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THE AGRICULTURIST

AND CANADIAN JOURNAL.

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

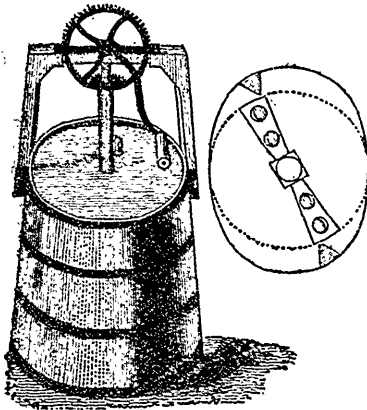
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VOL. I.

TORONTO, APRIL 1, 1848.

NO. 6.



FRAER'S PATENT CHURN.

If the Churn of which the above is a representation, do as well in practice as it promises in theory, it may truly be called a "labor-saving machine." No doubt some of those wicked people who would deceive us into the belief that *they* are fond of hard work, "not having the fear" of the ladies "before their eyes," will denounce this churn as encouraging laziness! We have heard such objections when it was proposed to lighten the labors of the housewife! Send such a man to the tread-mill for a month, feed him on *buttermilk*, and then he will be too well treated. "Them's our sentiments." Melancthon studied grave points of theology with a book in one hand and the edge of a cradle, which he incessantly rocked, in the other; and now, thanks to Mr. Fraer, the housewife can carry on this latter domestic operation at the same time that she is making the "butter come"—an achievement not less important to mankind, and heretofore, under such circumstances, quite as difficult as the study of polemics.

The main points in which this differs from all previous churns, are the oval form, and the triangular pieces of wood projecting inwards from each end, or rather side of the barrel. We have seen *round* churns, with a shaft, to which arms were attached, and wheels for giving it a rotary motion similar to the above, but after two or three turns the cream acquired the same velocity as the arms, and would whirl for hours, without being broken or producing butter. Here the cream is set in motion and driven against the breaks, (as seen in the sectional view,) from which it is thrown back upon the wings or arms of the shaft. These are flat, the front edge being lower than the back, so as to lift or throw up the cream, thus exposing every part of the contents to the action of the air, which is found very essential to the speedy and profitable production of butter. The lid is divided into two parts; the

frame is readily taken off, and the butter easily got at. The cut, (the section shows the appearance as you look down into the churn,) explains every thing else about it with sufficient plainness.

A great number of respectable farmers in the Gore District have used Mr. Fraer's churn during the last season, and testify to its superiority over every other. It took the first prize at the last Provincial Fair, but *we* have not tried it, and therefore can't say more in its favor till the grass comes and the cows give a little more milk, when we hope to put the one in our possession to the test; in the meantime, any person, by calling at our office, can see the article, and if they will bring three jugs of cream, we will give them *two* to try it with.

The ground plans, explanations, &c., of the Italian Cottage presented in our last, not being quite ready, will appear in our next number. We have heard of several builders and others, who have expressed high approval of this beautiful design, and are anxious to see the internal arrangements.—They shall be gratified.

TRANSPLANTING FERNS.—Make choice of spots of ground which have a partial shade from large trees in the summer months, say in half acres, and have them trenched; should the land be very strong, a good layer of peat or bog earth should be laid on, so as to be mixed with the soil previous to planting. The plan I have found to answer best is this—I have the land in readiness to receive the roots, either in March or April; I then go into the woods, where I have seen ferns thriving in the summer months, and have them dug up in large square masses; these are planted immediately at about three feet apart.—In addition to the *Pteris aquilina*, I would also recommend *Aspidium aculeatum*, which is perfectly evergreen—the fronds continuing through very severe winters, and if not destroyed by cattle, they linger on till the following summer. It will be necessary to enclose the patches so planted with park hurdles, for the purpose of preventing the cattle from spoiling them, or until the plants are well established.—*Gardeners' Journal*.

FOWLS—M. Saccé, of Neufchâtel, in Switzerland, gives an account of some experiments in the feeding of domestic fowls. He states, first, that fowls to which a portion of chalk is given with their food, lay eggs, which are remarkable for their whiteness. By substituting for chalk a calcareous earth rich in the oxide of iron, the shells become of an orange red colour. Secondly, he informs us, that some hens fed on barley alone would not lay well, and that they tore off each other's feathers: he then mixed up with the barley some feathers chopped up, which they ate eagerly, and digested freely. By adding milk to the food, they began to lay, and ceased plucking out each other's feathers. He concludes that this proceeding arose from the desire of the hens for azoted food.

WHITEWASH FOR WOOD.—1 bushel lime, fresh burned; 1 lb. white vitriol; 1 quart salt, to be well mixed with warm water. This whitewash is scarcely affected by weather.

Agriculturist and Canadian Journal.

TORONTO, APRIL 1, 1848.

MODEL FARM AND SCHOOL OF AGRICULTURE.

We stated in our last that we would propose a scheme in this number, by which an Institution for the instruction of Farmers' sons may be speedily set in operation. As to the necessity for it, the advantage of it, and the right which the farmers of the country have to insist upon the aid of the Legislature in the establishment of such institutions, we trust we have said enough already—at least for the present. As collateral evidence in making out our case, before the country and the Government, we are glad to be able to present our readers with a few papers from the pen of Mr. Buckland, containing a brief description of the principal institutions which have been established in other countries for the advancement of agricultural science. Wonderful as it may appear, that an art so common-place and vulgar, that a science so simple and uninteresting as that of agriculture—which serve no other purpose than to provide the human animal with food—should be considered worthy the attention of grave statesmen and kingly rulers, it is nevertheless true! The thing, therefore, is not a mere experiment.

But we come to the practical question before us; how shall we make a beginning in Canada? The following will perhaps be found a good, if not the best plan. Let a stock-book be opened. The amount to be raised should not be less than £6000. It might be divided into 600 shares of £10 each.—This would form a fund to purchase land and to erect the necessary buildings. The shareholders should elect annually, from among themselves, a suitable number of Directors, who might have the general supervision and control of the Institution. The fixing of the amount of fees to be paid by students, authorising and limiting the expenditure in experiments, buildings, machinery, importation of animals, seeds, &c., and generally to regulate the expenses and provide for the wants of the establishment, (leaving the mode of conducting the education of the pupils and operations on the farm, entirely to the judgment of the Head Master or Principal,) should form the chief duties of the Directors. They should, in conjunction with the Principal, draw up a yearly report, embracing every thing that had been done of any interest, which should be laid before the Legislature, and published for the information and benefit of the country at large. The Principal, or whatever he might be called, should be the person who held the Chair of Agriculture, in the University. His lectures at the University, (which might be confined to a winter course,) need not interfere with his duties at the Agricultural School. In addition to the position and influence the Professorship would necessarily give him, the salary, which ought to be liberal, would go far towards paying for his services at the Farm. As it would be indispensable in this country, that a sort of general education should be imparted to the pupils, as well as instruction in agricultural science, a competent teacher for the branches required, would also be necessary. A course of lectures in Agricultural Chemistry, and also in Botany, or Vegetable Physiology, &c., might be delivered to the more advanced students, by the Professor of Chemistry, and the Professor of Materia Medica, in the University, who, if the institution were within six or eight miles of Toronto, could easily attend for that purpose. Now, if in addition to this portion of the educational machinery, the Legislature would make an annual grant—or what would be far better, set apart a sufficient quantity of public land for that purpose, as an endow-

ment,)—say £800 or £1000, an Agricultural School and Model Farm might be set in operation, on a scale that would effect immense good for the country. The educational department would thus be provided for, and a sum left to meet the pecuniary loss of the experimental department. This much assistance from Government will be, as it appears to us, absolutely essential.

Then, let the profits of the farm and the fees from students be applied in the first place to the payment of the expenses of management and hired labor; next to the payment of 6 per cent interest to the shareholders, and (if there be any left) the remainder expended in improving the farm, extending the buildings, &c. The Principal and Directors should be incorporated. It would probably be a good provision if government would agree to purchase the stock at the end of five or seven years, and assume the management, should the shareholders feel desirous of selling out, but not to allow them any interest. This would remove risk, and the requisite number of farmers to take up the shares, would be more easily found.

We have here sketched the outlines of a plan upon which we believe it quite practicable to establish one good agricultural Institution, at all events. It has two aspects. It is a government establishment, and is also an enterprise undertaken by individuals. If it were wholly supported and managed by government, we believe it would fail,—we mean as to its object; if it were left entirely to individuals—to farmers—to the public, it would never be begun. The first great object, is to get the class whom it is intended to benefit, interested in it. This will be attained if they can be induced to take shares, and they can be induced to take shares if it be shown that they cannot lose. Again, the Directors who will be composed of the most intelligent farmers will manage the affairs better, and will give more confidence to the institution than any body that government could appoint. Except the general principle that it is essential to combine government aid, with the direct personal interest in the conduct of the Institution, of the farmers themselves, we are not particularly wedded to the above scheme. We shall be glad to hear the opinions of some of our readers. There are many questions of detail to be considered, but we must leave them for another occasion.

UNIVERSITY—AGRICULTURAL SCHOOL.

Objection to diverting the funds of King's College for this purpose, absurd.—Farmers must look after their own interests.—Blundering in the Act for promoting Agriculture, &c. &c.

To the Editors of the Agriculturist.

GENTLEMEN,—

I observe with pleasure that every issue of the *Agriculturist* shows additional evidence that you, as editors, and that certain gentlemen, as correspondents, are alive to some of the most important interests of our common country. The University Question, which has so long agitated the public mind, is at length at the disposal of those who so earnestly called for "University Reform." And though we may have the greatest possible confidence in the new ministry, not only as ministers of the crown, but as being the very parties who, with a majority of our representatives in Parliament, would settle the question the nearest to our liking; though these may be the very persons of our choice, we are not, on that account, to consider them immaculate. The hinge on which the late elections turned was, whether the University as a great Provincial Institution, endowed with funds for general education, (exclusive of Theology) was to be secured beneficially and inalienably to the people of Canada, and their posterity, or whether the endowment should be divided among several smaller institutions under the supervision of their respective religious denominations. As to the justness of the demands of either party, there still exists a difference of opinion; but all parties are professedly agreed as to the propriety of establishing a chair of Agriculture in the University, having connected with it an experimental farm. The question now arises, to what extent shall the funds of the University be applied for the encouragement of scientific Agriculture? Most unquestionably the University fund should be applied as liberally in the support of a Great Agricultural School, as in the Great School of Law or Medicine. "But," says one, "The present position of our country, does not require such an institution for the encouragement of Agri-

cultural Science. It would not be supported." I would say in reply, that at such a position cannot be proved until the experiment has been tried. But to judge from the support that Victoria, Queen's and King's Colleges have received from the Agricultural community, we have little reason to apprehend loss on that score. What farmer would not rather send his son to a school expressly adapted to his wants, than to either of the above-mentioned institutions. Establish it on a liberal and comprehensive basis, and its success is certain. There is nothing that could give a greater impetus to Agricultural improvement, than that farmers generally be led to see not only that Agriculture is really a science, but that it is one of the most respectable and interesting character. "But," says an M. P., a gentleman of the long robe by the way, "I am not willing to divert the University endowment from its original purpose—the intentions of the donor I hold sacred; however, I have no objection that an Agricultural professorship should be established in the University, as many farmers seem anxious for it. But I don't think the original donor ever intended that so considerable a part of the endowment should be applied for the benefit of Agriculture as would be required to keep up an experimental farm with a professorship." Farmers of Canada, shall we allow ourselves to fall into that common error of being satisfied, or put off with a mere skeleton recognition of our claims. To call in question the intentions of the donor on such grounds is indeed, miserable quibbling. What! that because the Agricultural and Medical students do not pursue precisely the same course in their scientific researches, though both aim at becoming scientific men, they shall not be equally entitled to the benefits of the great Institution! It is an absurdity too gross to need refutation. "The University is emphatically the property of the people of Canada;" and unless it can be shown that advancement in the science of Agriculture is not as essential to the general prosperity of the Province, as advancement in the science of Medicine or Law, as agriculturists, we should never relinquish our claims.

