through it.

Ridgeway, N. Y., January, 1849.—[Gen. Farmer.

THE NEXT FAIR of the N. Y. State Ag. Society, as we have heretofore stated, is to be held in Syracuse, on the 11th, 12th and 13th of September next. The amount of premiums offered is about six thousand dollars. Now is the time for the farmers of Western and Central New York to commence their preparations to add to the interest of the show, and win their prizes. We shall endeavour to publish the premium list, or a synopsis of it, in our next. It can be obtained in pamphlet form, we presume, by addressing the Secretary, B. P. JOHNSON, Esq., of Albany.—[Genesee Farmer.

## PLASTER, OR GYPSUM.

Many cultivators have expressed great surprise that gypsum, or Plaster of Paris, should operate favourably as a manure on a piece of land for a number of years, and then cease to have any effect. But we do not regard this as at all surprising, for in the first place we must consider that the soil is deficient in the elements of which plaster is composed, else it would not operate as a fertilizer, or a stimulant; and by applying it for several years this deficiency is supplied, and further applications cease to produce any beneficial effect.

As plaster is composed of sulphate of lime, or a combination of sulphur and lime, these ingredients may be taken up into the plants, as they constitute a part of most plants, though a small part; and this may account for a small quantity of plaster producing so powerful effects in the production of crops. For although the amount of lime and sulphur is generally very small in plants, yet that small amount is absolutely necessary in their composition.

When the soil has become saturated, or sufficiently supplied with plaster, and no further applications are made for several years, the plaster may become used up, in some measure, either by cultivated crops, or the spontaneous production of weeds, grasses, bushes, &c.: and then a new application may again prove to be beneficial. Or plaster may have a valuable effect on the soil, in preparing it to supply food for the plants, and after a few years this favourable effect may cease until a further chemical change takes place in the soil, which may, after a while, become a slow process, so that years will pass away before plaster will again act as a manure.

We have in nature a great many analogous cases. Sand may be added to a clayey soil until there is sand enough, and it ceases to be useful; but after a long course of cropping with corn, herdsgrass, red-top, and small grains, a large amount of siliceous sand is taken up in solution, and a new addition of sand would be beneficial. An animal may be in great want of salt, or some other condiment, and it may be given until it is no longer useful. After a while, the condition of the animal may require another supply.

These remarks may explain some of the facts offered in the following interesting article from the Dollar Newspaper:—

## GYPSUM AND CLOVER.

For the last seventeen years, my attention has, to some extent, been directed to the peculiarity of the different soils of this and the adjoining counties of Maryland. Much attention has been bestowed on the various modes of improving the soil, more particularly by the use of clover and plaster of Paris. This having been the favourite system for the last twenty years, and indeed long before that time, no other course was considered at all reasonable. I well recollect seeing in nearly every part of our country the most luxuriant fields of clover, rising at least two feet or more from the surface of the land, therefore furnishing the soil with a most splendid covering, sufficient, when ploughed under, to enrich the soil, to make it produce the finest growth of cotton, corn, wheat, or tobacco. Since the time first alluded to, there has been a very general complaint that our lands were not half so valuable as they were

first supposed to be, in consequence of our fields not possessing the capacity of yielding their former crop of clover. One man asks another why this should be so. What has done all this mischief? And, strange to say, no two individuals can agree. Well, now, as we have neither the Ural Mountains of Russia nor the mountains of New Mexico or California to resort to, to enrich our soils, let us be content to use such means as may be within our power to effect this most desirable object.

It is a fact not to be questioned, that land which once produced fine crops of clover, when accompanied with gypsum or plaster, will now scarcely produce any; at least, will not when clover and plaster have been regularly used for seven or eight years. Now, my principal object is to learn, why is all this? Is the land tired of cultivation? Or is it that the gypsum is adulterated, and its properties useless to the application of clover? I think not. I believe too much has been infused into the earth. I cannot suppose the clover can in any way be detrimental to the soil. It must be the bad effects of the plaster; for who doubts for a moment that its effects are various, and there are principles which have been discovered, by which its influence has been traced? Some salutary correction is needed; but what that remedy is, I am at a loss to conjecture. He alone who is familiar with chemistry, and can analyze the soil, can point out the constituents necessary to correct the evil. There is, to my mind, a most mysterious agency in plaster as well as lime, and he who can explain it is a benefactor. Can its advantages or disadvantages be owing to the chemical character of the soil, or the kind and quality thereon produced? We not unfrequently complain that the land is worthless, it is exhausted; and verily we cannot explain what we mean. For myself, I plead ignorance. I will state, however, a few circumstances which have come under my personal observation. I discontinued the use of gypsum on my clover land for nearly five years, believing, when I again commenced its use, that the best results would accompany the experiment; and so they turned out. My most sanguine expectations have been more than realized.

I sowed, this season, (1848,) forty bushels of clover seed, and the most competent judges have affirmed that it has never fallen to their lot to witness a more luxuriant crop of young clover, the greater part of which was bedded, which is very unusual. The entire field was well plastered, and when a row happened to escape the action of the plaster, the clover was small and puny. Now, I will venture a prediction, should plaster be regularly applied, say for the next five years, that this very land will not produce clover sufficient to make even good grazing. It must now be admitted that I have opened a wide and extended field of inquiry, on a subject which is entitled to at least some consideration from an intelligent agricultural community, without attempting to explain the properties of the mineral mostly used, or without any attempt at analysis of the different soils we have to cultivate, for the best reason—my experience in a theoretical point of view does not justify it. What I have obtained has been from long experience, certainly not from theory. What we require is science, fully developed through chemistry; and not till then can the occupation of the farmer

rise to that elevated position so necessary for him to occupy, and which it should be his object to acquire.

**INFORMATION FOR FARMERS ABOUT PLANK ROADS.**

Scientific experiments have proved that the same power required to move one ton, in a common lumber waggon on a level earth road, will move the same waggon with a load of 4 and 1-3 tons, on a level wood surface.

One ton is the average practical load for a two horse team over a tolerably level common road, it follows then that the same team can with equal ease draw a load of 4 and 1-3 tons, on a properly graded plank road. Practical results have proved this to be true, because 4 tons now constitute the usual load for a two horse team on all plank roads, where the inequalities of the land's surface have been levelled to practical grades. Waggons however, to bear such increased weight, should be made some stronger than they are commonly made for ordinary use—but yet a common waggon will bear a much greater weight on a plank than on a common road, for the reason that the pressure is direct and uniform on a plank road, whereas on a common road, by reason of ruts and inequalities of surface, the waggon is subjected to severe trials by oblique and lateral strains. Both waggon and harness in constant use on a plank road by means of this steady action and diminished friction, will last longer than on ordinary public roads.

Suppose a farmer living some ten miles out of Detroit has 140 bushels of wheat to take to market, in his waggon, over common roads in the condition in which they generally are. He would not ordinarily carry more than 35 bushels at a load—the weight of which at 60 lbs the bushel is 2,100 lbs; one would occupy so much time that he could only make one trip a day, and then he would have to make four trips and consume four days in conveying his 140 bushels to market—but if he could travel on a plank road he could carry the whole 140 bushels at one load; the weight of the whole at 60 lbs. the bushel is 4 tons and 400 lbs. How then does the account stand? Four trips over a common road will cost as follows: 4 days for himself and team at \$1.50 a day, \$6 00

One trip over a plank road, in one day is \$1.50.  
Toll both ways at 2 cents per mile is \$1.90.  
Difference in favour of plank road is \$4 10.

The first impression is very strong against being taxed for travelling to market and great hostility is naturally felt against the conversion of a free into a toll road, but this arises from not understanding the advantages of a Plank Road.

The above calculation shows that the payment of the 40 cents for toll is not in fact a tax out of pocket but the cost of a privilege by which \$4 10 are saved. Money saved, is money made—and in the case above stated, the farmer takes 40 cents out of his pocket and puts \$4 50 in the place of it.

In the above calculation no notice is taken of the cost of strengthening the waggon because such cost is more than made up by the saving in blacksmiths and other mechanics' bills for repairing damages which continually accrue on common roads and in

the greater duration of waggon and harness.—[Commercial Bulletin.

**DRAINING** low lands will contribute to promote health and profit. Generally speaking, our wet and marshy lands are the richest in organic matters, and become the most profitable to the owner, when thoroughly drained.—[Buel.

**FACTS FOR AGRICULTURISTS.**—The exports of broadstuffs from the United States, Sept. 1 to Jan. 1, 1849, as compared with the same period ending Jan. 1, 1848, are as follows:

	Flour, bbls.	Meal, bbls.	Wheat, bu.	Corn, bu.
1848,	95,767	52,715	18,004	606,301
1849,	638,994	45,193	854,005	5,078,712
Increase,	543,227		836,001	4,472,411

**COUGH IN HORSES.**—In all disorders accompanied by a cough, the true cause should be ascertained. Sometimes the cough is only a consequence of a chronic or seated disease, as is the case in heaves, &c. At other times it is symptomatic of recent inflammation of the mucuous membranes of the head and glands about the throat. We have found salt, given freely, together with an occasional dose of saltpetre, to be an excellent remedy in cases where a horse has had the horse-ail. and the cough holds on after the original disease seems to have gone. For a dry, husky cough, not attended with the heaves, green or laxative food, such as roots, or mashes of scalded bran, in which is put the pulverized root of elecampane and lavage, has been found beneficial. If there should be found indications of heaves, put a spoonful of ginger, once per day, in his provender, and allow him to drink freely of lime water. Horses that are kept on musty hay will very soon begin to cough. The best remedy for musty hay cough is, to change the diet to good, sweet clover.—[Maine Farmer.

**CLIPPING HORSES.**—Observing a paragraph relative to clipping horses, I beg to state that I have lately been informed that the process injures the constitution of the horse in the long run, causing the animal to wear out sooner, notwithstanding every care may have been taken with him at the time of the operation and subsequently; although it is conceded that at the time of clipping, the horse is thereby enabled to perform his work more easily, and also thrives better.—[Agricultural Gazette.

**CHOKED CATTLE.**—*Remedy.*—Take any kind of tube, say an elder or quill, and fill it with gun-powder. Open the mouth, hold out the tongue, put the tube as far down as convenient, and blow the powder from the tube into the throat. It will relax the pipe and suffer the obstruction to pass on. Try it. D.S. BUFFINGTON. Hinmanville, March, 1849.

**PLOWING BY STEAM.**—A steam plow has been tried on a farm near Stratford, in England, by stationary engines at the extremities of the field, and the experiment is said to have been satisfactory. The engine is ten feet by six in bulk, portable with a pair of horses, and may be used for plowing, threshing, or for any purpose where power of the kind is required.

## Horticulture.

### HORTICULTURAL SOCIETY.

We congratulate our readers on the formation of an *Horticultural Society* in this City. When the rapid progress of Upper Canada in population and wealth is considered, the desirableness of such an Institution, centrally situated, will at once become apparent. Horticulture is the precursor and natural ally of Agriculture. Both are dependent upon the soil, and are, in common, governed by the same great principles or natural laws. Hence, we feel anxious that our publication should, as far as practicable, embrace both. While Agriculture furnishes the more common and necessary-food for man, and is in almost all countries the principal source of wealth, Horticulture presents an endless variety of other productions, in vegetables, fruits, and flowers, which, while many of them minister largely to his physical comforts and wants, others more directly tend to refresh the spirit, and reform and elevate the taste. We confidently anticipate a large share of public patronage to this Society, as soon as its merits become known, and shall always be happy to register its successful proceedings. The price of members' tickets has been judiciously placed low, with a view to extend the gratifications and benefits of the three annual Exhibitions, which are intended to be held as widely as possible. Gentlemen's tickets, 5s; Ladies' do. 2s. 6d. The following are the office-bearers for the ensuing year:

*Patron*—The Chief Justice.