The truth is that unless farmers look vigilantly after their own interests, they will be neglected as they have been hitherto. At the present time there is no class whose claims could be more justly advocated by the Canadian Statesman, none whose interests are so identified with the general interests of the country. Indeed the prosperity of every country seems to increase or languish in proportion to the attention and encouragement given to Agriculture. With the conviction that this view of the subject was foremost in the minds of our legislators, farmers have hitherto been too easily satisfied; they could not conceive it possible that a body of intelligent men could be influenced by such short sightedness, as would induce them to neglect that class of the community whose prosperity is so essential to the existence of every other. But so it is, and may be accounted for by the fact, that among 84 representatives, in our provincial House of Assembly, there are not ten members who depend upon agriculture for a livelihood, or as an immediate source of profit. Their sympathies are not in common with ours, they are unable to conceive the difficulties to be combated by the Farmer. In anticipating the probable character of future legislation in relation to agriculture, we may judge a little from the past.

In an Act for the encouragement of the science of Agriculture, &c., passed March 29th, 1845, will be found the following clauses:—That "a proportion of the District Bounty shall and may be granted to each County, Riding, or Township Agricultural Society, and paid to them by the District Society, in proportion to the money that each County, Riding, or Township Society shall have subscribed." In the 5th clause of the same Act—"And be it enacted, that when County, Riding, or Township Societies shall have been established in any District, the Treasurer of such County, Riding, or Township Societies, shall, on or before the first day of September in each year, pay over in current money of this Province the amount subscribed by the said Societies, into the hands of the Treasurer of the District," &c. The 8th clause reads as follows:—"And be it enacted, That if the Treasurer of any Township Society, shall on or before the first day of July in each and every year, pay any sum of money into the hands of the Treasurer of the District or County Societies, he shall be entitled to receive the same again so soon as the legislative grant shall have been received, with a proportion of the Legislative Grant equal to the amount so paid, or in proportion to what shall fall to their share upon an equal division being made in proportion to the sums paid in by the several Societies in the District or County." Such careless blundering as is exhibited above, is a disgrace to our Statute Book. By the last clause cited, any sum no matter how large, and no matter whether it be made up of the subscriptions of a Township Society, or a sum borrowed and handed over to the District Treasurer, in the name of such Society, the Government bounty can be claimed in proportion to the sum thus handed in. The contradiction and absurdity of the different times of payment, you have already alluded to.

Now have we any guaranty that the present Parliament will legislate any better for us? We have a guaranty that they will, it is this:—the increasing intelligence of the people. The farmers begin to see their just rights and will not tamely submit to be deprived of them. While writing, I observe the following in a late No. of the *Toronto Globe*, which is lying before me. After giving notice of a meeting for the formation of a Farmers' Club in York Township, he says: "We shall be glad to hear of a large turn-out; the farmers must meet together and devise means to advance their own interests or expect to find them neglected."

I cannot close this communication without observing that in my opinion a greater favour could not be conferred on the readers of the *Agriculturist* than carefully to collect at early periods such of the proceedings of Parliament as particularly interest the farmers of this country. The *Agriculturist*, not being the tool of any political party, is, I am inclined to think, the most proper medium for the discussion of such questions.

AGRICOLA.

Markham, March 17th, 1848.

"TAIL SICKNESS"—The tails of cattle sometimes increase in length to an inordinate degree. There is a popular belief that this elongation of the tail injuriously affects the animal's health. Youatt, Dick, and some other veterinarians, ridicule the idea of any disease being brought on by this cause. They admit, however, that letting blood by cutting off the tail, may in some cases afford relief to animals suffering from diseases brought on in various ways; but they hold that the same benefit would follow from taking the same quantity of blood from any other part. We presume that the amputation of an inch of the tail, has but little effect in any way, excepting that suggested by the writers referred to. Formerly it was the belief that the *palsy* in cattle was caused by "tail sickness," and superstitious people in some instances resorted to a charm to effect a cure. A piece of turf on which the animal had trodden was hung on a stake, accompanied by incubations, and a "black cat" was made to pass three times around the cow's body, "over the back and under the belly." If the cat struggled and scratched smartly, she generally got away by the time she had been round three times, and the necromancers were convinced that the bewitching devil had passed into her.—*Alb. Cult.*

BEST MANNER OF WINTERING STOCK.—At a late discussion in relation to the above subject, by the "North Stockbridge (Mass.) Farmers' Club," it was almost the unanimous opinion of the members, that it was best to feed wholly under cover, as being most economical, both as to saving of food and manure. Several farmers spoke of the benefit of feeding cows "rye mush" for a short time before they calve. It was also the general opinion that much loss was sustained by farmers, from their stock being allowed to get poor at the setting in of winter, and it was advised to guard against this by feeding well at first. It was thought that hay was generally cut too late. It was advised to feed stock a little at a time and often—five or six times in twenty-four hours.—*Cultivator.*

INFLUENCE OF THE PRESS ON AGRICULTURAL IMPROVEMENT.—Mr. Payson in his address before the Essex county (Mass.) Agricultural Society, says—"To enumerate all the improvements which have been made in agriculture for the last half century, would take too much time. One, not only an improvement in itself, but the basis of all other improvements, must not be omitted, and that is the diffusion of agricultural knowledge by the newspaper press. Slowly, silently, almost by stealth, without the knowledge of the man himself, this mighty engine undermines old prejudices, and teaches the farmer that however independent he may be, he is not so as that the experience of others will not profit him. Most of us have become willing to seek directions even though they may be contained in a book. We are becoming more like liberal, freeborn and aspiring men."

In relation to the same subject, Mr. I. S. Hitchcock, in his address before the Oneida county (N. Y.) society, observes—"A medium of communication between farmers was found to be indispensable to the advancement of their interests, and the periodical agricultural press was established. That agricultural journals are among the most decided, and least expensive means of promoting agriculture, no one who has been favoured with their perusal for any length of time, will pretend to deny. While their influence has been highly beneficial, they have injured no one, and since their utility has been fully tested by experience, that farmer is guilty of an unpardonable inattention to his true interests who neglects to provide himself with a well conducted Journal of this kind. I am aware there is a prejudice against what some are pleased to call book-farming. And what is this book-farming in relation to which such unfounded and untenable prejudices prevail? Farmers communicate to each other the results of their experience in raising horses, cattle, &c. The results are committed to paper, go through the press and become a book, and those who choose to be aided by the experience of others, as those detailed, are guilty of book-farming."—*Albany Cultivator.*

MEETING OF THE YORK TOWNSHIP AGRICULTURAL SOCIETY AND CLUB—MR. BUCKLAND'S LECTURE RESOLUTIONS, &c.

On the evening of the 16th of March, a meeting of the Farmers of York Township took place, according to announcement, at Powell's Tavern, Yonge Street. About forty were present. As usual on such occasions, one or two hours were lost in waiting for those who ought to have made it a point to be present at the proper time. W. Baldwin, Esq., (brother of the Hon. Attorney General,) was called to the Chair. The Chairman referred to Mr. McDougall (of the *Agriculturist*;) for an explanation of the object of the meeting, who stated that he believed it was understood that the Farmers were met on that occasion for the purpose of hearing a Lecture from Mr. Buckland, whose name and reputation they were already acquainted with, and whose remarks he had no doubt would convey instruction, and be listened to with pleasure by all. The Society had some business to transact, but he supposed that would be deferred to a later period of the evening.

Mr. Buckland being called upon, begged permission, as the room was not very large, and as he wished not to be formal, but to make his remarks as familiar and conversational as possible, to be allowed to sit at the table during the few minutes he should claim their attention. This request was at once assented to, and Mr. B. began by alluding to the character in which he came before them, the objects he had in view in coming to the Colony, and the disappointments he had met with since his arrival. Party feeling apparently ran so high, there was so little unanimity and so much apathy, among the agriculturists of the country, that he despaired of being able to carry out any of the plans he had contemplated. As he did not leave England because he was unable to live there, when he found the prospect of a practical realization of the objects he had in view gloomy and forbidding, he made up his mind to return. Two or three friends, however, advised him to remain and endeavour to sound public opinion more fully. Mr. Buckland further stated, that he came out here expecting to become a British Canadian, to live and die here—to make Canada the home of his children, and to devote his energies to the advancement of her agriculture—a pursuit in which he delighted, and which he had for many years made his hobby. He had intended to establish a Model Farm and Agricultural School, out of his own resources, but judging from what he had seen and heard, he felt that the undertaking would be hazardous—that the risk would be too great for the means of one individual. After some further remarks by way of introduction, Mr. B. said he would proceed to make a few general remarks, in a familiar way, upon the advantage of a knowledge of science to farmers. We are not able to present more than a brief outline of his lecture.