*President*—Mr. Justice Dyer.

*Vice-Presidents*—Mr. Justice Sullivan, Mr. Sheriff Jarvis, and Mr. Wm. Baldwin.

*Directors*—Mr. George Allan, Mr. George Buckland, Dr. W. Nicol, Mr. H. Y. Hind, and Mr. Collier.

*Treasurer*— \* \* \*

*Secretary*—Professor Croft, King's College

### BRIEF HINTS ON SOWING AND RAISING CULINARY VEGETABLES.

Most kinds of seeds grow more freely if soaked in soft water for 12 to 48 hours before sowing. Seeds of a hard nature, such as blood-beet, mangel wurtzel, nasturtium, &c., often fail from want of attention to this circumstance. Rolling the ground, after sowing, is very beneficial, and will assist in making the seeds vegetate more freely. Where a roller is not at hand, it may be done with the back of a spade.

*Kidney, or French Beans*, may be planted any time this month (May), in drills two inches deep; the beans two inches from each other; the drills about 18 inches apart. If a regular succession is required, sow a few every two weeks, from the 1st of May to the 1st of July.

*Broad, or Windsor Beans*, do not succeed well in this climate, the summer heat coming on them before they are podded, which causes the blossoms to drop off. The best soil to grow them in is a rich, stiff clay, and on a northern border, shaded from the midday sun; sow in drills two feet apart, the drills two inches deep, and the seeds 3 inches asunder.

*Blood-Beet, Long, and Turnip* may be sown in a good, rich, deep soil, about the first week of May. Draw drills about a foot apart and one inch deep; sow moderately thick; when the plants are up strong, thin them out to the distance of six inches from each other in the rows.

*Broccoli and Cauliflower* require a deep, rich soil, of a clayey nature, and highly manured. To produce early cauliflower, or broccoli the seed ought to be sown in a hot-bed, early in March, when the plants are quite strong and hardy. They may be planted out in the garden, about the middle of May. Plant in rows, two feet square. The only kinds that will do well in this climate are the Early London Cauliflower, and Purple Cape Broccoli.

*Cabbage*, both early and late, may be sown any time in May. The best situation for raising the plants is a rich, damp piece of ground, partially shaded. Seed sown in a situation of this kind is not so subject to be destroyed by the black flea. When the plants are strong, they may be planted out in rows, and managed the same as directed for cauliflower. The best kinds for summer use are the Early York, Battersea, and Vannack; for winter use the Drumhead, Large Bergen, and Flat Dutch.

*Cucumbers* may be sown in the open ground any time in May. They require a good, rich soil. Sow in hills, four feet apart, leaving only three plants on each hill. The cucumber and melon vines are liable to be attacked by a yellow fly or bug. Soot, charcoal dust, or soap suds, applied to the plants, will assist in keeping them off.

*Musk and Water Melons* may also be sown at the same time, taking care to sow the different kinds a good distance apart from each other, as they are apt to mix. Plant in hills, six feet square, leaving only three plants on each hill. When the plants have grown about six inches, stop or pinch out the top of the leading shoot; which will make the plants throw out lateral shoots, on which you may expect to have fruit.

*Carrots*.—The most suitable ground for growing carrots is a deep, rich soil, that has been well manured the previous year. Sow any time this month, in drills one foot apart, and one inch deep. When the carrots are up, thin them out, four inches apart, and keep the ground free from weeds. The kinds that are generally sown in the garden are, the Early Horn, Long Orange, and Red Surrey; for field culture the White Belgian and Altringham. The produce of one acre of field carrots, when properly cultivated, may be rated at from 500 to 800 bushels. In cultivating them on the field system, the drills ought to be two feet apart, and the carrots thinned out, at least, twelve inches asunder.

*Celery*.—This vegetable is much esteemed as a salad. It requires considerable attention to grow it to perfection. To have early celery the seed requires to be sown in a hot-bed, in the month of

March; for winter celery, the seed may be sown in the open ground, any time before the middle of May. Sow on a small bed of fine, rich earth; beat the bed down with the back of the spade; sift a little fine earth over the seed; shade the bed with a mat or board until the plants begin to appear. Celery plants ought to be pricked out into a nursery-bed as soon as they are two or three inches high. Cut their roots and tops a little, before planting; water them well, and shade them from the sun until they begin to grow. Let them remain in the nursery-bed about one month, after which they will be fit to transplant into the trenches. The best sort of soil to grow celery in is a deep, rich loam, and in an open part of the garden. Mark out the trenches a foot wide, and three feet between each trench. Dig the trenches one foot deep, laying the earth equally on each side. Put three or four inches deep of well rotted manure into the bottom of each trench; put a little of the surface-soil over the manure; dig it well up, incorporating the soil well with the manure; dress the plants, by cutting off the long leaves and the ends of the roots. Plant in single rows, along the centre of each trench, allowing six inches between each plant. Water them well, and shade them from the sun until the plants begin to grow. In earthing up celery, great care should be taken not to cover the heart of the plants.

*Lettuce* is easily raised from seed, which may be sown from the 1st of April to the end of June. If good headed lettuce is wanted, the plants should be transplanted out on a rich piece of ground, in drills, 12 inches apart, and six inches in the drill. The Malta, Green Coss, and Victoria Cabbage are the most suitable kinds to sow, as they head without tying up.

*Onions*.—The yellow and large red are the best for a general crop. The ground for onions should be well prepared, by digging in plenty of well-rotted manure. The seed may be sown from the middle of April to the middle of May. Sow in drills, one inch deep and 12 inches apart. When the young onions are up, thin them out to the distance of three inches apart.

*Parsnips* require a deep, rich soil. Sow in drills, one inch deep, and the drills 15 inches apart. Cultivate the same as directed for carrots.

*Radishes* should not be sown in the open air sooner than the middle of May. They require a deep, sandy soil, that has been well cultivated and manured the previous year.

*Rhubarb* is a perennial plant, and may be raised from seed. Sow about the middle of May. When the plants are one year old, they should be transplanted into a very deep, rich soil, in rows three feet apart. The foot-stalks of the leaves should not be cut until the plants are two years old.

*Salsify* is an excellent vegetable. The roots, when properly cooked, resemble oysters in flavour. The seed may be sown from the 1st of April to the middle of May. They require the same kind of soil and cultivation as directed for carrots.

*Spinach* is an useful vegetable, and very hardy. Seed sown in the month of September will stand over the winter, and come in for early greens in the

spring. For summer use, seed of round spinach may be sown from May to July. It requires a rich soil. Sow in drills, one foot apart.

*Tomatos* are much cultivated for their fruit. To have them early, the seed should be sown in a hot-bed, early in March. When the plants are a good size, and the spring frosts are over, plant them out in the garden; let the plants be four feet apart. Plant on a south border, near a fence and they will produce abundance of fruit.

*Turnips*.—The best sort for the garden is the Early White Stone, which may be sown from the middle of May to the end of August. Sow in drills, fifteen inches apart, and thin out the plants to eight inches asunder. Field Turnips, such as Swedish, Aberdeen, Yellow, &c., may be sown in drills, two feet apart, about the middle of May. White Globe, Flat Norfolk, and Red Round will do to sow about the middle of July. Turnips are very subject to be eaten by the black flea. A good remedy is to steep the seed one night in train oil. This will greatly promote germination, and the growth of the young plants.

JAMES FLEMING.

Yonge Street Nursery, April 24, 1849.

## HORTICULTURE.

BY MRS. LYDIA H. SIGOURNEY.

If the admiration of the beautiful things of nature has a tendency to soften and refine the character, the culture of them has a still more powerful and abiding influence. It takes the form of an affection. The seed which we have nursed, the tree of our planting, under whose shade we sit with delight, are to us as living, loving friends. In proportion to the care we have bestowed on them is the warmth of our regard. They are also gentle and persuasive teachers of His goodness who causeth the sun to shine and the dew to distil; who forgets not the tender buried vine amid the snows and ice of winter, but bringeth forth the root, long hidden from the eye of man, into vernal splendor or autumnal fruitage.

The lessons learned among the works of nature are of peculiar value in the present age. The restlessness and din of the railroad principles, which pervade its operations, and the spirit of accumulation which threatens to corrode every generous sensibility, are modified by the sweet friendship of the quiet plants. The toil, the hurry, the speculation, the sudden reverse which marks our own times, beyond any that have preceded them, render it particularly salutary for us to heed the admonition of our Saviour, and take instruction from the lilies of the field, those peaceful denizens of the bounty of heaven.

Horticulture has been pronounced, by medical men, as salutary to heal h, and to cheerfulness of spirits; and it would seem that this theory might be sustained, by the placid and happy countenances of those who use it as a relaxation from the excitement of business, or the exhaustion of study. And if he who devotes his leisure to the culture of the works of nature benefits himself, he who beautifies a garden for the eye of the community is surely a public benefactor. He instils into the bosom of the man of the world, panting with the gold fever, gentle thoughts,

which do good like a medicine. He cheers the desponding invalid, and makes the eye of the child brighten with a more intense happiness. He furnishes pure aliment for that taste which refines character and multiplies simple pleasures. To those who earn their substance by laboring on his grounds, he stands in the light of a benefactor. The kind of industry which he promotes is favourable to simplicity and virtue. With one of the sweetest poets of our mother land, we may say,—

“Praise to the sturdy spade,  
And patient plough, and shepherd’s simple crook;  
And let the light mechanic’s tool be hailed  
With honour, which, encasing, by the power  
Of long companionship, the labourer’s hand,  
Cut off that hand, with all its world of nerves,  
From a too busy commerce with the heart.”

—Lady’s Book.

### USES OF THE BLACK CURRANT.

The Black English Currant is represented to have qualities that entitle it to extensive propagation. A kind of wine has been manufactured from it, which is celebrated for its medicinal properties. The Boston Medical Examiner, quoted by Fessenden, said of this wine, “It has all the good properties of the best Port, without any of its heating or constipating effects. We could name several instances, where, in great debility and exhaustion, after protracted and severe fever, and from other causes, nothing else could be thought of or taken with pleasure or advantage, in which this wine proved grateful to the palate, and most friendly to the stomach; in which, indeed, it was the principal means of conducting the patient to health and strength. Its exhibition has been attended with remarkable success in the early stages of cholera and dysentery; and again in the later stages of these diseases, after the symptoms of inflammation or febrile excitement had ceased. It has been strikingly remedial in the low stages of typhoid and bilious fever. We have not room to enumerate many other morbid affections, in which this wine has proved useful. In sore throat, it has for many years, been considered almost a specific remedy.”

These opinions are confirmed by other testimony. Kenrick, in his American Orchardist, says, “From the black currant a jelly is made, of considerable medicinal efficacy: a wine is also made from them, which possesses far superior medicinal virtues to port wine. The jelly has been highly recommended for disorders of the throat, and as a necessary article in the stores of ships sailing to the East Indies. A liquor is prepared from the black currant, which, Mr. Forsyth states, is possessed of great medicinal efficacy in obstinate coughs, &c. The currants for this purpose are bruised, and, being placed in a jar, whiskey or any other species of alcohol is poured over them; the jar is then covered close for a fortnight; after this, the liquor is strained and bottled.”

The jelly from the black currant is further described as being fine for the table, and the wine as of peculiar flavour, which, to those long accustomed to its use, is delectable.

A friend of ours, who has many years made use of this currant in his family, as a remedy for some

of the above-named infections, especially for diarrhoea, fully concurs in the foregoing estimate of its value. He considers it also excellent as a preserve. —[Michigan Farmer.

### ON THE CULTIVATION OF THE STRAWBERRY.

Persons who expend no scientific knowledge or care on their gardens are constantly complaining of failures with their strawberries. The wonder really is, not that they should often be disappointed, but that they should ever succeed.—Were it not for the *vis medicatrix natura*, which so often helps men out of their scrapes and blunders, in spite of their ignorance, many gardens would produce no fruit at all. The treatment of the strawberry is often at variance with every physiological principle. The plants are the runners of old stools, which have remained in the same spot for many years; the beds are allowed to be smothered with weeds, after the crop is gathered, until, in the autumn, a scythe mows off the whole produce—weeds, leaves, and sometimes crowns, in one promiscuous heap. In this *saave qui perit* style, the bed is left to the chances of another year, and a dressing of dung completes the annual process. It cannot be wondered at, that after this summary treatment the crop should be poor in quantity and quality, contrasted, indeed, in every respect with that of a more thoughtful cultivation. Autumn is the time to clear off all runners and weeds from old beds, and to make new ones; that is, if weeds have been allowed to grow, and runners to accumulate, neither of which will be the case in a well managed garden. However, many amateurs sadly neglect these common-place matters, in attending dahlias and other fancy things; and in their case the only remedy is, to clear the plantations at once. Carefully remove all runners, and where the plants are too thick, some may be dug up, or portions of the crown taken away, to allow ingress to the sun and air.

Do not interfere with the leaves, unless you find any withered, when they can be of no further use. On the healthiness and long-continuance of the foliage this year, will depend the strength and fruitfulness of your plants next season. We explained the reason of this in a recent paper, “On Asparagus,” and need not go over the same ground again. Another reason why leaves should be allowed to remain on the strawberry plants was stated by a writer in the “Gardeners’ Chronicle,” some time back; they preserve the incipient fruit-buds from frost during the winter. It has been found that very severe winters are followed by failures in strawberries, caused by the attacks of frost on the crowns; consequently, the protection of the foliage may be a matter of importance. A good dressing of rotten manure may be supplied, either laid on the surface, or slightly forked in. The roots of the plant must on no account be interfered with. In making new beds, let the ground be trenched to the depth of two feet, at least, and well mixed with rotten dung. When the soil is settled, put down

plants, in rows, three feet apart, and half-a-yard distant from each other. Nothing is gained, but much is lost by close planting. There should be room to walk between the rows, and it will be seen that three feet is scarcely enough to allow this. Each plant should be isolated, if the finest produce is wanted. Light, air, and solar heat will thus be supplied in the largest possible quantities, with the most beneficial results. The plants themselves should have been trained in a nursery bed, early in the season; and if they have been so treated, they will now be a good size. Remove them with balls of earth, so as to disturb their growth as little as possible. But if you have made no provision for new plantations, you must take up with a trowel the strongest of your self-rooted plants from the old beds. Fix every plant firmly, and your work is done, unless you like to put a little short litter, to protect them from the frost. Thus treated, a bed of strawberries will bear a little fruit next year, and a full crop the year after. Two full crops is as much as should be expected from any strawberry plant, and after that the beds should be destroyed. By making a fresh plantation every year, you will always be supplied, and not run the risk of being laughed at for expecting fruit from plants which, in the common course of events, have become barren.—[Gardeners' Chronicle.

#### CULTIVATION OF MELONS.

There are many varieties of the melon (*Cucumis melo*), of which the best may be considered as "Skullman's Nettled," the "Green-fleshed Citron," the "Green-fleshed Nutmeg," the "Large Yellow Cantaloup," the "Green-fleshed Persian," the "Musk-scented," and the "Pineapple." Of these, the first three are generally cultivated throughout the United States, and abound in our markets for at least three months in the year. It is already known to many of our readers that this city is greatly indebted for this luxury to several families of the name of Bergen, who annually cultivate some hundred acres, near Govanus, Long Island, and at Shrewsbury, New Jersey. Although not a sure crop, we have been informed that an acre of their land, well tilled, will yield from \$100 to \$400 worth of melons in a season.

The soil best suited for the melon, in open culture, is a light, sandy loam, similar to that of the southern end of Long Island and the adjacent shores of New Jersey. The ground should be ploughed or spaded, from twelve to eighteen inches deep, and well pulverized with a harrow or rake. The proper season for sowing is at the time the peach tree is in bloom; for if you planted earlier, there would be fear of their being cut off by frosts. The seeds may be sown in broad hills, 18 inches in diameter, and 5 feet apart from centre to centre, each supplied with a shovelful of well-rotted stable or barn-yard manure. In order to guard against accidents, at least 20 seeds should be scattered in a hill, which should be covered with finely-pulverized earth at about the same depth as in planting Indian corn.

Soon after the plants are up, and begin to show their second leaves, they may be weeded with a hoe, and a portion of them thinned out, still leaving enough to guard against accidents or the depredation of worms. In the course of the summer, before the vines begin to spread, two furrows should be run between the rows, with a cultivator or plough, turning the earth directly from the plants, which should be freed of weeds, and reduced in

number to five or six in each hill. A few weeks later, a second ploughing should take place, turning the earth towards the vine, when a broad, flat hill should be formed slightly hollowing in the middle, so as to receive and retain the water supplied by irrigation or from the fall of rains. After this, no farther attention is required except in keeping down the weeds, and in guarding against worms.—[American Agriculturist.

#### CULTIVATION OF CELERY.

The kinds of celery (*Apium graveolens dulce*) preferable for general culture, are those known by gardeners under the name of "Common Upright Italian," "Large Hollow Upright," and the "Solid-stalked Upright," all of which may be raised from seeds, sown in the middle and northern states, with slight forcing, from March till the first or second week in May. One ounce of seed is sufficient for 10,000 plants, and may be sown in drills 6 inches apart, in hot beds, or rich mellow borders, after the manner of cabbages, watering moderately in dry weather both before and after it is up. As soon as the plants are 2 or 3 inches high, they may be transplanted 3 or 4 inches apart, in a sunny situation, into temporary beds, formed of old hot-bed dung, or well-rotted stable manure, mixed with one-fourth of its bulk of finely pulverized earth. These beds should be laid 6 or 7 inches thick on a plot of ground having a surface made hard by compression, or one that has not been broken by the spade or the plough, in order to prevent the pushing of tap roots, and thereby prevent the celery from running to seed, before the following spring. The nursing plants should be watered daily until they have taken root, and as often afterwards as the dryness of the weather may require.

When the plants have acquired a height of 6 or 8 inches, they may be removed, in monthly succession from June until September, into a soil rather moist, and rich in vegetable mould, but not rank from new or unrotted dung. Previous to the last transplanting, the ground should be thoroughly worked with the spade or plough, to a depth of 12 or 18 inches, according to the nature of the soil, and then divided into trenches 12 inches deep, 18 inches wide, and 4 feet apart from centre to centre. The trenches should next be filled, 9 inches deep, with a compost of well-rotted dung, mixed with one-fourth of its bulk of strong sandy loam. The plants should be taken up from the nursery beds, with as much soil as will conveniently adhere to their roots, and after removing the side shoots from the stems, they may be set, by hand, 9 or 10 inches apart in the centre of each trench, watering them as often as the weather may require, until they are ready to be earthed up.

As the plants in the trenches rise from 10 to 15 inches high, you may commence "landing," or "earthing," them up for blanching; but never do this while they are wet. In the first two mouldings, the earth should be sparingly raised to the stems, forming a slight ridge on each side of the rows, and leaving a hollow to receive the full benefit of the waterings or rain. When the plants become strong enough to bear a mould 6 inches in height, the earth may be drawn up equally on each side, preventing it as much as possible from falling

into the hearts of the plants by keeping closely together the outer leaves. This may be done by tying together long bands of bass matting, fastening one end to the outer plant in the row, then passing it to the next plant, giving it a turn round the leaves, and so on till the row is complete. When the moulding is finished, the string may be unravelled and used for the next row. The operation of carting up should be repeated once or twice a fortnight, until the plants are ready for use, gradually diminishing the breadth of the top of the ridge, until it is drawn at last to a point near the tips of the plants.

The celery intended to be preserved during winter should be unearthed and cut off close to the roots. A ridge of earth should next be formed of a height corresponding to the length of the heads, which should be placed parallel to each other up and down the sides of the ridge. More earth may then be banked against these heads, and the operation alternately repeated until you dispose of the whole crop. If the celery thus prepared be liable to suffer from frost, the surface of the deposit should be covered with a layer of litter or straw from 3 to 9 inches thick, which may be removed as fast as the heads are dug up for use. [—American Agriculturist.

SALT AS A GARDEN MANURE.—I can strongly recommend a dressing of this manure (except on very stiff land.) To grow asparagus and sea-kale in perfection, it is essential, and I find a general improvement effected by its use in the bulk and quality of our culinary crops; it also destroys snails and other insects. For general crops, about  $\frac{3}{4}$  lb. to the square yard will be sufficient; this should be sprinkled evenly over the ground when it is bare, and if dry, forked in immediately. To the crops of sea-kale and asparagus twice this quantity may be given; it should be spread over the beds in winter, or early spring, and either forked in at once or left to be dissolved by the rain. [—Agricultural Gazette.

TREE PLANTING.

We need hardly urge upon planters, the necessity of the utmost care in every particular. The ground should be thoroughly prepared. In all cases it should be, as we have often said, trenched or subsoil ploughed, and properly enriched, so that the young roots may spread out freely on all sides, and find abundant nourishment. If people were half so zealous in the proper preparation of the ground, in the planting well, and in the after culture of trees, as they are in seeking for trees of large size, they would find their labours much more successful and profitable in the end. Many we have known to utterly refuse to plant a tree because it was not so tall that the "cows could not reach its branches." Such persons have much to learn about trees.

The well-informed, careful cultivator cares but little for size, if he gets a good, healthy, well-grown plant of the right sort. The purchaser of young trees has the advantage of shaping them to his own taste and convenience—and this is a consideration of some consequence.

The careful treatment of the roots is another important point. They should neither be bruised, broken, nor exposed to the air until they get dried.

After being well planted they should be neatly tied to stakes, and have the surface of the ground around them cleaned and loosened every two or three weeks during the growing season. With such care, it is surprising how soon trees attain size and fruitfulness; and without this care they had better never be planted.

By way of answering several correspondents in regard to distance, we subjoin the following table, which according to our experience is about right, in general.

Apples.	Form.	Stocks.	Distances
Apples,	Standard,	Common,	30 to 40 ft.
"	Pyramid,	Common or Doucain,	10 to 12 ..
"	Dwarf,	Paradise,	6 "
Pears,	Standard,	Pear,	30 "
"	Pyramid,	"	12 "
"	"	Quince,	9 "
"	Dwarf,	"	6 "
Cherries,	Standard,	Mazzard,	20 "
"	Pyramid,	Mahaleb,	10 "
"	Dwarf bushes,	"	6 "
Plums,	Standard,	Plum,	18 "
"	Pyramid,	"	9 "
Peaches,	Standard,	Peach,	18 "
"	Pyramid,	Plum,	9 "
Apricots,	Standard,	Peach or Plum,	18 "
"	Dwarf,	Plum,	10 "
Nectarines	"	"	10 "
Quinces,	Standard,	"	12 "
"	Pyramid,	"	9 "
	Currants,		4 feet.
	Gooseberries,		4 "
	Raspberries,		3 "

—Gen. Far.

WASH FOR FRUIT TREES.—Take equal parts, by measure, of ground plaster of Paris, soft soap, and green cow dung; dilute them with water to the consistency of common white wash; and apply the mixture to the trunks and large branches of the trees with a mop or brush. This will not only have a tendency to destroy or ward off insects, but render the trees more healthy and fruitful.

EXPERIMENT WITH ASPARAGUS—The London Gardeners' Chronicle gives the following method of growing asparagus at Nice. Take a quart wine bottle, invert it over an asparagus root just rising from the ground, and secure it to its place by three sticks. The asparagus will grow up into the interior of the bottle, and being stimulated by unusual heat and moisture, will speedily fill it. As soon as this has taken place, the bottle must be broken, when the asparagus will be found to have formed a thick head of tender, delicate shoots, all eatable, and as compact as a cauliflower.