Mr. B. observed, that in a single address he could only refer in general terms to the connection between the principles of agriculture and those of the physical sciences. His observations would necessarily be, in some degree, discursive, and he wished to make them as much as possible, plain, practical, and suggestive. Agriculture, he observed, was a complex and difficult subject. The art of the farmer required him to understand the character and composition of the soil he cultivates—the different crops it produces, and the animals he rears and domesticates—all of which involve considerations of deep scientific interest. The differences in soils, as regards mechanical texture, density, colour, capability of imbibing and retaining moisture, and also heat, were matters familiar to all; and these differences were well known to affect most materially the practice and results of the farmer. The surface soil of the earth had in a great measure been formed by certain natural agents—mechanical, chemical, and vital, from the subjacent rocks; and here the art of husbandry was seen to be intimately connected with that most interesting and useful science, geology—which treats of the formation and stratification of the crust of our globe. The geology of England, for instance, had been so fully and correctly ascertained, that the various classes of soils upon the different formations, were so marked in large geological maps, as to be of great practical importance, not only to the civil engineer, but to the land valuer and the farmer. The lecturer observed further, that all fertile soils must contain some ten or a dozen different substances, and this was the case all over the world. Notwithstanding the diversity in the appearance of vegetation in different latitudes, occasioned chiefly by temperature, elevation, oceanic influence, &c., the constitution of the soil was every where pretty uniform. These considerations would point out the connection between agriculture and chemistry, meteorology and physical geography. Mr. B. then adverted to the chemistry of germination—the seed containing the inert germ, embedded in a mass of suitable food, which was called into requisition when vital activity commenced. The starch of the seed was converted by the vital force into sugar, and worked up into the structure of the young plant, which having now fixed its roots in the ground and sent up its stem and leaves into the air, depended entirely for its nourishment upon those two extraneous sources. The investigation

and explanation of these mysterious and wonderful processes, so deeply interesting to every inquiring mind, and of such immense importance to the gardener and farmer, in the management and manuring of their crops, can be undertaken with success only by the chemist and vegetable physiologist. Here again the art of culture must acknowledge itself dependant upon science,—that is, so far as it is a rational and intelligible pursuit, and not a mere empirical art. The subject of manures was next adverted to. One half of the cultivated crops consists in a dry state, of carbon, which is principally derived from the atmosphere, by the agency of the stem and leaves. Dr. Priestly, about 70 years ago, discovered that plants when exposed to sunshine, decompose carbonic acid—assimilate the carbon and exhale the oxygen.—The lecturer then stated some curious and interesting facts and calculations taken from the most reliable authorities as to the source, amount and reproduction of the gaseous food of plants. The amount of carbon (one-half,) existing in the forests, grasses and cultivated crops of the world, must be inconceivably great. Europe alone, it is calculated, consumes annually 500,000 tons of sugar, which contains 250,000 of carbon. The carbonic acid existing in the atmosphere, although relatively small (only 10 parts out of 10,000) yet it amounted in the aggregate to the inconceivable sum of 5 trillions, 287 billions, 305 millions of tons. Here then was a copious supply for the wants of vegetation, and that supply was kept up by an arrangement as simple as it is beautiful and beneficial. Carbonic acid is generated and restored to the atmosphere by means of combustion, germination, ripening and decay of fruits, and by the processes of decay and putrefaction. The animal kingdom reacts upon the vegetable, and is the means of restoring to the atmosphere an incredible amount of carbonic acid gas. An adult of ordinary stature, it has been calculated, exhales in 24 hours no less than 15,000 cubic inches, or 6 ounces of this gas; which, taking the entire population of the globe at 760 millions, would amount to the enormous sum of 125 billions, 400 millions of tons. Mr. B. proceeded to explain how incessant cropping, without manuring, in some way or other, tends to destroy the fertility of the soil, and pointed out the necessity of deep and clean culture, proper rotations, and the restoring back to the land all the constituents of plants, which are taken away with every crop. He likewise referred to several of the recent agricultural improvements that had been effected in England, and said they should only so far be adopted in this country as may be shown, after careful experiments, are adapted to this climate, and can be made profitable in the general practice of farming. In pointing out the connection between science and agriculture, he was far from giving an undue importance to the former; as far as practicable, they ought to be indissolubly united. Practice and experience would no doubt afford the farmer much valuable knowledge, which, in the management of the farm, is essentially necessary, and which mere science could not alone impart. The shortest and surest way was to learn principles—a young man possessing these clearly in his head, would be able to farm advantageously on all soils and in all climates, as the principles of agriculture are everywhere the same, and are capable of universal application.

Mr. B. concluded, by observing, that he should be very happy to hear remarks from some of the farmers present, as more interest was always felt in conversation or discussion upon these topics, than in the observations of one individual. He should like to hear the opinion of those present, as to the interest likely to be felt by the farmers in the establishment of an institution for teaching to their sons the science and practice of agriculture. He begged to remark, however, that he was anxious to see the subject taken up upon its own merits, without any reference to him, or to the objects he had in view in coming to this colony. If there be not a desire in the minds of the agricultural class to take such a step on their own account, he felt convinced the enterprise would fail.

Franklin Jackes, Esq., (President of the Society,) observed, that in his opinion, an Experimental Farm where new varieties of grain could be tested, and improved agricultural implements tried, and where the best mode of cultivating the soil was adopted, so that the farmers could see all these things going on, and could see the profit of it, would do more than any thing else to improve the agriculture of the country. There is no way you can convince a farmer so easy that a plan is a good one, as to show him that he will make more dollars by it. He did not think so much of a Chair of Agriculture in the University, though a good school at the Farm might be of great benefit, and he thought in time would be supported.

Mr. Milne said, that he had long been of opinion, that Agricultural Schools and Model Farms should be established in every Township of the Province. His plan was to take the remainder of the *Clergy Reserves*, and devote their proceeds to this object. He thought the country would derive far more benefit from them than if left to be a subject of quarrelling and discontent among the different religious sects.

Mr. McDougall said he would be exceedingly glad to see a go-ahead spirit take possession of the farmers of Canada, to see them expressing their determination to avail themselves of all those means of improvement in their noble calling, which were so eagerly laid hold of by the other classes of society. While they remained indifferent to their own interests, they must expect to be overlooked and neglected, and instead of laws promotive of agricultural advancement, to find the statute book teeming with enactments for the protection of

others at their expense. After some further remarks on this point, Mr. McD. referred in terms of high praise to the ability and distinguished reputation of Mr. Buckland, who had so kindly attended on the present occasion, and entertained them with a comprehensive and most interesting lecture. Although in the presence of Mr. Buckland, he thought he might be excused for saying, that in addition to what he himself knew of Mr. B., he had it from those connected with the University, that no man could leave England better recommended, or with higher testimonials as to his fitness for the situation it was expected he would fill in this colony. He would be very sorry to see such a man as Mr. B. leave our country; it would have a bad effect both here and at home. He was sure there was plenty of room for the employment of his talents here, and it only required the farmers to become awake to their own true interests to open up a field for a hundred such men. Mr. McD. then detailed a scheme on which he thought an efficient model farm and a superior school for the education in a proper way of farmers' sons, might be got into operation, [similar to that sketched in our leading article of this number,] and expressed a wish to hear the views of those present on the subject.

After some further conversation the following resolutions were unanimously passed:—

Moved by Mr. J. Dew,
Seconded by Mr. Watson,

Resolved—That, in the opinion of this meeting, it is highly desirable that a Model and Experimental Farm be established in connection with a Chair of Agriculture in the University of King's College. Carried.

Moved by Mr. Milne,
Seconded by Mr. J. Snider,

Resolved—That the Editor of the *Agriculturist* be requested to publish the foregoing Resolution, and to solicit, through his paper, an expression of opinion on the subject mentioned therein, and the mode in which the object contemplated can best be accomplished, from the several Agricultural Societies and Clubs in Canada West. Carried.

W. A. BALDWIN, *Chairman*.

A vote of thanks was given to Mr. Buckland, for the interesting lecture he had so kindly favored them with on the occasion.

We were much pleased to find so great a desire for an efficient public Institution of the kind mentioned, as was manifested by the farmers at this meeting. We hope the friends of agriculture throughout the country will bestir themselves; that they will not rest satisfied till a comprehensive system of agricultural instruction is provided for the whole province. As a beginning let us establish one Institution, and to that end we shall be glad to hear the opinions of those Societies and Clubs at a distance, who will act upon the suggestion of the above resolution.

A FEW SEASONABLE HINTS.

Messrs. Editors,—I observe that you invite practical agriculturists to write for your journal, and as an humble promoter of agricultural improvement, I shall most cheerfully contribute from time to time such matters of practical interest as may be suggested to my mind, while engaged in the arduous business of Canadian farming. In performing this promise, I would beg to apprise your readers that I have only one object in view in thus coming before my brother farmers, viz: the advancement of the agriculture of this my native country. To make myself understood, by those whose business it is to follow the plough, I propose to divide my subjects under different heads, and shall as far as possible confine my remarks to practical topics, each of which shall in a great measure be adapted to the particular season in which it is written.

MANUFACTURE OF MAPLE SUGAR.—Those farmers who have extensive groves of sugar maple, doubtless find that it is more profitable to make a sufficient supply for domestic use, than to purchase foreign sugars. To make the business of manufacturing maple sugar profitable, it should be done upon a pretty large scale, and clean and suitable appliances should be employed. One great requisite in making a good quality of sugar, is cleanliness. The vessels for collecting the sap should be thoroughly cleansed before being used, and before the sap is put into the boiler it should be carefully strained. As the warm weather advances, and towards the close of the sugar season, I have found great advantage from the use of lime water, which should be mixed with the sap, at the rate of one gill of lime water to three gallons of sap. Lime water neutralises the tendency of the sap to become acid, and promotes granulation. Neither cake nor stirred sugar are equal in point of flavor and excellence with that made by the process usually termed draining. But before any steps are taken to convert the syrup into sugar, it should be cleansed from all impurities, which principally consist of small particles of dust. The ordinary mode of cleansing the syrup, and probably on the whole the best for general use, is to mix a fresh egg and a pint of milk with a sufficient quantity of syrup to make 20 lbs. of sugar. The egg should be well beaten, and the mixture should be applied when the syrup gets about blood warm, and by employing a slow fire, every impurity will rise to

the surface by the time that it is brought to a boiling heat. There are various modes of testing the exact period when the sugar will granulate, or in other words, when it is fit to put into the draining tubs, but the one that may be the most relied upon, is that of dropping a single drop of the hot sugar or syrup upon a tin vessel, and as soon as these drops may be readily removed from the vessel, and become hard like candied sugar, it is sufficiently boiled. It may then be put into tubs or boxes, which should be wide at the top and narrow at the bottom, and there be allowed to granulate, which process will require from three to four weeks. When this process is completed, holes should be bored in the bottom of the tubs, in order to let the molasses escape into a vessel underneath. The most approved method of converting maple sugar into an imitation of crushed loaf sugar of which I am practically acquainted, is that of placing over the sugar a number of layers of woollen blankets, which should be thoroughly saturated once or twice a day with pure water. The blankets will require frequent washing; and if the plan be practiced for a few weeks, the quality of the sugar will gradually improve, until it would be difficult to distinguish it from the best crushed loaf sugar.

A HOME DISTRICT FARMER.

Hessian Fly.—Ex-Governor Trimble of Ohio, President of the Board of Agriculture, speaking of the two causes of deficiency in the wheat crop of that State, the present year—Winter killing, and the Hessian Fly—recommends for the former proper *draining* and early sowing. With reference to the latter, he mentions no remedy, but gives the following short history of the insect:—

In the Eastern States, where this insect has been operating more or less upon the wheat crops since 1776, its origin and character have been a subject of investigation by men of science, and practical farmers, and the results of their investigations and discoveries have been published extensively in agricultural and other periodicals. In the transactions of the New-York State Agricultural Society for 1846, will be found an able article from the pen of Asa Fitch, M. D., on "the history, character, transformation and habits of the Hessian fly." He furnishes testimony, procured from practical farmers of the highest character in New York, showing that the Hessian fly was first discovered in that country about 1779; that it had, in all probability, been introduced with the shipment of Hessian soldiers (from whom it took its name,) brought to this country by Lord Howe, and landed on the coast of New York in 1796.

The progress of this insect, marked by the destruction it occasioned to the wheat crop, was at the rate of about thirty miles each year. In 1778, it made its appearance in Pennsylvania. In 1789, it reached Saratoga, New York, 200 miles from its original landing. "About the year 1801, it first made its appearance in the neighborhood of Richmond, Virginia, and in 1803 and 1804, whole fields of wheat were swept by it."

From this period until 1817, its depredations seem to have been so slight, as not to have engrossed much of public attention.

But in 1817, it is said to have renewed its ravages in New York, Pennsylvania, Virginia and Maryland, and to have been more destructive than at any time previous since its first appearance in this country.

From this period to 1840, its progress westward has continued, until it has made itself known and dreaded by all the farmers in the Western States; and according to the report of the Patent Office, was particularly destructive to the wheat crops in the Western States in 1844.

It is one of those scourges permitted by Providence, the continuance of which cannot be limited by the effort of man; and all he can do is, by becoming conversant with the habits of this foe to his prosperity, to learn to guard against its power to destroy.

MANURE FOR FRUIT TREES.—The best compost for "all fruit trees," without endeavouring to suit the specific wants of each particular fruit, is a compost of *peat* or *swamp-muck*, reduced, or rendered available to plants, by *unleached* wood ashes.—The peat should if possible be dug and carted out in winter—though it will answer if dug in the spring. As early in the spring as is convenient, mix thoroughly the wood ashes with the peat, in the proportion of five bushels of good hard wood ashes to one waggon load of peat. Let the heap lie a week, turn it over to incorporate more thoroughly, and in two or three weeks it will be fit for use. This compost, or manure, contains largely lime, potash, phosphate, and vegetable matter, the elements most necessary to the growth and health of fruit trees.—*Horticulturist*.

HEAVES.—Horses that have the heaves may be greatly relieved, if not cured by feeding them on straw, instead of hay. This receipt was a source of great profit to a large stage proprietor in New York, who bought up such animals at a cheap rate, and then used them as efficiently as if they were altogether sound.

CIVIL AND SOCIAL.

THE CURRENCY QUESTION.—CHECKS UPON
FRAUDULENT ISSUES.

One of the most prominent defects of our present system of banking, if system it can be called, is the absence of any adequate check upon excessive fraudulent issues of paper promises. The stockholders are not individually liable for the debts of the company—there is no comptroller to examine their affairs; what proportion the gold and silver in their possession bears to their indebtedness, to the amount of promises to pay issued, is left wholly to themselves to declare. On the honour and veracity of several money-loving corporations, no member of which feels any particular responsibility, hang the interests and happiness of thousands. For our part, we must say, that we dislike the security. In the Scotch banks, every member of the corporation is personally liable for the whole debts of the concern. This is a principle which should never be deviated from in the establishment and conducting of banking institutions.—It affords a double security to the public. It secures the bill holders from loss, in case of the corporation becoming insolvent; and it puts a check upon excessive or fraudulent issues of bank notes; thereby preventing those artificial inflations and spasmodic contractions of the currency, which are so destructive of all the interests of a country, except of the bankers by whom they are produced. If, on the contrary, all the members of a banking corporation are not personally liable for the debts of the company, not only is a strong temptation to make fraudulent issues of paper induced, but even the bankruptcy of the company, as it might be a profitable affair, may come to be viewed by them without horror, and with an avaricious complacency. A bank charter, in which the principle of personal liability is not incorporated, is but a licence to swindlers to rob honest industry of its rights. They may not take advantage of that licence; they may not contemplate fraud; but the public is at their mercy; and if their own blundering or avarice leads them into difficulty; and if it becomes a question whether they or their bill holders shall suffer, it requires but a limited knowledge of human nature, and especially when it appears in that lowest of all forms, a corporation, to enable us to judge on whom the infliction will fall.

But the principle of personal liability, though invaluable for securing the public from direct loss, is wholly inadequate to prevent excessive issues of paper, and all the ruinous consequences resulting therefrom. To prevent this, other means must be taken. All the operations of banks must be subjected to a rigid scrutiny and the most stringent supervision. Every shilling of their capital must be *bona fide* paid in, and none of it withdrawn. Their cash, accounts, assets, and their whole affairs, must at any moment be liable to the inspection of a public officer appointed for the purpose; and they should not be allowed to issue a single bill without the counter-signature of a government comptroller. Inflation of the currency would by this means be effectually prevented; and those fungi which at present disfigure our commercial affairs, would have no soil in which to plant themselves. In addition to this, all banks should be compelled to make periodical weekly, or monthly balances. Each debtor bank being thus compelled to keep its affairs straight with other banks, would be a salutary check upon the disposition to unwise speculation. In our next we propose to enter on a consideration of the interesting question—Is it wise, right, or sound economy, for the state to delegate to individuals or companies the power of controuling the national currency?

MR. SULLIVAN'S LECTURE ON THE CONNECTION
BETWEEN AGRICULTURE AND MANUFACTURES.

DELIVERED BEFORE THE MECHANICS' INSTITUTE, AT HAMILTON.

It is in some respects unfortunate that Mr. Sullivan should have assumed the character of political economist. The honourable gentleman possesses some versatility of talent; but we suspect he will not build a monument of fame, on his reputation as economist. The *animus* of his lecture is far from being complimentary to our sagacity, brightness, or industry as a people. He seems to regard us as a thrifless, non-progressive race of beings. He tells us that we must either manufacture for ourselves, or be satisfied to occupy a very infe-

rior position in the world. This, we believe to be a fair representation of the spirit of his remarks. In the name of the industrious classes of the country, we feel bound to repel the insinuation as derogatory to the spirit of national industry. We boldly challenge Mr. Sullivan to take the map of the world, and to point to a more industrious people on the face of the earth than the Canadians. Our great sin is that we do not manufacture, but that we buy from foreigners. We admit the fact, but we deny the inference drawn from it. We deny that it proves either a want of industry or of sound economy. Mr. Sullivan is very fond of taking "individual cases," to prove his position, that "we are poor, because we do not manufacture." It is not always possible to prove a general principle from an isolated case; but in this instance the case of an individual will prove a great deal more against, than for, Mr. Sullivan's theory. It is certainly strange that our want of capital should be given as a reason that we ought to extend our business, which we cannot do without an adequate amount of *additional capital!* But we must take an individual case. A farmer has sufficient capital to cultivate his farm profitably, but has not enough to enable him to carry out a scale of comprehensive improvement, which would render his farming operations *more profitable*. And here, it happens, that the individual case supposed, represents truly the actual condition of a very large class of our farmers. Mr. Sullivan pays a visit to his neighbour the farmer; and the latter unfolds to his distinguished visitor, the precise nature of his pecuniary condition. "Ah," says Mr. Sullivan, "I see, *want of capital* prevents you from conducting your farm in the most profitable manner. But you are a bad economist; you will never get rich by farming alone. You must set up a woollen factory. I observe that your two sons who attend the grammar school, are clothed in foreign manufactures. If you send your money to foreigners, how do you expect to get any richer than you are at present? I tell you that you must set up a woollen factory." The farmer listens attentively, and is captivated with this new project for getting rich. He replies with some hesitation: "I think your advice is sound, and I will endeavour to adopt it. If I had the profits of a woollen factory added to those of my farm, I should soon get rich. I thank you for good advice,—good morning." Mr. Sullivan walks to his carriage with all the dignity of a philosophical economist, and genuine patriot. The farmer is elevated with this new scheme for getting rich, and determines to realize the happiness that is in store for him. He has never gone to the bank to borrow money, but his neighbour Col. D. has; and as the banks are discounting freely, why should he not borrow from them? He has a good farm, and so has his elder brother. He borrows £1,000 for six months, and his brother endorses his note. "Very accommodating people, these bankers," he says. He lays out the money in buildings and machinery. The building is half completed, and the banker must have his money. He has neglected his farming in attending to the erection of this building; and he finds that he has not half a crop to harvest. He has very little to sell; but the banker is inexorable; the money must be paid. A course of legal proceedings are gone through, and the half erected building and the portion of the machinery that he had purchased, come to the hammer. Times are hard, and his building and machinery are knocked down for £500. He thought his farm worth £2000, but the half of it fetches at auction, only £500. The great depreciation is the consequence of the money being required down.

Now this individual case, and Mr. Sullivan is particularly fond of individual cases, represents exactly the condition of Canada. We have not capital enough to employ in the procuring of the produce annually required for our consumption, and to manufacture that produce and convey it to market.

Mr. Sullivan's conclusions are all based upon the very questionable hypothesis that manufacturing would be more profitable than farming; or else they are founded upon a total misapprehension of the nature of the case. The same capital and labour cannot at the same time be employed in agriculture and manufactures. If a thousand men and £50,000 are withdrawn from farming, and employed in manufacturing, they cease to be productive in their former capacity, and become productive in another. *If Mr. Sullivan will show that by such a transference of capital from agriculture to manufacturing, the amount of the annual products of the country, which constitutes its wealth and strength, will be increased, he will have proved his case;*

But we must take the liberty of characterizing his *ad captandum* arguments as a very dangerous kind of humbug!

If the evil of the country be a want of capital, surely we are in no condition to set up as manufacturers. Twenty thousand pounds would set in motion ten times as much labour if employed in Agriculture, as if employed in manufactures; and if manufacturing were twice as profitable as farming, still £20,000 employed in farming, would increase the annual productions of the country, 500 per cent more than if employed in manufacturing.

If want of capital be the evil of the country, it requires very little capital to purchase an acre and the rest of the materials necessary to set labour in motion, to commence raising produce from land; but it requires comparatively a large capital to set manufacturing labour in motion. Thousands in this country have won their way to a happy independence by farming, though they commenced with a capital worth only a few days labour; but no man can commence manufacturing with such a scanty capital, and hundreds who have attempted it, in some instances with what might in this country be called a large capital, have been ruined.