CUTTINGS and grafts, when sent to a long distance, should be enveloped in pieces of oil cloth. This preserves them from the action of the air.

THE BEET ROOT was first brought from the shores of the Tagus, and was cultivated in gardens, on account of its elegant leaves and the rich red color of its roots, two hundred years before it found a place on our tables as an esculent luxury.

NEVER grumble at what you cannot prevent; you have no right to grumble at what you can prevent.

## Mechanics and General Science.

### MR. SHERIFF RUTTAN'S LECTURES ON VENTILATION.

We have perused with much pleasure this useful publication, on a most important subject. No one can reflect on the necessity of a constant supply of pure air, to the health and comfort of man, without perceiving the general want of an adequate provision for the accomplishment of that purpose, in our dwelling-houses and public institutions. How frequently are large numbers of children huddled together in low-pitched school-rooms, without any other means of ventilation than what can be effected (and that is oftentimes very small) by opening the door or windows, a method at some seasons of the year dangerous or impracticable. The whole question is one fraught with interest to every human being, and we look upon those who urge its claims, and endeavour to promote its practicability, so as to meet the actual wants of society, as among the real benefactors of their kind.

Mr. Ruttan has invented and patented an apparatus for the double purpose of warming and ventilating, and, we are informed, with success. There can be no doubt that the common way of warming dwelling-houses in this country is both wasteful as regards fuel, and injurious to health. While Mr. Ruttan's plan would appear to diminish materially the former, it would unquestionably be highly promotive of the latter. We cannot but regret that this useful little work, which consists of two Lectures that the author delivered before the members of the Mechanics' Institution at Cobourg, should have been printed merely for private distribution. So important a subject, treated with so much clearness and ability, ought, we think, to have been fully brought before the public; an object, we trust, the author will not lose sight of, when he has completed his original design. We extract the following paragraphs from the preface, which will show our author's views of the nature and importance of the task he has so ably performed; and we may hereafter furnish our readers with extracts from the work itself, that have a peculiar bearing on important matters of domestic economy:—

"The subject of the following Lectures, although a matter of the utmost concern to the whole world, appears to have engaged little of the attention of mankind. One reason for this may be, that the importance of breathing a pure atmosphere has never been, until within the last few years, either properly understood or its necessity enforced. Another reason may be found in the diffidence with which every person, who might be really capable of rightly thinking upon the subject, would approach a matter so purely scientific, in the face of the great names which are connected with it either directly or indirectly, in various countries. But the principal reason, it appears to me, is that those scientific men, whose attention may have been attracted by, and who have been capable of investigating the subject, have, for the most part, been inhabitants of such climates as stand in less need of the ventilation of their dwellings. Necessity, it is commonly said, is the mother of invention, and it is therefore natural to sup-

pose that any improvement, especially in domestic economy, which more or less influences all, should emanate from those who are likely to be most affected by its operation.

"I have myself, for many years, been anxiously looking for, and expecting some discovery by which the enormous consumption of fuel, to which under our present system of heating our dwellings we are obliged to submit, might be prevented. But what was every body's business, in this as in all other matters, appears to have been 'nobody's business, and not even an attempt has until now been made.

"It was in the course of my experiments for the economising of fuel, which, for the last few years, has engaged my attention, that I happened to stumble upon the important fact that the principle involved in the saving of fuel was that by which alone a proper system of ventilation could be carried out! So that, after all, it appears in this as in all other instances where the true principles of philosophical enquiry have been pursued.—Nature proves herself the most scientific agent!"

### FIREPROOF BUILDINGS.

The extraordinary number of fires which now happen, and their great destructiveness, in the towns and villages of this wooden country, render it not only important that owners of property should be careful to insure, but that, in all new erections, every practicable precaution should be taken to avoid exposure. In towns and cities especially, blocks of buildings should be as nearly fireproof as possible. The following article, from the March No. of the *London Mechanics' Magazine*, contains some hints which may be of use to our City readers:—

"An interesting paper on this subject by Mr. Braidwood, the Superintendent of the London Fire Establishment, was read last week at the Institution of Civil Engineers. The author analysed the evidence as to the capability exhibited by cast and wrought iron beams for sustaining weights where they were exposed to any extreme changes of temperature. He demonstrated, by a collection of specimens of metal from buildings that had been destroyed by fire, that occasionally the temperature in the conflagration of large buildings rose almost to the melting point of cast iron; and that even in a small fire, beams and columns of cast iron would be so affected by the heat and jets of water thrown upon them, that they would probably be destroyed, and sometimes cause a fearful loss of life; as in many of the so-called fire-proof warehouses of the city, a number of persons employed on the premises slept in the upper floors, and if the lower beams gave way, the whole would be dragged down suddenly—whereas timber beams resisted fire some time, and allowed time for the inmates to escape. Another point which the author considered had not been sufficiently insisted on was the derangement of the brickwork by the expansion of the iron beams at high temperatures, and its sudden contraction on the application of cold water; and also from the mortar becoming completely pulverized by the excessive heat, instances of which have been known to occur. The following were the principles on which Mr. Fairbairn had proposed to construct fire-proof buildings. The whole of the buildings to be composed of incombustible materials, such as iron, stone, or brick. 2. That every opening or crevice communicating with the external atmosphere be kept closed. 3. An isolated stone or iron staircase to be attached to every story, and

to be furnished with a line of water pipes communicating with the mains in the street. 4. The different warehouses to be divided by strong partition walls, and no more openings to be made than are absolutely necessary. 5. That the iron columns, beams, and brick arches be of a strength sufficient not only to support a continuous dead pressure, but also to resist the force of impact to which they are subject. Lastly. That in order to prevent the columns from being melted, a current of cold air be introduced into the hollow of the columns from an arched tunnel under the floors. Mr. Braidwood argued that there could be no doubt, if the second principle could not be defeated by carelessness in leaving a door or a window open just at the time when a fire occurred. The fifth principle showed that Mr. Fairbairn had not laid sufficient stress on the loss of strength to the iron consequent on an increase of temperature; and the last principle, it was thought, would not be likely to answer the purpose, as a specimen of  $1\frac{1}{2}$  inch cast-iron pipe, on being heated in the centre, with both ends open, and a current of air passing through it, gave way, on one end being held in a vice, and the other pulled with slight force by the hand, after an exposure of only four minutes in the fire. For these reasons and others, the author submitted that large buildings containing considerable quantities of combustible goods, and constructed on the usual system, were not practically fire-proof; and that the only construction which would render such building safe, would be groined brick arches, supported by pillars of the same material laid in cement. The author was also of opinion that the loss by fire would be much reduced if warehouses were built of a more moderate size, and separated from each other by strong partition walls, instead of being constructed in immense ranges, into which, when fire had once penetrated, it set at defiance all the efforts to extinguish it."—[Athenæum Report.

## SCIENTIFIC NOTICES.

### No. II.

The second form of precipitate that we will mention is the so called corn-rain, which is no more of atmospheric origin than the sulphur, or golden-rain, described in our last paper. It is frequently observed, in some parts of Europe, that after heavy rains the fields are found sprinkled with bodies which in shape faintly resemble a grain of corn, but are much larger. These substances, when examined, were found to consist principally of the same body that enters largely into the composition of all kinds of grain, namely, starch; and hence, as they are supposed to have fallen with the rain, the phenomenon became known under the name of corn-rain. These grains are sometimes round, more generally oval or conical, and are usually under an inch in length, and from one-twelfth to one-sixth of an inch in diameter. They taste mealy and sweet, but have a sharp, burning sensation in the mouth.

On being examined, by botanists, they were immediately recognised as the roots of a plant called *Ranunculus Ficaria*, or *Ficaria Ranunculoides*, which grows in great abundance in several parts of Germany, where this phenomenon has been most frequently observ-

ed. The plant blossoms early in the spring, and the leaves soon die off, leaving the root-stock with a number (6 to 20) of small tubers, very slightly attached to it, just under the surface of the soil. They are so lightly attached to the stock, that a heavy rain will readily separate them; and if a violent wind occur at the same time, they may easily be blown about over the field; or, if the water should collect, and form an inundation, these tubers may, of course, be carried by the floods to localities where the plant itself is not known to exist. In fact, it has been stated that their bodies are never found except in places to which they may have been carried by floods, although other observers have found them in the streets of a village, and on the top of linen spread out in bleaching grounds, a circumstance which can scarcely be accounted for, unless we suppose them to have been carried up by the wind.

A number of other bodies, however, similar in appearance to grains of corn, have occasionally been found; such, for instance, as the seeds of *melampyrum nemorosum*, *peronica hederæfolia*, &c. &c. The seeds of the latter plant seem to have been beaten out of the capsules by the heavy rain, while the plant itself, having become dry and withered, at the time the phenomenon was observed, had been carried off; or we may suppose the seeds to have been transported from the spots where the plants grew, by the winds; as we have a number of instances on record (*vide* Kamtz' Meteorology) of fruits and seeds being so carried from one place to another.

Lichens are sometimes carried up into the air by gusts of wind, and deposited at a distance, in immense quantities, as has been several times observed in Persia.

### RAINS OF ANIMALS.

It has often been stated that small fish, frogs, caterpillars, &c., have fallen from the clouds; and this must be explained on the supposition that they have either been carried up into the air by violent gusts of wind, or else that the rain has brought them forth from their retreats. Every one who has lived in the country, in England, must have noticed the swarms of young frogs which are often found on the roadsides, after a warm rain, in the spring. We need not suppose that these animals have fallen from the atmosphere, but merely that the warm rain has assisted their development, and brought them out.

We have also authentic accounts of fish having fallen from the clouds, more especially in places near the sea-coast; but these must have been carried up with the water by whirlwinds, and may be transported some considerable dis-

tance in the air before they fall, by violent winds.

That caterpillars should sometimes appear to fall from the air, evidently arises from their being carried by the winds from the trees on which they sometimes swarm in such immense numbers.

#### RAINS OF BLOOD.

It has frequently happened that drops of a liquid resembling blood has been observed on roads, rocks, the roofs of buildings, and other places. The surface of the ground has often been found covered with patches of a blood-red substance: and the water in ponds and ditches frequently acquires a similar colour. This phenomenon, which in the dark ages was regarded with superstitious horror, and generally considered as the precursor of some dreadful calamity, has of late years, through scientific research, become susceptible of a very simple explanation; and it has been found that it is produced by several causes, which have not the most remote connection with the science of so called blood-rain drops are produced by a species of butterfly, which, when emerging from its chrysalis, emits a few drops of a red liquid; and as these insects occur in immense numbers in some years, the marks which they leave will have the appearance of drops of rain; but, as might be expected, these drops are observed, just as often as not, in places to which the rain itself could not possibly penetrate.

The red colour of the water in ponds and ditches, and even in large lakes, and the colour of patches on the surface of moist earth, are owing, in some cases, to living animals of the lower classes; and in others, to plants. Thus, the colour of the water is often caused by myriads of a peculiar kind of water flea, *Daphnia pulex*; or by immense numbers of an Infusorian, named by Ehrenberg the *Astasia hæmatodes*. In many instances, however, the colour is caused by small plants, belonging, generally, to the order *Conservæ*; and of these, a great many species have been observed in various parts of the world. It is these plants which produce the red patches frequently seen on moist ground; for when the gelatinous substance of which these spots consist is examined, under a microscope, it is found to be composed of small threads, of a blood-red colour.

Sometimes, however, the rain or snow which falls is really red, and this colour has been traced to the presence of oxide of iron, or rust, and in one case to a compound of cobalt.