If want of capital be the evil of the country, we must increase our national capital by employing our labour in farming; until we have realized a capital sufficient to enable us both to employ labour in raising the produce annually required for our consumption, and in manufacturing it for ourselves.

LITERATURE.

THE MAGNETIC TELEGRAPH.

What mean the miles of glittering wire
Stretched out afar o'er hill and plain,
As if to string some massive lyre,
To ring out earth's redeeming strain!

It is a lyre, whose every string
Shall vibrate to the praise of Man;
Such tribute to his genius bring,
As ne'er was paid since Time began.

It is the master-piece of earth—
The climax of all human might—
When Man, forgetful of his birth,
Infringes on Jehovah's right.

It is the path where lightnings fly
Obedient to Man's lordly will,
Who forced them from their native sky,
And chained them down on every hill.

Once they were messengers of God,
And flashed through heaven's remotest span,
But now they've left their high abode,
To herald out the ways of Man.

No more we'll trust the carrier dove,
Or iron steed, or lagging gale,
But call the lightnings from above,
To spread the news and tell the tale.

They far outspeed the rolling Earth,
And put the car of time aback—
Before the Future has its birth,
'Tis past upon the spirit track.

That track—the great highway of Thought—
Where distant nations converse hold;
Ere word is said or deed is wrought,
'Tis whispered round and round the world.

From East to West—from pole to pole—
Wherever man has pressed the sod—
The every thought of every soul
Is omnipresent like as God.

It binds the nations all in one,
And thrills its pulse throughout the union,
Till every kingdom, tribe and tongue,
Shall live and act in full communion.

—N. Y. Tribune.

Frugality is good, if liberality be joined with it. The first is leaving off superfluous expenses; the last is bestowing them to the benefit of others that need. The first without the last begins covetousness; the last without the first begins prodigality. Both together make an excellent temper. Happy the place where they are found.

AGRICULTURAL INSTITUTIONS.

NO. II.

It appears that most, if not all the principal States of Germany have established institutions at the public expense, for the purpose of promoting agricultural education and improvement. Some of these establishments have been in operation for several years, and have been the means of directing the public mind to that great source of wealth and happiness comprised in a national agriculture, and also of preparing and qualifying young men for the important task of developing the natural resources of their native soil. It has been remarked by an intelligent traveller, who passed through the different states of this great confederacy, that a marked difference in the condition of agriculture, may be observed in those districts which come more immediately within the influence of these institutions.

One of the most celebrated German institutions, is that at Mægelin, in the duchy of Brandenburg, near Frankfort, on the Oder. It consists of a college for the education of youth, and a model farm of about 1200 acres, and is under the direction of M. Von Thaer, a well known scientific and practical agriculturist. The education imparted is both theoretical and practical. In the former department there are three professors, who lecture on mathematics, chemistry and geology, while due provision is made for instruction in botany, and the use of the various vegetable productions in the materia medica, the veterinary art, and entomology. The practical instruction is communicated by our experienced agriculturist, who in addition to the general superintendence of the farm, gives oral explanations in the fields of the various processes of tillage, of rotations, manures, vegetable development, &c., thus connecting the teaching and principles of science with the every day practice and phenomena of the farm.

The pupils are usually young men between twenty and twenty-four years of age; and the expense is about £60 sterling per annum. Besides which, each pupil provides his own bed and breakfast; consequently, none but the wealthiest classes can enjoy the advantages afforded at Mægelin.

The estate of Mægelin was given in charge to Von Thaer, by the King of Prussia, on easy terms. Its annual value was estimated at only £300, but in less than twenty years, in consequence of a superior system of husbandry being pursued, that sum had been raised to £1800.

To the institution is attached an extensive botanic garden, arranged according to the system of Linnæus, an herbarium, containing a large collection of dried plants, with models of machinery, and anatomical preparations of the domesticated animals reared on the farm. The various implements and machines employed in tillage, are made by machinists in the immediate vicinity of the institution; and the pupils have the advantage of observing their mode of manufacture, and of inspecting the methods by which they are put together.

In the North of Germany the most flourishing agricultural establishment appears to be that of *Hohenheim*, in the kingdom of Wirtemberg, in the vicinity of Stuttgart. The building consists of an old palace, beautifully situated on elevated ground, and surrounded by a farm of not less than 1000 acres. There are here two classes of students. The expenses of a pupil belonging to the superior class amount to about £50 a year; but natives of Wirtemberg are admitted at a lower rate. The object appears to be to train young men for managing and cultivating the larger estates of proprietors, and they are, consequently, instructed thoroughly both in the theory and practice of agriculture. They are required to inspect and superintend all the various operations on the farm; but it does not appear that they are called upon, as at Grignon, to take an actual part in manual labour. Twelve professors are appointed, who lecture on all the different sciences that have a bearing on agriculture, including those subjects usually comprehended in a good mercantile education. The lectures are so arranged, that they can either be all attended in the course of two-half years, or are spread over three or four, according to the acquirements of the pupils when they enter the institution.

The inferior class of students appear to be little more than common labourers; they pay a very trifling sum for their maintenance, and have the advantage of attending a portion of the lectures.

This institution has likewise a botanic garden, a natural history museum, a set of skeletons illustrating the anatomy of the domestic animals, a collection of seeds and various kinds of wood, and a well assorted library of works connected with agriculture and its cognate sciences.

"Besides (observes Dr. Daubeny) the fields set apart for the ordinary methods of action, there is here a portion reserved for experiments; but I could not discover that it was applied to any further use than that of introducing specimens of plants not in general cultivation, which have been recommended on the score of their agricultural value."

"At Grignon the director excused himself to me for not undertaking experiments, alleging, that his institution was supported by a number of shareholders, who naturally regarded it as an indispensable condition, that the land should yield a profitable return; but he remarked, that as the institutions in Germany, such as those of Mægelin and of Hohenheim, were maintained by government, researches calculated to throw light upon the principles of agriculture might be expected to emanate from them."

A similar institution to that of Hohenheim, was established some years ago by the King of Bavaria, near Munich. The domain belonging to the royal palace of Schleissheim, was given up for the purpose of a model farm. This institution appears not to have prospered:—the number of pupils has been small, and the fees not adequate to command efficient instructors. Besides the soil is exceedingly poor, principally a loose sand, originally covered by stunted pine, a site unfortunately selected for the purposes of agricultural experiments, and education. A model farm ought at least to comprise several varieties of soil, and to be in point of natural fertility, a fair average of the country.

Schools of agriculture, as has been already observed, are dispersed throughout Germany; and have conferred many important advantages on the rural population. Dr. Bright, as long ago as the year 1820, observes in visiting an institution of this kind, set on foot by the patriotic Graf Festitis, on his estate at Keszthely. "The school was divided into three departments, viz., simple agriculture, mathematics in connection with the same, and the necessary knowledge of physics, as well as the veterinary art: for each of these, two professors are appointed, making in all six. The complete course of study was fixed at three years, during the course of which the students were subjected to an annual examination."

In the celebrated school belonging to M. de Fellenberg in Switzerland, agriculture has not been omitted; and a large number of the secondary class of pupils in that well known establishment, are regularly engaged in the practical operations of husbandry, besides attending to lectures on the principles of agricultural science, and practising the mechanical arts. In winter, when the labors of the field are in a great measure suspended, pupils are engaged during a portion of the day in threshing and winnowing corn, making baskets, chairs, sawing logs, and other in-door employments.

"It is admitted that, on leaving the establishment, the pupils of the higher classes are eminently moral and amiable in their deportment, that they are very intelligent, and that their ideas have a wide range; and though they may not be so advanced in science as some young men brought up elsewhere, they are as much so as becomes liberal minded gentlemen, though not professors. The pupils of the lower classes leave at the age of twenty-one, understanding agriculture better than any peasants ever did before, besides being practically acquainted with a trade, and with a share of learning quite unprecedented among the same class of people; and yet as hard-working and abstemious as any of them, and with the best moral habits and principles. It seems impossible to devise or imagine a better condition of peasantry."

There are, I believe, schools of agriculture in some parts of Italy; and Holland and Denmark possess establishments of a similar kind. Even Sweden and Russia have recently made exertions to improve their agricultural resources by means of well organized societies, and a more suitable system of instruction for their agricultural youth. I must defer to another paper some account of what is now doing for these objects in the British Islands.

G. BUCKLAND.

FEMALE EDUCATION.

[FOR THE AGRICULTURIST.]

Female education has seldom, in any age or country, received the attention to which its importance has entitled it. Mrs. Hannah More has very justly remarked, that "the influence of woman can scarcely be rated too highly." This influence, so powerful and so extensive, it is the object of education to increase and direct to the support of morality and religion.

One prominent defect in the education of girls is, that no special object is proposed, further than a knowledge of the elements of their mother tongue. No regular system of instruction has therefore been adopted. We have colleges for the education of young men, in which the same course of study is prescribed for all, whatever profession or calling they may intend to choose. Its excellence has been tested by the experience of ages, and sanctioned by all Christendom. The object proposed is the *discipline* of the mind. There should be similar institutions for the education of girls, in which, of course, the future sphere of life and wants of the pupils ought to be kept in view. As you justly remark, "The education of those who are to be the mothers of the next generation, is of the first importance." A knowledge of the subjects taught in Common Schools, is not sufficient. Something more is necessary for those who have the educating, the forming, and as it were, the *moulding* of the child, while it is as pliant as the melted wax, or as the clay in the hands of the potter. In such an Academy, call it a College if you choose, I would give the pupil a thorough knowledge of the common English branches, as the foundation of all solid learning. These are subjects required in every-day life, and must be learned. After these, or at the same time with them, the pupil ought to study general history, giving the outlines of the rise, progress, and decay of the various nations, from the earliest antiquity, with the distinguished personages who have flourished in each, followed by the history of particular nations, and the history of the Jewish and Christian Churches. Bacon has remarked, that "Histories make men wise." How many lessons of wisdom can be drawn from the

history of the past! From the constant examples of the great, the wise, and the good, kept before the pupil, he is led, sometimes it may be, unconsciously, to emulate them. By furnishing entertaining reading, the mind is also guarded against that most fascinating and pernicious of all kinds of reading—*novel reading*. Next may be introduced the natural history of animals, from the insect, the object of microscopic vision, through all their gradations, giving an account of their appearances, numbers, habits, ages, &c. Geology—imparting a knowledge of the crust of the earth—with the various formations, changes, hills and valleys, rocks and mountains, rivers, lakes, and oceans, the change of climates, fossil remains, &c. Chemistry—pointing to the ultimate elements of which all things are composed, and which regulate their composition and decomposition. Natural Philosophy—treating of the laws of motion and rest in masses or bodies of matter. Astronomy—teaching the magnitude, motions, distances, periods of revolution, and eclipses of the heavenly bodies—unfolding to the mind the most stupendous works of God. Physiology—showing us the wonderful mechanism of our frames, with their organs, the laws of health. Botany—giving a knowledge of the curious structure of plants, with their uses, and showing the wisdom and goodness displayed in their formation: the evidences of the truth of our holy religion. Intellectual and moral Philosophy—treating of the powers and reflections of the mind, and showing our duties towards God and man.

The facts and principles contained in these and similar works, when understood, lead the pupil by an easy and interesting train of reasoning to the proofs of the existence and attributes of God, as illustrated in Natural Theology. Experimental lectures and demonstrations should accompany the instructions in Chemistry and Natural Philosophy, and more general lectures upon History, Astronomy, Rhetoric, &c., and upon the various duties arising from our civil and social relations. The ornamental branches, and modern languages, should also receive their due attention, but, be so arranged, as to interfere as little as possible with the solid and more important studies. Daily compositions should be required in connection with the Grammar and Rhetoric, in the various forms of letters, journals, and essays. Such a course of study would furnish the pupil wherever she might be, with interesting subjects of reflection. They are sketches or great outlines, as it were of every department of the works of God, designed to be filled up by observation and reflection. They furnish the greatest variety of subjects for contemplation, and will, imperceptibly, draw out the mind into the most interesting and profitable train of reasoning.

H.

Toronto, 23rd March, 1848.

THE WOLVES OF THE AMERICAN PRAIRIES.

The sagacity of wolves is almost incredible. They will remain round a hunting-camp and follow the hunters the whole day, in bands of three and four, at less than a hundred yards distance, stopping when they stop, and sitting down quietly when game is killed, rushing to devour the offal when the hunter retires, and then following until another feed is offered them. If a deer or antelope is wounded, they immediately pursue it, and not unfrequently pull the animal down in time for the hunter to come up and secure it from their ravenous clutches. However, they appear to know at once the nature of the wound, for if but slightly touched they never exert themselves to follow a deer, chasing those only which have received a mortal blow. I one day killed an old buck, which was so poor that I left the carcass on the ground untouched. Six coyotes, or small prairie wolves, were my attendants that day, and, of course, before I had left the deer twenty paces, had commenced their work of destruction. Certainly not ten minutes after, I looked back and saw the same six loping after me, one of them not twenty yards behind me, with his nose and face all besmeared with blood, and his belly swelled almost to bursting. Thinking it scarcely possible that they could have devoured the whole deer in so short a space, I had the curiosity to return, and to my astonishment, found actually nothing left but a pile of bones and hair, the flesh being stripped from them as clean as if scraped with a knife. Half an hour after, I killed a large black-tail deer, and, as it was also in miserable condition, I took merely the fleeces (as the meat on the back and ribs is called), leaving four-fifths of the animal untouched. I then retired a short distance, and, sitting down on a rock, lighted my pipe, and watched the operations of the wolves. They sat perfectly still until I had withdrawn some threescore yards, when they scampered, with a flourish of their tails, straight to the deer. Then commenced such a tugging and snarling and biting, and squeaking and swallowing at the same moment. A skirmish of tails and flying hair was seen for five minutes, when the last of them, with slouching tail, and evidently ashamed of himself, withdrew, and nothing remained on the ground but a well-picked skeleton. By sunset, when I returned to camp, they had swallowed as much as three entire deer.—*Ruxton's Adventures in Mexico and the Rocky Mountains.*

Said Jack to Bill, "How many legs would a calf have, calling the tail one?" "Five," answered John. "No it wouldn't, for calling the tail one wouldn't make it so."

ANECDOTE OF SAVAGE LIFE.

A celebrated Malay pirate, whose sanguinary deeds had filled the Archipelago with terror, because violently enamoured with one of the slaves of a rajah living on the river Sarawak. After vainly endeavouring to obtain her from her master by offers of money and intrigues, he lay in wait for her, and ran away with her into the jungle. He had hardly passed his honeymoon before the rajah discovered his retreat, and he sent to the Malay to inform him that, if he would make his appearance at the audience upon a certain day he should have justice done him. The Malay chief, who was a man of undaunted courage, and who felt confident that the reputation he had acquired by his piratical exploits was alone sufficient to awe his enemies, consented to appear, hoping the arrangements might be made which would permit him to leave the jungle, and allow him to enjoy his new bride in quiet. On the day appointed, he appeared before the council, armed, and accompanied by his brother, both resting their hands upon the handles of their krissees, a movement which, among the Malays, proclaims no feelings of amity. In this attitude of preparation they walked into the audience room, which was crowded with a host of enemies. The council decided that, if, on a certain day, he would procure a specified sum of money, the girl should be his, and he should return unmolested. The sum named was exorbitant, but the Malay chief agreed to the payment, and was permitted to depart. When the day of payment arrived the council sat as before, and the Malay chief again made his appearance; but this time he came alone, his brother being absent on a piratical expedition. He had, in consequence of his violent affection for the girl, made every attempt to raise the stipulated sum, but could not succeed. He brought all that he could collect, but it fell far short of the sum which had been agreed upon, and he requested time to procure the remainder. The council consulted a while, and then stipulated that the chief, not having brought the sum agreed upon, should leave his kris as a pledge till the rest should be forthcoming. The kris that the chief wore was itself of great value, very handsomely ornamented with precious stones. It had belonged to his ancestors, and was, as they always are, highly prized; and they knew that it would, if possible, be reclaimed. The chief was most reluctant to part with it; but his love for his mistress overcame his scruples, and also his prudence. It left him unarmed amidst his implacable enemies. He pulled out his kris and laid it on the table upon the money, and was busy disengaging the sheath to add to it, when by a signal from the rajah, he was seized from behind. He started up, but it was too late: his trusty weapon, which had so often stood by him in his need, was no longer within his reach, and he was in a moment transfixed with a dozen blades, falling a victim to his love of the girl and the treachery of his foes.—*Marryat's Borneo.*

CAPTURING A PLAGUE AT FORTROSE.—Some two or three hundred years ago Scotland was visited with a pestilential scourge, which was, it is said, prostrating thousands to the dust. It went in the form of a black cloud from place to place. The Fortrose folks, however, seeing it approach their quiet and peaceable town, hastened to attach several linen sheets together, and just as the cloudy scourge was entering their good town they placed the sheets before it, and laid hold of it, and instantly tied the corners together, which they tightly kept until another party dug a large hole in the consecration ground which surrounds the Cathedral, where they succeeded in burying the pestilence, to the no small joy of the kingdom. After covering it with plenty of earth, a stone flag was placed over it, which is to this day seen and known by the people of the district at the spot where the great plague lies, that had been captured by their forefathers, by whom it is firmly maintained if the ground were once disturbed the pestilence would again take wing, and commit as much havoc as ever throughout the land. However the good citizens of Fortrose know otherwise than to meddle with an affair which might prove so fatal to themselves and their neighbours.—*Rose-shire Advertiser.*

A SLAVE-HUNTER'S CONSOLATION.—The Rev. Mr. Forsyth, a Presbyterian minister of Kentucky, held as his slave the wife of a Mr. Penny, of Ohio. Mr. Penny went for his wife, obtained her, and started for home on Saturday evening, having with him another woman and two men. On Sabbath morning, the minister, Forsyth, discovered the loss of two of his slaves, rode two miles, and started a man in pursuit, and went home to his pulpit labours. The pursuers overtook Penny and his company at a ferry when a fight ensued with pistols and clubs; but the fugitives defended themselves, and got clear. Mr. Forsyth, having preached and made his last prayer, started off in hot haste, on Sabbath afternoon, but found, on getting to the ferry, that his property had gone to Ohio. Mr. Forsyth consoled the man whom he sent in pursuit, and who got wounded in the scuffle, by saying that "we were not long for this world, and that there would be no negro stealing in the next."—*Watchman of the valley.*

A newly-arrived Hibernian was asked at dinner whether he would take some of the apple pie. "Is it houlson?" inquired Teddy. "To be sure it is," was the reply. "What makes you ask such a question?" "Because," said the new comer, "I once had an uncle that was killed with the apple-pie, and sure I thought it might be something of that sort."

EDITOR'S TABLE.

TO CORRESPONDENTS.

- W. E. W. Braunford. Yours of 19th, with cash, received. With regard to the difficulties you speak of, you are at liberty to use your best discretion in giving time, subject to the conditions mentioned in Mr. E's letter. Can you ascertain the names of those pretending to be our agents? If so, mention them in your next. The papers were sent you by stage.
- H. K., Berlin. We beg to state that we have plenty of back numbers on hand to supply subscribers for some time to come. Don't be afraid of writing too often. We feel much obliged for the interest you manifest in our publication.
- A Subscriber. We believe we recognise you from your "fist." Shall be happy to see the "article."
- T. B., Sandy Point. Too late for this number. All matter, except news, must be in the printer's hand at least one week before publication day. Shall appear in our next, with such comment as we are able to give.
- W. F., Smithville. Many thanks for your kindness. We have attended to the matters you mention. Names mentioned had not been sent by our agent. No room to answer your query at present.
- Other letters not requiring answers have been received.

IMPOSTORS.—Our agent for the Talbot District, Mr. W. E. Welding, informs us that two or three different persons had been through some neighborhoods in that District, within the last month, calling themselves our agents, and soliciting subscriptions, and in some cases offering our paper at less than \$1. Now, we beg to state, that all such persons whose names are not mentioned below, or do not appear hereafter on the first column of the first outside page, have no authority from us to act as travelling agents; and all who offer the *Agriculturist* at less than \$1 a-year, are impostors! Many persons have very kindly acted as local agents, and we hope many more will do so; but as they are always known to those who may subscribe through their agency, there is little danger of imposition from such sources. To protect ourselves and the public, we will hereafter publish the names of all our travelling agents in each number, and the Districts they are authorised to canvass. Those General Agents, therefore, who may have appointed sub-travelling agents in their Districts, will see the necessity of sending us their names forthwith, in order that they may be published. Our General Agents at present are: CHAS. PALMER, OSWALD FOSTER and STEPHEN CLOSSON, for the *Home District*; W. A. STEPHENS, *Wellington* and part of *Gore*; N. M. HARRIS, *London* and part of *Gore*; W. E. WELDING, *Talbot*; ISAAC ASKEW, *Western*; L. CROSBY, *Victoria*; J. HATCH, *Brack*; W. J. ROSE, *Eastern*; N. M. CONGOR, *Prince Edward*; JNO. GRACE, *Eastern Townships*, L. C.; H. SPENCER, *Midland* and *Newcastle*.