Snow has frequently been found of a red colour. Thus, the phenomenon may be frequently observed on the Alps and Pyrenees;

and in almost every account of Arctic expeditions, we find mention made of immense fields of red, or rose-coloured snow. This colouring matter has been carefully examined, by a number of observers, and has been found to be always of the same, or, at least, of a very similar nature, in every instance, consisting of very minute globules, of a red colour. These globules are evidently of a vegetable nature; but, owing to their imperfect organization, it is difficult to determine precisely to what particular order they belong, whether to the fungi or to the algæ. It seems to be also a matter of doubt whether they are produced in the snow itself, or on the rocks first of all, and then washed off. The latter supposition seems the more correct one, inasmuch as the red substance has been found covering immense surfaces of the otherwise naked rocks in polar and mountainous regions.

H. C.

*Orillia, 24th April, 1849.*

GENTLEMEN.—I think it contains much intellectual matter, and solid information.

You will oblige me by answering, at your convenience, the following queries:—

What are the botanical names of our different field weeds?

The botanical name of Ironwood?

The composition of the ashes of our various forest trees—maple, bass, birch, ash, beech, &c. &c.; and might not the ashes of different trees be applied according to the nature of the soil and the wants of the crops?

Will it be a good plan to graft or inarch foreign grapes on our wild native vines?

Is there any advantage in crossing together or mixing various breeds, as Ayrshire, Durham, Devon, &c.; or Leicester, Cheviot, South Down, &c., sheep; and what would be the result of so doing?

J. C.

[We have placed several of our Correspondent's queries in the hands of a scientific friend, and will answer some of them, at least, in our next.]

AMPUTATION WITHOUT PAIN.—The Philadelphia Ledger makes the following suggestion:—

Two cases have recently occurred in Schuylkill county, Pennsylvania, in which limbs have been accidentally cut by a swift moving circular saw. In both instances the persons were cleaning out the refuse that accumulates in the dark chamber under the work-bench in which the saw is set. One of them had three deep slips cut between different fingers, up into the hand, one cut after another. The other had all the fingers of one hand cut off; some half way, and others less. In both cases, the persons were not aware of their loss till the sight of blood attracted their attention on coming to the light—so free from

pain was the operation. This suggests the idea of employing an instrument of this kind for similar purposes in surgery. A very light and portable instrument could easily be made to receive its rapid circular movement by hand; and the freedom from pain ought to commend it to speedy use. It would have the further advantage of making the section with greater precision than can be attained with the ordinary surgical knife and hand-saw; and it would not require the same firmness of nerve either in the patient or the operator.

**THE WATER HAMMER.**—Our unscientific readers may be interested in an explanation of the water hammer. By opening a stop-cock or fountain in a tube, as that of one of the great mains of the Long Pond water, a current is established through the tube, the velocity of which is to that of the jet at the orifice inversely as the square of the diameter of the pipe to the square of the diameter of the orifice.

Thus, if the orifice at the fountain be three inches and the main thirty inches in diameter, and the velocity of the jet be seventy-five feet per second, a current of nine inches per second will be established in the main. If the jet be six inches in diameter, the current in the main will be thirty-six inches, or three feet, per second. Now, the amount of velocity of motion, is proportional to the amount of velocity multiplied into the weight of the water in motion. The water in four miles and a half of thirty inch pipe, would be something over four thousand tons, if our ciphering is correct. The motion or blow which an instantaneous stopping of a three inch fountain destroys, is that of a hammer of four thousand tons moving at the rate of nine inches a second, or half a mile in an hour, which is just the same blow as that of a hammer of forty tons, moving with the velocity of the jet, or seventy-five feet per second. And in a water pipe this blow takes effect in all directions, the weakest point, if any thing, yielding. When we consider the force of a hammer weighing forty tons, —eight hundred thousand pounds—swung with the lightning velocity of 75 feet per second, we shall see that the strength either of the gate boxes or the pipes is nothing to it, and their only safety lies in the impossibility of shutting a stop-cock instantaneously. As time is employed in destroying the motion, the force of the blow is divided.—[Farmer and Mechanic.

**NEW PRINCIPLE IN THE SAW MILL.**—Horace Hecock, writing to the Jeffersonian, says he has invented a method of sawing, "calculated, as a general thing, to save the time and trouble of giggering back the carriage, as the saw, after cutting through, is instantly reversed, together with the feeding apparatus, setting the board at the same time to the required thickness, and returns cutting through the log each way alternately, without stopping, until the log is finished." The mill, however, is built with apparatus for giggering back the carriage, for convenience in cutting through the first time, for scantling, &c.—[N. Y. Farmer.

**IMPROVED SHOE-PEGGING MACHINE.**—This is an invention described in the American Cabinet, the merits of which consist in holding the shoe on rocking, turning, or moving stocks, in the proper position to be pegged together with the simultaneous intermittent movement of the carriage and stock, by means of a cogged and grooved guide pattern, and

traversing guide shaft and pinion, for the purpose of arranging the pegs at uniform distances apart, in lines round the sole of the shoe, and parallel to its edges.

Also, the employment of the turning tube, for the purpose of receiving the charger, and then placing them over the hole punctured in the sole of the shoe by the awl, in the proper position to be driven therein, combines the manner of supplying the turning tube with pegs from the charger at suitable intervals, by means of a vibrating driver.

And lastly, the employment of a spiral chamber or groove to contain the pegs and supply them to the charger, one at a time, by the simultaneous intermittent action of the traversing pusher, and ratchet wheel, or otherwise in combination with the charger driver, turning tube, awl, and punch, arranged and operated in the manner and for the purpose described.—[Farmer and Mechanic.

**CHEAP LIGHTNING RODS.**—No. 1 wire is said to be an ample protection against lightning, put up as the large rods are. War ships use the wire with complete success.

**PATENT SAFETY BRIDLE.**—Mr. H. Seitz, of Marietta, Lancaster county, Pa. is the inventor of a recently granted, whereby it is impossible for the most spirited horse to kick or run away, and perfectly safe for a lady to drive or ride.—The principle on which it is constructed is to hold the horse by the application of a pulley around which the reins are made to pass at the side of the horse's mouth, which enables the rider to exert a great deal of lever power to control the mouth of the animal, and to check him at any moment.

**KEEPING WORTHLESS DOGS.**—It is universally admitted, that what would keep a dog would keep a pig. It need not be said then, which would be found the most profitable to a poor man's family, at Christmas, a dog for his children to play with, or ham and good bacon to fill their stomachs.

## THE ATMOSPHERE.

The positive amount of carbon present on the atmosphere is a question of much interest to the theory of vegetation, and other phenomena of the earth's surface. This question is solved, first, by estimating (which can be done exactly) the total weight of the atmosphere round the globe; next, by taking the fractional proportion which carbonic acid forms of this amount; and, finally, by deducting the further proportion of 27 per cent., which oxygen bears in the composition of carbonic acid, leaving, as a gross result, 3,085 billions of pounds of the element of carbon existing under this condition;—a quantity which, Liebig states, but on less assured grounds, to exceed the weight of all the plants and strata of coal existing on the earth.

The same method has been largely and curiously applied to the ingredients of animal and vegetable bodies, and to the parts of inorganic nature on which they respectively depend; and the results have proved singularly interesting in the natural relations thus disclosed; and of great practical utility in agriculture, and other arts of life.—[Quarterly Review.

## Domestic and Miscellaneous.

### THE FARMER'S SONG.

Success to the jolly old farmer,  
 Who sings at the tail of his plow—  
 The monarch of prairie and forest,  
 'Tis only to God he may bow!  
 He is surely a fortunate fellow;  
 He raises his bread and his cheese;  
 And though hard is his labor in summer,  
 In winter he lives at his ease.

When the reign of winter is broken,  
 And spring comes to gladden and bless—  
 When the flocks in the meadow are sporting,  
 And the robin is building her nest—  
 The farmer walks forth to his labor,  
 And manly and firm is his tread,  
 As he scatters the seed for the harvest,  
 That yields to the nations their bread.

His banks are all chartered by nature—  
 Their credits are ample and sure;  
 His clerks never slope with deposits,  
 Pursued by the curse of the poor;  
 His stocks are the best in the market;  
 His shares are the shares of his plow;  
 They bring the bright gold to his coffers,  
 And pleasure and health to his brow.

When his fields with rich harvests are teeming,  
 And the reapers go forth to their toil,  
 None so happy and free as the farmer—  
 Possessor and lord of the soil;  
 He sings while he roams his broad acres,  
 As none but a farmer can sing,  
 And would not change his condition  
 For the splendor and pomp of a king.

When his crops are all gathered and sheltered,  
 And his cattle are snug in the fold,  
 He sits himself down by the fireside,  
 And laughs at the tempests and cold.  
 A stranger to pride and ambition,  
 His duties he strives to fulfil,  
 Determined whatever betides him  
 To let the world jog as it will.

His trust is in Him who has given  
 The seasons, the sunshine, and rain,  
 Who has promised him 'seed time and harvest,'  
 So long as the earth shall remain;  
 And if from his duties he wander,  
 Led on by his venturesome will,  
 Through life and his changing relations  
 God's providence follows him still.

### THE EFFECTS OF COSMETICS ON THE SKIN.

The deep interest I take in the moral improvement of my young countrywomen, more particularly those who are so fortunate as to be the wives and daughters of farmers, must be my apology for the following remarks upon the article in the January number of the *Agriculturist* on the "Effects of Cosmetics on the Skin." I shall therefore ask no other excuse for expressing my difference of opinion, nor for pointing out what I conceive to be mistaken views on the subject, feeling very sure that a little serious reflection will bring your correspondent over to my old-fashioned way of thinking. Let me first say, how-

ever, that I agree entirely with her observations on the different kinds of soap, alcoholic preparations, &c.

We know that all kinds of soap are more or less injurious to a delicate skin, and in cold weather their too frequent use should be dispensed with, as much as possible; but when necessary, the skin should be protected afterwards, for a little while, from the air. Therefore, when cleanliness requires it for the face and neck, they should be washed just before retiring at night; and in the morning, nothing more will be wanted than the usual sponge bath of pure, cold, soft water, and a coarse rubber vigorously applied. Some skins will chafe under the most careful treatment that can be bestowed upon them; while others will continue soft and smooth, though exposed to every wind that blows, and seem to be proof against all kinds of domestic labour. For the first of these, the best purifier would be corn, or bean meal, or palm-oil soap, followed by a few drops of honey rubbed on while the hands are wet. Fine dry salt acts very pleasantly on the skin; rendering it soft and smooth, and has also the advantage of strengthening the system, on which account it is highly recommended by physicians. The best way to apply it, is, to draw on a pair of very coarse cotton or linen knitted gloves, that have been frequently dipped in strong salt and water, and dried after each immersion, and with them rub until the skin looks red, and the blood circulates freely.

But it is the second part of your correspondent's remarks that I intended particularly to notice. That the writer does not speak from personal experience I think is evident, or she would not say that "rouge can be employed, without injury, to brighten a lady's complexion."

Every school girl knows that even the common carmine in her paint box, if put on the cheeks with water, can be washed out without leaving a permanent mark. I have been much in fashionable French society where the use of rouge was not only considered unblameworthy, but in certain cases openly vindicated; yet its deleterious effects upon the skin were undoubted, and openly lamented, as producing a sallow stain, which, as it cannot be removed by ordinary means, makes a continuance of the bad practice seem necessary. And a bad practice it is, in sober sadness, for any woman; but for women living in this bright, beautiful country—for the wives and daughters of American farmers, *even to think of using rouge and pearl powder, would be ridiculous, could it be contemplated in any other light than as a degradation?* They, too, who enjoy the glorious privilege, not to be too highly prized, of living in the pure, health-giving breath of heaven,—who are at liberty to exercise daily on horseback, and roam at will over hills and fields. I will not think so badly of them as to suppose that they would condescend to tolerate the use of such miscalled beautifiers. It is true, a pale cheek is not esteemed so lovely as the one tinged with

"Celestial rosy red, love's proper hue," nor is a dark, or coarse skin thought so desirable as one fairer and more delicate; but does not every one know instances among their friends, of faces by nature ugly, to which intelligence, benevolence, and good temper impart the characters of real, soul-like beauty? Believe me, God's handiwork cannot be im-

proved. And the admiration of strangers is dearly purchased by the loss of the respect of those in whose eyes and hearts alone it should be their ambition to appear to advantage; for the mistaken ones, who resort to these paltry arts, do not deck their faces with rouge and pearl powder, to make themselves more *loveable* to their husbands and brothers. It is not put on when they alone are to see them. No—any garb, any faded looks will do for the beings who ought to make their hearts happier; with whom they are to pass their lives. For whom, then, it may be asked, are they willing to take so much trouble? They who know from experience may answer.

*All substances, without a single exception, that are, or can be used to "impair a delicate white tint to the complexion," are decidedly injurious; marring what they are intended to mend.*

The "metallic compounds," are justly said to be poisonous, and the effect, even when sparingly used, is to make the skin look parched and glazed. Magnesia, being a mineral substance, is not much less hurtful; and powdered starch, though the least objectionable of any, is seriously injurious by the mechanical action of closing the pores of the skin, preventing the escape of the insensible perspiration which would keep it clear and moist, and finally producing a sickly, unnatural thickness that makes a fair girl, who would otherwise be pretty, look like Jersey veal, bled slowly to death by the butcher! and a brunette more like a piece of old parchment than a lovely young daughter of Eve. Of such an one, in an neighbouring city, I heard a physician remark that this disagreeable appearance, being only skin deep, could be easily removed by the application of a vegetable blister!

But I must close this already-too-long notice; though something might be said of the pangs of wounded vanity that these short-sighted fair ones would suffer if

"Some power the gift would give them  
To see themselves as others see them;"

when a warm day, or a little over exertion, by producing a free perspiration throws off the *beatifiers*, leaving the white in disclosed streaks, and the red in unsightly blotches, to the mortification of their friends, and the badly-disguised amazement of the very persons they wished to charm. American women should be ashamed to appear under "false colors."

It has been often asked why the women of England have better complexions, and more healthful looks than those of the United States. The humidity of the climate is doubtless one cause of the greater, and more lasting delicacy of the skin; but the bright bloom of their cheeks is the effect of regular, systematic exercise. English ladies of even the highest rank, wear thick leather shoes, and walk every day six or eight miles without regard to the weather, and with no other object than the preservation of health.

I will close with the assurance, affectionately urged upon all who have had patience to read thus far, that curly rising, cold-water bathing, and daily exercise in the open air, as they promote health and cheerfulness, are the only cosmetics that an American woman should dare employ.—[American Agriculturist.]

## TAKING CARE OF THE PENCE.

One of the hardest lessons for many of our young men to learn is that trite and sterling doctrine of Poor Richard—"Take care of the pence, and the pounds will take care of themselves." But hard and distasteful as it is, we must learn and practice the maxim, or take the still harder alternative of poverty and want.

We have no inclination to teach any of our readers a lesson in miserly meanness and littleness. The miserable Muckrake, who consecrates his energies to the saving of the shreds, and fragments, and sweepings that lie in his path as an ultimate object, is quite as pitiable a being as the most prodigal spendthrift. What we desire is, to save the thoughtless and wasteful from future embarrassment and trouble by putting him upon a course of economy and carefulness in his ordinary expenditures. This is all that is necessary, and all we wish.

Hundreds of young men, some of whom may read this paragraph, might this day have been in possession of a snug little capital, if they had simply dispensed with superfluous indulgences during the time they have been engaged in business. It would have cost no sacrifice of generous feeling, or of respectability of character; and besides the saving of money, it would have been attended with the acquisition of a habit of minute economy, or precise attention to the small details of daily business, which is itself worth more than money; which is in truth the most productive kind of capital.

In this country, and as business is here managed, a little capital gives a young man great advantage, especially if, along with it, he possesses superior business talents and habits. And the fact that he has saved from a small income a snug little sum in the course of a few years, is itself pretty good evidence that he has the right habits and abilities to succeed well; and no introduction or letters of recommendation can speak so loudly in his favour. At the same time, the buoyancy of mind and spirits which this advantage inspires in the young adventurer himself is often a material help to him in his future undertakings. In every respect he appears in favourable contrast to those other young men, who, though placed in circumstances equally favourable, have acquired no property, contracted bad habits, and feel jaded and discouraged by their unfruitful toil.

It has a great and happy effect upon one's own mind and energy to feel that a beginning is made—that a foundation is laid to build upon; and, if for no other reason, for this every young man should look well to see what becomes of his first earnings. It is comparatively easy to add to a stock, however small; less easy to think of beginning one.

We repeat our advice, then, old and oft repeated as it has been. Take care of the pennies, the first earned pennies of youthful endeavour, and the pounds of after life will take care of themselves.—[Dry Goods Reporter.]

## GARDENING FOR LADIES.

MR. DOWNING, in the February number of the Horticulturist, when urging the ladies to decorate their homes with climbers and creepers—the drapery of nature, more beautiful far than festoons of satin

and gold—says: "All that is most graceful and charming in this way owes its existence to female hands. \* \* \* They are naturally mistresses of the art of embellishment. Men are so stupid in the main about these matters, that if the majority of them had their own way there would neither be a ringlet nor a ruffle, a wreath nor a nosegay left in the world."

Without entirely assenting to the truth of the above, we would say that the ladies have ever been considered, the world over, the almost exclusive patrons of flowers. And we know of no employment—no exercise or recreation—so conducive to health and happiness—none that will bring so effectually the glow of health to the cheek, and of joy to the heart, as GARDENING. It not only furnishes exercise, but exercise in the open air, and that regularly. While riding and other modes of exercise are attended with expense, and inconvenience, and loss of time, and are seldom attended to regularly, even by those most favored: yet she who cultivates a flower garden, and loves flowers, will seldom neglect her daily task. The ever encroaching weeds, the necessities of her plants, call daily for her attentions—and seldom call in vain.

The healthy appearance of English ladies is noticed by all American travellers. And for this they are in a great measure indebted to their passion for gardening. All English ladies work in their flower gardens, from the proudest princess to the poorest cottager.

When the hoe and the spade were almost the only garden implements in use, ladies had some excuse for neglecting to cultivate their gardens with their own hands; but now, implements are made so light and convenient, especially for ladies' use, that there would seem to be no excuse. The *Ladies' Garden Fork* is one of the most useful of these, either in the garden, or among plants in pots. The *Transplanting Trowel* is a light and convenient implement for preparing the ground for small plants, and for removing them to the desired place, without disturbing their roots or checking their growth. We see advertised in the eastern papers *Ladies' Gardening Gloves*; but we would not advise our fair readers to be particular about the *mittens*.

The architect may design, and the builder erect, the stately mansion or the simple cottage; it may be faultless both in design and execution, yet it stands stiff, unmeaning and lonesome;—but let some fair hand surround it with the drapery of nature—leaf and blossom—and it is changed as if by magic; its deformities, if any, are hid, its beauties heightened, and it becomes at once the abode of grace and beauty.—[Genesee Farmer.

### SALT OF LEMONS.

In reference to an article in the March number of the "Agriculturist," on removing ink stains, it may be well to remark, that the substance almost universally sold at apothecaries' shops under the name of salt of lemons is nothing more than salt of sorrel. This latter is a very poisonous substance; while the principle contained in the juice of the lemon, which

removes ink stains, is perfectly harmless. Accidents might possibly arise from persons being ignorant of this fact, and employing the so called salt of lemons on an emergency, instead of pure lemon juice. H. C.

### HOW TO COOK VEGETABLE MARROWS.

The true vegetable marrow, which does not seem to be much cultivated in this country, does not grow large, and should always be gathered when from six to ten inches in length. The true kind is oblong, and of a creamy white colour; while the excellent Spanish squash, which is perhaps equal to it, is rounder, and mottled green. The full, fresh flavour of the vegetable is obtained much better than by mashing, if the marrow be boiled whole, from twenty minutes to three-quarters of an hour, according to the size. If small, it may be served whole, or, if large, cut up in pieces, the seeds scraped out, and served with melted butter, and pepper and salt. They should always be used young, for when old they are apt to taste woody, like the coarse kinds of squash. H. C.

A MOTHER'S INFLUENCE.—For myself, I am sure that a different mother would have made me a different man. When a boy I was too much like the self-willed, excitable Clarence; but the tenderness with which my mother always treated me, and the unimpassioned but earnest manner in which she reprobated and corrected my faults, subdued my unruly temper. When I became restless or impatient, she always had a book to read to me, or a story to tell, or had some device to save me from myself. My father was neither harsh nor indulgent towards me; I cherish his memory with respect and love. But I have different feelings when I think of my mother. I often feel, even now, as if she was near me—as if her cheek was laid to mine. My father would *place his hand upon my head*, caressingly, but my mother would *lay her cheek against mine*. I did not expect my father to do more—I do not know that I would have loved him better had he done more; for him it was a natural expression of affection. But no act is too tender for a mother. Her kiss upon my cheek, her warm embrace, are all felt now, and the older I grow, the more holy seem the influences that surrounded me in childhood.—["The Mother," by T. S. Arthur.

HENS EATING THEIR EGGS.—(T. R. S., Omar, N. Y.) We know of no other preventive for hens eating their eggs, than to keep them supplied with lime and gravel in some other shape, and not feeding them the shells, except very finely broken; and by making their nests in a box so deep and small that they cannot reach them while standing on the edge. Hens that are confined are much more apt to commit this fault, than those running at large.—[Genesee Farmer.

**HOW TO RENDER CLOTH, SILKS, &c., WATER PROOF.**—Take one pound, each, of common alum, (sulphate of alumina,) and sugar of lead, (acetate of lead,) and dissolve them in six quarts of boiling water well mixed by stirring. When cold, the top portion of the mixture should be poured off for use, as the sediment consists of sulphates of lead, potash, &c. Any article of dress, no matter how slight the fabric, if well saturated with this liquid, and allowed to dry slowly, will bear the action of boiling water, and not permit it to pass through it.

**AMERICAN PRODIGALITY.**—No observing American comes from the United States to Europe, without soon becoming convinced that economy of living is nowhere so little understood as in his country; and that for nothing are the Americans more distinguished, than for a reckless waste of the means of subsistence. The refuse of many a family in the United States, even in moderate circumstances, would often support, in comfort, a poor family in Europe.—[Colman.

**TO CURE A COLD.**—The present winter has been characterised by the severity of colds, with which almost every body has been afflicted. We ourselves have had one, the most obstinate we ever had, confining us to the house for two weeks, and by an almost incessant cough forbidding us to sleep by day or night. We tried various remedies, until we wore them out without realizing any desirable effect, and at last heard of and tried the following, to wit: Take thoroughwort, bearberrind, and pennyroyal, of each a good handful, and boil them in just water enough to extract the strength; then strain off the liquor, and add an equal quantity of molasses, and boil until it forms a candy. Eat freely of this very time an inclination to cough is felt, and your cough will soon leave you. After using this candy for half a day, we had a night of good sleep, and found our appetite much improved next morning.—[New England Farmer.

**BLANKETS.**—A medical gentleman, who has had extensive practice, urges the importance of frequently washing these useful articles. Blankets have not only a great capacity for absorbing contagious matter, but will retain for a lengthened period the elements of that contagion in an active state. Not only will they communicate the particular infection with the subject of which they have been in contact, but will frequently excite other disorders to which different persons may be constitutionally liable. It is not sufficient to wash this coarse woollen fabric, it must be washed thoroughly and regularly. Visitors among the poor would do well to call attention to this matter, the importance of which is generally so little appreciated.