THE NEWCASTLE FARMER, is a useful agricultural monthly, of 16 pages, issued from the office of the *Cobourg Star*. The agricultural matter of this paper is chiefly made up of extracts from English journals—very well in its way, and probably interesting to old country farmers, but, as it appears to us, not just the thing for Canada. Many of the practices of Great Britain are entirely inapplicable, and much of her agricultural literature is unsuited to the soil, climate, and circumstances of this new country. There are, of course, many things there that we may adopt with great advantage, but we think Canadian agricultural papers should be something more than mere re-publications; we should endeavor to elicit facts, to elucidate principles from our own operations: in a word, we should give to our papers a *Canadian* character.

We have no jealous feelings towards our cotemporary; for we should really like to see agricultural journals becoming more numerous, and taking higher ground; but we must parry a sly thrust made at us in his March number. He says, we "are fast losing our agricultural character;" and again, "its agricultural articles are like angels' visits, 'few and far between.'" "If it continues diverging in its present ratio, it will be 'The Agriculturist' but in name," &c. Now, we beg to say, that the *Agriculturist* contains nearly, if not quite as much agricultural matter in the month as the *Newcastle Farmer*, besides giving literary, scientific, and useful reading for the ladies, who are very ungallantly neglected by our cotemporary, and a summary of the news and markets. Our cotemporary comes out once a month with about 15 pages of agricultural matter. We publish twice a month, giving 10 pages exclusively to agricultural interests, and generally one or two columns in our other departments to the same object.

Three of our pages are equal to four of the *Farmer*, as we use a smaller type. There is less difference, therefore, between the amount of agricultural matter furnished by us and our cotemporary than from his statements the public would suppose. Every number of the *Agriculturist* contains more matter (more thousands of ems) in the agricultural department alone, than is contained in one half of the country newspapers altogether, apart from their advertisements! and yet our agricultural articles are proclaimed by our cotemporary to be "few and far between!" He ventures a word or two in our favor, but, as that Hamlet (whose name he mentions) has said, we "know a hawk from a hand-saw."

THE LADIES.

WHICH IS THE MAN?

" EDWARD YOUNG.

I see its pins, its chain, and rings,
Its eye-glass, and its trumpery things;
I see its whiskers—they are fine
Ornaments in the hairy line;
I see its coat; I see its hat;
I see its boots and its cravat—
If such a thing you chance to meet
Sauntering up Regent street,
The tailor praise who makes such suits,
And praise the artist of such boots.

I do not see him in his shabby dress;—
I see *him* in his manliness;
I see his axe; I see his spade;
I see a man that God has made;—
If such a man before you stand,
Give him your heart, give him your hand,
And praise your Maker for such men;—
They make this old earth young again.

—*Howitt's Journal.*

VILLAGE GOSSIP.

The vile and mischievous practice of gossiping so much indulged in by a certain class of females, as well as the absurd displays of would-be great people, are very well hit off in the following dialogue:—

"Who'd ha' thought it, Mrs. Dobbs?"

"You don't say so, Mrs. Dobbs?"

"Oh, but it's quite true. It must be. Besides, William heard it at the barber's shop."

"Well, now; do you know I always had my suspicions—there was always a something—a what-do-ye-call it sort of a look about the Browns, which I never liked. They say it was all along of the railways. But whether or no—that's the fact. John Brown's shop is shut up this morning. Depend upon that."

"Well, well," rejoined Mrs. Dobbs, "it's no more than I have always said it would come to. They always lived above their position. As Dobbs, my husband often said to me—'Nancy,' says he, 'mark my words, for all that them Browns hold up their noses like conceited peacocks as they are, pride will have a fall,' says he, 'pride will have a fall!'"

"And such goings on, Mrs. Dobbs, to be sure—such goings on. Parties, parties parties, from Monday till Saturday—the best joint at the butcher's, the crustiest loaf at the baker's, always bespoke for the Browns.—Well, they must be content with scraps of mutton now."

"If they can get even 'em. For as Dobbs, my husband, says, they will be sold out and out—down to the baby's go-cart. Deary me, deary me!"

"Only to think. How different it was this time last year, Mrs. Dobbs, to be sure. Mrs. Brown, with her new velvet dresses—finest Genoa—and Mr. Brown, with his new gig—and Master Brown, with his new pony—and Emma Brown, with her new Polka jacket."

"And even the errand boy, with lace round his hat, Mrs. Dobbs."

"But everybody could see what was coming. It could not go on so forever. That's what I said. But Brown was always such a rash man."

"Never would take anybody's advice but his own—there, it was no later than Wednesday week, when my husband, Dobbs, civilly asked him in the most neighborly way in the world, if he wanted a little conversation with a friend about his affairs, like, as they were going backward visible—what do you think the brute said? 'Dobbs,' said he, 'you and your wife go chattering about the parish like a couple of human magpies, only the birds' instinct is better than your reason.' Ugh—the brute!"

"Brute, indeed, Mrs. Dobbs—you may well say that. Birds' instinct, forsooth!"

"Set him up to talk of reason. Had he reason enough to keep himself out of the *Gazette*?"

"I should not be surprised, Mrs. Dobbs, though he were to take to drinking."

"And as for the matter of that, my dear—Thompson told Green, who told Jones, who told our Becky, who told Dobbs, that Brown was seen coming out of the White Hart this very morning."

"Drunk, of course."

"Well I don't know exactly; but I think it is much more likely he was drunk, than that he was sober."

"Well, well; it's poor Mrs. Brown that I pity. I'm sure that I shan't have a wink of sleep this blessed night, a thinking of her."

"Poor woman, I'm sure I feel for her. Not that she was ever much better than him. They do say—but I don't know of my own knowledge, you see; and I'm the last person in the world to slander

anybody behind anybody's back—but they do say, not that I believe—that before they came to our parish, there were reports—sort of insinuations, curious stories like—I don't know the right of it—something about a cousin of Mrs. Brown's, a handsome man in the haberdashery line: but I daresay it's all nonsense—only, of course, they are some people who will talk."

"There now—who'd ha' thought it. Did you ever? But there was always something very bold about Mrs. Brown; I've seen it often."

"What I hope is, that Emma won't take after her mother—perhaps—that's all."

"Oh, as for that, bless you—like parent like—but I say nothing. No, no! nobody ever heard Nancy Dobbs. Mum is my word—my word! What I say is, that people ought to keep people's tongues between people's teeth: that's all. Emma Brown!—ha, ha, ha! Lord bless you."—*People's Journal.*

THE FARMER'S DAUGHTER.

There's a world of buxom beauty flourishing in the shades of the country. Farm-houses are dangerous places. As you are thinking only of sheep or of curds, you may be suddenly shot through by a pair of bright eyes, and melted away in a bewitching smile that you never dreamt of till the mischief was done. In towns and theatres and thronged assemblies of the rich and titled fair, you are on your guard; you know what you are exposed to, and put on your breast-plate, and pass through the most deadly onslaught of beauty, safely and sound. But in these sylvan retreats, dreaming of nightingales, and hearing only the lowing of oxen, you are taken by surprise. Out steps a fair creature—crosses a glade—leaps a stile. You start, you stand lost in wonder and astonished admiration! You take out your pocket to write a sonnet—on the return of the Nymphs and Dryads to earth, when up comes John Tompkins, and says, "It's only the farmer's daughter." What! have farmers such daughters now-a-days? Yes; I tell you they have such daughters. Those farm-houses are dangerous places. Let no man with a poetical imagination, which is only another name for a very tender heart, flatter himself with fancy of the calm delights of the country—with the serene idea of sitting with the farmer in his old-fashioned chimney corner, and hearing him talk of corn and mutton—of joining him in the pensive pleasure of pipe and jug of brown October—of listening to the gossip of the comfortable farmer's wife of the parson and his family, of his sermons, of his pig—over a fragrant cup of young hyson, or rapt in the delicious luxuries of custards or whipt creams.—In walks a fairy vision of wondrous witchery, and, with a courtesy and a smile of winning and mysterious magic, takes her seat just opposite. It is the farmer's daughter, a lively creature of eighteen; fair as the lily, fresh as the May dew, rosy as the rose, graceful as the peacock perched on the fence there by the window; sweet as a posy of violets and clove gilliflowers, modest as early morn, and amiable as your imagination of Desdemona or Gertrude of Wyoming. You are lost. It's all over with you; you wouldn't give an empty fibert or a frog-bitten strawberry for your peace of mind, if that glittering creature be not as pitiful as she is fair. And that comes of going into the country, out of the way of vice and temptation, and fancying farm-houses nice old-fashioned places of old-fashioned contentment.—*The Hall and the Hamlet, by William Howitt.*

"Breeches of faith!" screamed Mrs. Partington, as she heard the term applied to Mexican violations of the armistice; "Well, I wonder what they will have next. I have heard tell of 'cloaks of hypocrisy,' and 'robes of purity,' but I never heard of 'breeches of faith' before. I hope they're made of something that won't change and wear out, as old Deacon Gudgeon's faith did, for his was always changing. He went from believing that nobody would be saved, to believing that all would be, and at last turned out a phrenologist, and didn't believe in nothing? I wonder if it's as strong as cassimere?" and she bit her thread and prepared a new needleful.

The wife is the sun of the social system. Unless she attracts, she is nothing to keep heavy bodies, like husbands, from flying off to space.

A DELICATE LABEL—A quiet elderly gentleman found himself one of four travellers in a railway carriage. The other three were ladies who talked from the beginning to the end of the journey, kept up a fact, so lengthened a conversation, that it was exactly 200 miles long. When nearly at the terminus, the most voluble of the ladies expressed a hope to the gentleman that the incessant colloquy had not disturbed him. "By no means, madam," said he, politely; "I have been exactly twenty-five years."

RESTORATION OF SOUR MILK OR CREAM.—We are informed that milk or cream, when it is turned sour, may be restored to its original sweetness by means of a small quantity of carbonate of magnesia. When the acidity is slight half a tea spoonful of the powder to a quart of milk will be sufficient.

SHRINKING OF FLANNEL.—Enclose new flannel in a bag; put it into a boiler with cold water; heat and boil it. It will never shrink any more after this operation, and should then be made up in garments.

SCIENCE AND MECHANICS.

ANCHOR ICE.

This is one of the most curious phenomena of nature, and as yet no satisfactory explanation of the mode of its production has ever been under our observation. It is well known that water freezes at thirty-nine degrees Fahrenheit, and that ice, being specifically lighter in water, swims upon its surface, forms a covering for it, and thus prevents entire congelation of all collections of fresh water in colditudes.