**AGE OF SHEEP DETERIORATES THEIR WOOL.**—It has been observed, by the most experienced wool-growers, that the older the sheep the less fine the wool. The wool is said to be of the best quality when the sheep is from two to five years of age; after that it deteriorates. Mr. Blanchard, of New York, states that he has known flocks that yielded wool that sorted number one when young, when older drop down to number two or three. Those who wish to grow the first grade of wool should keep young sheep. Some go so far as not to use a buck after he is four years old.—[N. E. Farmer.

## MUSIC OF SPRING.

“There’s music in the balmy breath  
Of spring, when from the realms of death  
She calls the flowers to life again,  
And decks with gorgeous hues the plain,  
Then wakes to notes of harmony  
The grove’s enchanting minstrelsy.  
There’s music in the murmur low  
Of gentle waters rippling by—  
There’s music in the onward flow  
Of rivers in their majesty.  
There’s music in the bubbling fountain—  
There’s music on the sun-bathed mountain—  
There’s music on the earth—  
There’s music in the air—  
And music into birth  
Is bursting every where.”

## RAPIDITY OF INSECT GROWTH.

We know of no growth in animal life so extraordinary as that of the larvæ of insects. We learn from the “Entomologist” text book,” that:—“One naturalist, for example, discovered that the larvæ of the flesh-fly increase their weight at least two hundredfold during 24 hours; and another ascertained by minute calculations on data furnished by the cultivators of silk, that 1.206½ lbs. of leaves are eaten by the larvæ which issue from an ounce weight of the silkworm’s eggs. ‘It is to be observed, however,’ remarks Mr. Westwood, ‘that the stomach of these insects, like that of the horse, does not possess the power of dissolving these leaves in the most perfect manner, but only of extracting a juice from them. Indeed this very circumstance is assigned by John Hunter as the probable proximate cause for the voracity of herbivorous larvæ. And hence of the 1.206½ lbs. of leaves actually devoured, 745lbs. are deposited as excrement in an indigested state. Hence it is evident, that in comparison with the stomach of the perfect insect, in which state but very little food is in general taken, (and in some cases the insect is even totally destitute of a mouth,) the stomach of a caterpillar, and its apparatus for taking its food, must be fully developed; and this is found to be the case, the stomach occupying a considerable portion of its interior, and the organs of the mouth being very robust.—The caterpillar of the goat-moth is three years in arriving at its full size, when it is 72,000 times heavier than when newly hatched; and a silkworm, weighing, when first hatched, 1-100 part of a grain, consumes in 39 days about 60,000 times its primitive weight.”

## THE COMPOSITION OF BODIES.

We have cause, indeed, to presume, that wherever a particular element is generally present in a compound, and in definite proportion to the other ingredients, such element is essential to its nature, however small the proportion may be. This principle has been continually extended and confirmed, as chemical knowledge advanced, and becomes now the expression of phenomena, which may well astonish those not familiar with the subject. It is exemplified by the carbonic acid present in the atmos-

phere, in a proportion not exceeding one-thousandth part of its weight—and presumably also by the iodine and bromine in the waters of the sea, though here the proportion is yet infinitely smaller. The iron existing in a portion of the blood—the phosphorous found in the medullary substance of the brain and nerves—the fluoric acid in bones—the sulphur in albumen, fibrin, and certain other animal matters—and the silica, sulphur, phosphorus, and the metallic oxides or alkalies, found in different vegetable substances—are a few among the many examples which organic chemistry furnishes of the influence of minute quantities in combination. They are relations of deep interest to us, as wonderful and exquisite provisions of Providence for the purposes of life, and for the mutual dependence of the several parts of creation. What they present in natural combinations, has its counterpart in the artificial chemical union of different substances, where we still find, under various forms, this marvellous influence of small quantities, pervading and changing the sensible properties of large masses or volumes of matter. We can destroy the ductility of gold, by exposing it, when melted, to the mere fumes of antimony. We can variously change the physical properties of other metals by an amount of alloy much less than a thousandth part their own weight. We can detect, by a little starch, the presence of iodine, in a solution of which it forms less than the millionth part. And there are cases where a proportion of calcareous matter, equally small, suffices to alter the sensible properties of the substance through which it is diffused.—[Quarterly Review.

ENGLAND AS IT IS, AND WILL BE.—It is now the fashion to place the golden age of England in times when noblemen were destitute of comforts, the want of which would be intolerable to a modern footman; when farmers and shopkeepers breakfasted on loaves, the very sight of which would raise a riot in a modern workhouse; when men died faster in the purest country air than they now die in the most pestilential lanes of our towns; and when men died faster in the lanes of our towns than they now die on the coast of Guinea. We, too, shall in our turn be outstripped, and in our turn be envied. It may well be, in the 20th century, that the peasant of Dorsetshire may think himself miserably paid with 15s. a week; that the carpenter of Greenwich may receive 10s. a day; that the labouring men may be as little used to dine without meat as they are now to eat rye bread; that sanitary police and medical discoveries may have added several more years to the average length of human life; that numerous comforts and luxuries which are now unknown, or confined to a few, may be within the reach of every diligent and thrifty working man.—[Macaulay's History of England.

BONES.—That world-renowned chemist, LIEBIG, says that a single pound of bone dust contains as much phosphoric acid as one hundred pounds of wheat. From this we can easily perceive that there are bones wasted on every farm sufficient to manure the entire wheat crop. This, to many, will doubtless appear strange, but it is nevertheless true.

#### 'THE PURITY OF DIFFERENT KINDS OF SALT.'

Prof. Beck, of Rutgers' College, has made the following analysis of the different kinds of salt:—

1000 parts Onondago coarse salt contains pure salt 991 parts. 1000 parts Onondago dairy salt contains pure salt 974. 1000 parts Turk's Island salt contains pure salt 984. 1000 parts Cheshire crushed rock salt contains pure salt 986 parts.

If this be true, why is it that farmers and beef and pork packers still prefer Turk's Island or Liverpool (Cheshire) salt? This fact is notorious. If Onondago salt was better, would they not find it out! —*Buff. Com.*

LEPIDIUM RUDERALE.—In the fifth volume of the "Bibliotique Universelle de Geneve," No. IX., September, 1836, page 203. Mr. Fournel, member of the Sciences of Metz, and of the Institute, says as follows:—"In the spring I had gathered about 100 plants of a herb called by botanists *Lepidium ruderale*, and had put them upon a shelf in my room (cabinet), after I had dried them. From that instant the bugs, which were in great numbers in the apartment, appeared reduced in number, and ended by completely disappearing. I was far from suspecting the cause, when some time after, upon opening the paper in which the *Lepidium* was wrapped, I saw a prodigious quantity of those insects, placed like swarms of bees upon each branch, each leaf, and even upon each seed (fruit). The paper was covered with eggs, and the bugs were, for the most part, dead or benumbed. In the third volume of "Withering's Botany," page 556, the *Lepidium ruderale*, which is a British plant, is described, and reference is made to many figures of it. Its English name is there said to be narrow-leaved *Dittander*. It is said to grow on rubbish, and on the sea-coast; at Maldon, Essex, Lynn, and Clay, in Norfolk, plentifully; on rubbish on the side of the Severn, above Worcester, and near King's Weston, below Bristol. He says that the plant smells like a fox.—[From Bell's Weekly Messenger, England.

SALTING MANURE.—Mixing salt with stable and other manures has a great tendency to prevent the development of grubs and vermin, which are frequently bred in dung when carried unsalted to the fields.

ENJOYMENT.—If we would enjoy ourselves, we must take the world as it is—mix up a thousand spots of sunshine—a cloud here and there—a bright sky—a storm to day—a calm to-morrow—the chill piercing winds of autumn, and the bland reviving air of summer.

LONGITUDE.—"Archibald, my son, What is longitude?" "A clothes line, pa." "Prove it, my son." "Because it stretches from pole to pole."

CONOCHORDUM.—Why is a lady, while dressing her fingers, like one in distress? Because she's *ringing* her hands.

SOPHISTRY is like a window curtain—pleasing as an ornament, while its true use is to keep out the light.

TO KEEP BIRDS FROM FRUIT.—Suspend in the trees or vines a piece of looking-glass by a string, so as to turn freely in every direction. No bird will come near, after a trial or so, unless very tame.

**Editors' Notices, &c.**

**SOLUTION OF ARSENIC AS A STEEP FOR GRAIN.—**

We regret to inform a Correspondent at Port Maitland (whose name we cannot call to mind) of our inability to publish his interesting and valuable article on steeping seeds in arsenic, &c.; the manuscript, with the printed extract from the *Lancet*, having been destroyed in the late disastrous fire. We shall feel greatly obliged if our Correspondent will take the trouble to re-write his paper. Personally, we have had no experience of this kind of steep; but some few years ago the attention of Agriculturists at Home was strongly drawn to certain very favorable statements of the effects of several chemical solutions as steeps for grain; our impression is, that the results, upon repeated trials, fell much short of the expectations held out. The steeping some kinds of seeds, even in common water, before sowing, is, no doubt, a beneficial practice.

**GOLD OF PLEASURE.** For a like reason, we cannot insert the article of T. C., *Guelph*, on the culture of this plant. We shall be happy to hear from him again. The introduction of new seeds is a matter of great moment to the Agricultural interests of the country.

**G. L.'s Communication,** on the management of *Asparagus*, we are also deprived of, from the same cause, together with other matter, original and selected.

**W. B., Flamboro' West.** We are not aware of any machines in this country for making draining pipes and tiles. There are several kinds in England, most of which have stood the test of several years' trial. We will turn our attention to the matter before long, as it is of pressing importance to an improved system of Agriculture in this country.

**Z., Niagara.** We are of opinion that the use of a heavy roller would have a tendency to check the progress of the wireworm. We have tried it many times, with more or less success. The roller is also most destructive to the slug. For this purpose it should be used early in the morning, when the ground is damp, as these destructive creatures are then found on the surface. Rolling the ground well, after sowing spring grain, particularly clover and grass seeds, is a practice to be strongly recommended; it brings the soil and seed into more immediate contact, thereby promoting the important process of germination, while it tends to check a too rapid evaporation of moisture; objects of great importance during the frequent parching weather we experience in May and June, in this country.

**INQUIRER.** Several of your questions are of so difficult a nature as would require much time and space for a full reply. We will keep them in mind, and hope to be able to satisfy your curiosity, to some extent at least, as early as practicable. *Inquirer* should bear in mind that there is a large number of phenomena involved in Agricultural and other kindred pursuits, on which the present state of knowledge can throw but little light. Discovery and advancement must necessarily be progressive.

**SOWING GRASS SEEDS.** We beg to refer our *Newcastle Subscriber* to previous papers of the present number, in which he will find some valuable information.

**GREAT FIRE IN TORONTO.**

Many of our readers will no doubt have heard, before they see this paper, the particulars of the destructive fire that recently occurred in this City. A large portion of the most central and business part of the City has been reduced to ashes. Not less than £100,000 worth of property has been destroyed. Almost among the first buildings burned was the printing-office of Messrs. Rowse & Thompson, our publishers; and so rapidly did the fire consume, that only a small portion of the contents of the printing-office was saved. About half the matter for our May number was in type when the fire occurred. All this was lost, as well as the copy, communications, books, &c. &c., that had been supplied to the printer. A number of cuts, our stereotype vignette, and a quantity of paper was also burned. Fortunately, we had removed the surplus copies of our back numbers, so that our sets are unbroken; but still we are losers to the amount of several pounds, besides the delay and inconvenience. This number, as our readers will perceive, differs a little in appearance from the other numbers, owing, chiefly, to the difference in the type. The paper is a little better in quality, and is what we shall endeavour hereafter to procure. We had the precaution to order two or three plates of our head, or vignette, which is a more expensive affair than many persons may suppose, and, having them at another place, we are able to keep up our outside appearance as usual. As to the *inside*, we trust our readers will find something there worth their attention, notwithstanding our loss; and those Correspondents whose Communications became a prey to the flames before they had, properly speaking, seen the light, will perhaps be good enough to re-write them? Two or three that this unfortunate accident has kept from our readers possessed unusual interest. One has been furnished a second time by the writer, who happened to come to the City; and we hope the others will appear in a future number.

For any delay, deficiency, or neglect, the calamity we have mentioned must be our excuse. Our enterprising publishers will be able to supply every thing required on their part before another issue, in a style superior, if possible, to the past.

**TORONTO MARKET.**

APRIL 30, 1849.

Flour, per barrel, of 196 lbs. . . . .	16	3	to	21	3
Wheat, per bushel . . . . .	3	6	"	4	9
Oats, per bushel, 34 lbs. . . . .	1	0	"	1	2
Barley, per bushel, 48 lbs. . . . .	1	8	"	1	10½
Rye, per bushel, 56 lbs. . . . .	3	0	"	3	4
Pease, per bushel, 60 lbs. . . . .	1	6	"	2	0
Potatoes, per bushel . . . . .	3	0	"	3	4
Beef, per 100 lbs. . . . .	12	6	"	20	0
Pork, per 100 lbs. . . . .	17	6	"	20	0
Bacon, per cwt. . . . .	25	0	"	30	0
Hay, per ton . . . . .	45	0	"	60	0
Straw, per ton . . . . .	25	0	"	30	0

## Arrival of the "Cambria."

NEW-YORK, APRIL 27, TEN O'CLOCK, A.M.—The *Cambria*, with Liverpool dates to the 14th, and London to the 13th April, reached Halifax on Wednesday, at half-past two o'clock. Her news reached St. Johns at ten o'clock yesterday morning.

Cotton declined  $\frac{1}{8}$  to  $\frac{1}{4}$  of a penny. Market for breadstuffs improving. Consols for Friday evening 92 $\frac{1}{2}$ . Exchequer Bills 27 to 50 premium.

Latest quotations of Western Canal Flour, 24s., and some 23s. 6d. Wheat, United States and Canadian, white and mixed, 6s. 4d. to 6s. 10d. per 70lbs.; red, 5s. 5d. to 6s. 6d. Corn, per quarter, yellow 30s. to 32s., white 28s. 6d. to 30s. Corn Meal, per brl., 13s. to 14s. Pork is in limited demand, with receding prices for Western. Bacon has sold freely during the week at 31s. to 35s. 6d. for fair Western. The market is considerably reduced. Hams are in dull enquiry. Shoulders (9 cwt.) brought the extreme price of 31s. per cwt.

The *Cambria* brought \$52,000 in specie.

### IMPORTANT DISCOVERY OF NEW SUBSTANCES FOR PRODUCING INSENSIBILITY TO PAIN.

During the last summer, says the *Leeds Mercury*, we gave a short abstract of the discovery of the powers that chloroform and other substances, which by medical men are called anæsthetics, have to paralyse and render insensible one portion of the body (the faculties and other parts of the body retaining their natural powers), which had been made by our townsman, Mr. Nunneley. That gentleman had just then brought the subject, and performed experiments in proof of it, before the Yorkshire branch of the Provincial Medical and Surgical Association, at its meeting held in the Philosophical Hall, Leeds. From the subjoined notice, which we copy from the Journal of the Association, we see that Mr. Nunneley has been actively at work upon the subject since that time. The detailed results of his investigations will shortly be laid before the profession, but in the mean time he has made the following important announcement of the discovery of an altogether new substance, which appears to possess advantages over those hitherto known:—

#### NEW ANÆSTHETICS.

To the Editor of the *Med. and Surgical Journal*.

Sir,—Though my paper, "On Anæsthesia, and the Agents by which it may be produced," will appear in the forthcoming part of the next volume of the *Transactions of the Provincial Medical and Surgical Association*, now in the press, yet as some little time will necessarily elapse before it can be published, it may not be improper, nor without interest, to state, that amongst the many substances upon which I have experimented, there are two which are most worthy of attention, as of easy practical application.

The one, which was amongst the earliest I tried, is common coal gas. It is a safe, manageable, and effective anæsthetic, and very cheap, as everybody knows: though the smell is at first unpleasant, it is abated without difficulty or repugnance.

The second is a substance which I have more recently discovered; and if my anticipations be well

founded, it will be found to be the best agent yet mentioned, and will, I think, supersede those now employed.

I believe it to be possessed of all the good properties of chloroform, and in a great degree free from those which are objectionable. It is equally pleasant, potent, and speedy in its action. The anæsthesia produced by it may be rendered as profound and as prolonged as may be wished. While a smaller quantity of it than of chloroform will produce a sufficient degree of insensibility, a larger quantity may be given with impunity. The state of collapse is not so great. The animal may be recovered from a more dead-like condition than where this is induced by chloroform; at the same time the process of recovery is more rapid, and it is unattended by any of those distressing symptoms so often witnessed in animals rallying from a large dose of chloroform.

The substance is the *chloride of olefiant gas*, as named in "Fownes' Manual;" the hydrochlorate of *chloride of acetylene*, or *oil of olefiant gas*, in the eighth edition of "Turner's Chemistry;" and formerly called *Dutch oil*, or *oil of the Dutch chemists*.

In appearance and smell it is not very dissimilar from chloroform, but in composition it differs most materially. Chloroform is composed of two atoms of carbon, one of hydrogen, and three of chlorine, with a boiling point of 140 degrees, the specific gravity of the liquid being 1.410, of the vapour 4.2; while the chloride of olefiant gas is composed of four atoms of carbon, four of hydrogen, and one of chlorine; its boiling-point is 180 degrees; the specific gravity of the liquid 1.247; of the vapour 3.448; constituting differences which are very important, and sufficient, I believe, to explain the fact of its superiority. THOS. NUNNELEY.

### Advertisements.

#### GENESEE

### Mutual Insurance Company,

CAPITAL, \$600,000.

THIS well-known Insurance Company, having extended its business into this Province during the last year, has appointed Mr. McDUGALL, one of the Editors of the "Agriculturist," Agent for Toronto and Vicinity.

The Company is established on the soundest and most approved principles; as the success which has attended its operations, since its establishment, thirteen years ago, fully prove. Very hazardous risks are not taken; and the Company will not insure in one risk more than £1,250, nor more than £1,500 upon property so situated as to be exposed to destruction by one fire. No Insurance will be taken to a greater amount than two-thirds the value of the property. These, with other precautions strictly observed, have made this one of the *cheapest* and *safest* Companies to be found.

The high character which the Company has obtained, for honourable dealing and promptitude in settling losses, renders it worthy the notice of all Canadian Insurers.

Agency for Toronto, &c., at the Office of the "Agriculturist," South-west Corner of King and Yonge Streets.

Toronto, April, 1849.

**NEW CARRIAGE FACTORY.**

**WILLIAMS & HOLMES**

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

Toronto, January 1, 1849. 1-tf

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

**CHOICE FRUIT TREES,**

*Rosebank Nursery, near Amherstburg, C. W.*

**THE Proprietor** has for sale a most extensive assortment of all the choicest kinds of Fruit Trees, consisting, in part, of 190 varieties of Apples, 130 of Pears, 70 of Peaches, 70 of Plums, 50 of Cherries, 10 of Apricots, 10 of Nectarines, 25 of Foreign Grapes, native Grapes, Quinces, Gooseberries, Currants, Raspberries, Strawberries, Almonds, Chesnuts, Filberts, Mulberries, &c., &c.

Also, a fine collection of Ornamental Trees and Shrubs, Roses, Tulips, Hyacinths, Pconies (Tree and Herbaceous), &c., &c.

New descriptive priced Catalogues will be sent to all post-paid applicants. Specimen Trees of every variety cultivated have been planted out, which are mostly in a bearing state, and from which the scions have been cut, offering a guarantee of the correctness of the kinds, which few Nurseries possess.

Trees will be carefully packed so as to carry any distance with perfect safety, a small extra charge made for packing, and they can be forwarded with dispatch to any part of the Province by the Propeller "Earl Cathcart," which will ply regularly during the season between Amherstburg and Montreal, touching at Port Stanley, Toronto, Kingston, &c.

Orders should be sent early, to ensure their going by the first trip of the Propeller. Cash or proper references should be sent with the order.

JAMES DOUGAL, *Proprietor.*

Rosebank, near Amherstburg, March 23, 1849. 4-2ins.

**SEEDS! SEEDS!! SEEDS!!!**

GROWTH OF 1848.

**JUST RECEIVED** by the Subscribers, *via New York*, their usual supply of fresh ENGLISH GARDEN, FIELD, and FLOWER SEEDS, among which will be found the following varieties of

**TURNIP SEED.**

Purple-top Swede,	Yellow Aberdeen,
Skirving's do.	White Flat,
White Globe,	Green Round,
Early Stone,	Red do.

**CHOICE FLOWER SEEDS.**

17 100 Varieties—including Annuals, Biennials, and Perennials.

Country Merchants supplied with any particular kind Seed they may require, put up in papers, upon moderate terms.

LYMAN, KNEESHAW, & Co.

Toronto, March 24, 1849. 4

**JOHN M. ROSS,**

**AGENT** for HALL'S PATENT MOULDING AND PRESSING MACHINE; also, for the GENESEE AGRICULTURAL SEED AND IMPLEMENT WAREHOUSE, Rochester, N. Y.

City Wharf, Church Street, Toronto: 20th March, 1849. 4

**GARDEN AND AGRICULTURAL SEEDS.**

**THE Subscriber** begs to inform his friends, and the public in general, that his stock of fresh Garden and Agricultural Seeds for the spring sowing is now complete. The Subscriber's long and practical acquaintance with his business, enables him to select only such kinds of seeds as are most suitable for this climate. The vitality of each sort is fully tested before offered to the public; new varieties and such as are raised in greater perfection in Europe, are annually imported from sources that can be relied on.

Country merchants, and others, wishing seeds to sell again, can be supplied on the most moderate terms.

Cabbage, Cauliflower, Broccoli, Celery, and Tomato plants in their season, carefully packed and forwarded according to order.

JAMES FLEMING, *Seedsmen and Florist, Yonge Street, Toronto, March 1, 1849. 26 1-m*

**ADELAIDE ACADEMY,**

FOR THE EDUCATION OF YOUNG LADIES, *Corner of Bay and Wellington Streets, TORONTO.*

**THE next Session** of Adelaide Academy will commence on THURSDAY, the 4th of January, with Lectures on Chemistry and Astronomy.

Pupils are received at any time during the year, except from the 1st of July to the 24th of August.

Competent and experienced Teachers are engaged to give instruction in all the solid branches of an English Education, in Instrumental and Vocal Music, Drawing, Painting in Water Colours, Oil Painting, Miniature Painting, &c.

Lectures will be given to the classes in Natural Philosophy, Chemistry, Astronomy, Physiology, and Biblical History.

The Academy is divided into four departments, with experienced Teachers over each.

Board, . . . . .	£0 10 0 per Week.
Tuition in English Studies . . . . .	1 0 0 " Qr.
Board & Tuition in English Studies	26 0 0 " An.

Pupils attend the Church which their Parents or Guardians direct.

**REFERENCE**

Is politely permitted to—

- The Honourable The Chief Justice.
- The Honourable Robert Baldwin.
- The Honourable Mr. Justice Sullivan.
- The Honourable J. H. Price.
- Henry Ruttan, Esq., Sheriff N. D.
- W. B. Jarvis, Esq., Sheriff H. D.
- W. S. Conger, Esq., Sheriff C. D.

Rev. Dr. Richey, Rev. E. Wood, Superintendent of Missions; Rev. H. Esson, A.M., Professor in Knox's College; and to numerous patrons throughout the country.

Cards, giving particulars can be obtained at this Office, or at the Academy.

J. HURLBURT, A.M., *Principal.*

Toronto, 14th December, 1849. 1