This is a wise provision of nature, otherwise our streams during the winter season, would become totally obstructed, or in other words, our rivers during the cold of winter would become solid masses of ice. Yet contrary to the ordinary operations of nature, we have in certain localities and under certain circumstances, precisely the result which nature has been careful to guard against. During the past winter unusual quantities of this substance have formed in the immediate vicinity of the falls, and although it has afforded no obstruction to the operation of machinery, a mile below it has entirely filled the bed of the river in certain places, and has thus, as the water in the river has subsided, given to the ice the appearance of having been thrown up in the central part of the stream. A few weeks since as we were passing the river, we noticed an opening through the ice of some eight or ten feet in diameter, and from the unusual quantities of anchor ice here presenting itself at the surface, we were induced to stop some distance and witness the singular phenomenon. The surface of the ice for a mile or more above and below the opening was frozen to a depth of eight or ten inches. The current at this point was quite rapid and swollen, and the bottom rocky. The night preceding had been intensely cold. For some moments the surface of the water appeared perfectly clear, and then perhaps for five or ten minutes large quantities of the anchor ice would present itself at the surface, and as suddenly disappear, being carried downward by the rapidity of the current. From appearances, the anchor ice in the immediate vicinity of this point was formed with great rapidity, but why the process of congelation should occur at the bottom of the stream, is the mystery we would be glad to have solved. A friend, who has long been conversant with this object, observes that its formation almost always occurs previous to a storm of rain, and that the conditions mentioned above, viz, a shallow rapid stream with a stony bottom, is the most favorable for its production. This, however, furnishes no solution of the mystery, and the fact that it frequently forms under different conditions, renders it quite problematical whether any one of them is essential to its formation. We would be much obliged to some of our scientific cotemporaries for satisfactory explanation of this phenomenon.—*Lewiston Journal*.

Without assuming to be one of our friend's "scientific" cotemporaries, we will suggest an explanation.

Anchor ice, as it is called, forms at the bottom of streams, or in the middle of streams, or wherever there is a current.

Hence it frequently forms at the bottom of rapids, where the water rushes out of the crevices at the bottom and edges of the gate and falls down, or anchors it. Sometimes it forms at the instant when the gate is started, and holds it like a giant. We conceive the true cause of it to be this. It has been found that if water be kept quiet, or without much motion, it can be cooled down three or four degrees below the ice forming point, (which is put down on Fahrenheit's thermometer at 32°) but if quick motion be made among the particles it is cooled down, it instantly shoots into crystals of ice. Now, in the case mentioned above, of the opening through the ice of the river, which exhibited so much anchor ice, might not the cause of the phenomenon be this? The water above the rapid was probably very motionless;—that is, the current was slow, gentle, and comparatively sluggish. In this place the water became cooled down below the ice forming point, and moving lazily along, until it met the pitch of the "tips;" when, owing to the sudden shaking of the particles, they shot out into ice, which rose and sunk and tumbled about as the great directed.

It formed at the bottom of the stream, because the over-cooled water met with obstructions which shook it into ice.—*Maine Farmer*.

EXPOSURE TO THE SUN.—There are few points which seem less generally understood, or more clearly proved, than the fact that exposure to the sun, without exercise sufficient to create free perspiration, will produce illness; and that the same exposure to the sun, with sufficient exercise, will not produce illness. Let any man sleep in the sun he will awake perspiring, and very ill, perhaps he will die. Let the same man dig in the sun for the same length of time, and he will perspire ten times as much, and be quite well. The fact is that not by the direct rays of the sun, but the heat of the atmosphere produce abundance of bile, and powerful exercise alone will carry off that bile. Popular errors explained.

CHLOROFORM.—Last week we published an account of the sad effect of chloroform on a young lady in New Bedford, who foolishly inhaled a quantity for the "fun of it," and was thrown into violent convulsions, which lasted for the space of sixteen hours. Since then two melancholy cases have come to hand, which shew that it is rather a dangerous agent, even in the hands of those who are deemed skillful operators.

The York True Sun of last week, (and we have seen the same statement credited to several of the New York papers,) chronicles the following heart-sickening case:

FATAL EXPERIMENT WITH CHLOROFORM.—A young daughter of Mr. Macdonald, a baker in Catharine street, in this city, recently met her death in the most awful manner, from the use of this fashionable but most dangerous preparation. About three weeks ago, the ether was employed to allay the toothache; but subsequently the sufferer was supposed to die, from what cause does not appear.

The apparent death, however, was only a trance, or protracted swoon; for on opening the coffin a few days ago, the unfortunate girl had turned over upon her face, and, in her agony and desperation, she had actually destroyed two of her fingers, on recovering from her temporary death by ether. The coroner's investigation should elicit the fact as to who prescribed a remedy which produced this most frightful result.—*Maine Farmer*.

SCIENTIFIC VERACITY.—The Massachusetts Agricultural Society has ordered from Paris, at a cost of about \$800, the figure of a horse of full size, so constructed as to admit of all the pieces being taken apart. These pieces represent the muscles, blood vessels, heart, lungs and other organs, of their natural size and appearance. Such objects would be admirably adapted to agricultural schools, and would afford the pupils accurate and useful information, scarcely to be obtained in any other way.—*Albany Cultivator*.

STRENGTH OF IRON PILLARS.—At a meeting of the British Association a few years ago, at Glasgow, a paper was read by Mr. Hodgkinson, describing a series of experiments made by him on the strength of iron pillars. It appears from these, that a pillar square at the top and bottom, is about three times as strong as one rounded at the ends—that if the pillars are not placed perpendicular, at least two-thirds of their strength is lost; and that they are one-seventh stronger when swelled in the middle, like the frustrum of a cone, with the base in the centre of the pillar.

ARTIFICIAL STONE.—A process has been patented by which artificial stone of every quality may be produced, from artificial granite, to statuary marble. The invention is, from its cheapness, a great advantage for all the purposes of architectural decoration, and from its plastic nature before it becomes hard, of great service to sculptors in taking casts of statues, busts, &c; and even of figures of the size of life. The cost is in all cases where carving is required in stone, in which this composition is substituted, less by nine-tenths. The invention is founded on the chemical analysis of the natural varieties of stone, and the manufacture is capable of such modifications as are requisite to produce all the varieties. The artificial stone produced is less absorbent than natural stone, and is superior in compactness of texture, and will resist frost, damp, and the chemical acids. It is made of flints and silicious grit, sand, &c., rendered fluid by heat, and poured into moulds as required, till cool and hardened. Its strength and solidity enables it to resist more blows than real stone. The specimens of the invention are exceedingly curious; they consist of many varieties, some being plain pieces of coping stone, stones for variegated pavement for halls and rooms, stone ornaments, such as mouldings for friezes, finials, and some more elaborate, having flowers and devices apparently cut with the chisel. There are also some grindstones, and hones used by agricultural laborers for sharpening scythes and tools. The invention is also applicable to the lining of cisterns and water pipes, its vitreous qualities insuring cleanliness. Its extreme cheapness is also a matter of consideration to those who require ornamental additions to houses.—*London Times*.

HOW TO MAKE VINEGAR FROM MILK.—The cow-herds on the Alps, and in several parts of France, use milk whey to make the sharpest vinegar. The process is very simple. After having clarified the whey, it is poured into a cask with some aromatic plants and elder blossoms, as it suits the fancy, and exposed in the open air to the sun, where it soon acquires an uncommon degree of acidity.

HYALOGRAPHY.—The art of engraving on glass, has, of late years, greatly advanced in Europe, and it is asserted that the process has now become as easy and complete as engraving on steel and copper. Truly glass is a useful article. Who, twenty years since, would have dared even to dream of such things as glass watch springs, glass cloth, glass thread, &c. &c.?

TO POLISH STEEL AS USED IN THE TOWER OF LONDON.—Dissolve half an ounce of camphor, and half a pound of hog's lard together over a slow fire, taking off the scum as it rises; mix as much black lead as will make it an iron colour; spread the composition over the steel, let it lie for 24 hours, rub it off with a dry linen cloth; and the metal will keep free from rust for six months.

Mechanism lends her aid to husbandry, as may be seen from the lists of improved implements and machines yearly brought under the notice of our agricultural societies.

MARKETS.—We have no changes of any importance to note in this issue. There seems to be a general dullness throughout the country. Money is awfully scarce. We shall probably have something to remark upon, in the way of improvement, by the 15th.

IMPORTANT TO CANADIAN FARMERS.—We believe there is no longer any doubt that our wheat will be admitted into the United States, (in bond,) to be ground there for the English market. American millers will become purchasers for a large portion of our surplus wheat. This will have a beneficial effect upon our market. We shall not be subject to a general stagnation by the breaking down of a few speculators. The price of wheat in Canada will hereafter be as high as the price on the other side, less the cost of taking it there. We may look upon this measure as an important step towards *free trade* between us and our neighbors.

THE CUSTOM'S BILL of last session, which was to have come into operation on the first January last, has received the Royal assent, and will take effect on and after the 5th of April instant.

NEW YORK STATE AGRICULTURAL FAIR.—The premium list of the New York State Agricultural Society has been published; the aggregate amounting to over \$6000, the largest amount ever offered in the United States. The fair is to be held at Buffalo, in September next.

PARLIAMENTARY.—The first session of the third Provincial Parliament has been brought to a close. Eighteen bills have been passed and assented to by his Excellency. Three or four of them are of general importance. The Act making provision for emigration, which we gave a synopsis of in our last; an Act to continue and amend the Act for the inspection of flour and meal; and an Act to provide for the inspection of Butter, the main points of which we shall endeavour to give in our next number. The others are mostly Acts incorporating companies, continuing expiring laws, and granting supplies. Very little of interest has occurred in the House, since the acceptance of office by the new ministry. They have returned to their constituents for re-election, and the House has been prorogued, in order to give them time to prepare and mature their measures. Mr. Vansittart, the Returning Officer for Oxford, has been declared guilty of a breach of the privileges of the House. In what manner he will be punished is not yet known. The following is the speech with which his Excellency closed the session:—

*Honorable Gentlemen of the Legislative Council, and
Gentlemen of the Legislative Assembly:*

I have reason to believe that I shall best consult the public interest and your convenience, by bringing the present session to a close, with a view to the resumption of your joint labors at an early period.

In pursuance of my declared intentions, I have taken measures for the formation of a new Administration; and I am enabled to apprise you that the arrangements necessary for that purpose are completed.

I trust that the measures which have been adopted by the Provincial and Imperial Parliaments for preventing the recurrence of the calamities, by which last year's emigration to the Province was attended, may effect the objects they are designed to accomplish.

I thank you, in her majesty's name, for the readiness with which you have granted the Supplies which are requisite for the public service.

Your attention will necessarily be directed, after the recess, to various measures for developing the resources of the Province, and promoting the social well-being of its inhabitants.

It is my sincere desire to co-operate with you for the attainment of these important objects, and to abet by all means in my power, your endeavours to establish and to increase the happiness and contentment of her Majesty's subjects in Canada.

The Hon. the Speaker of the Legislative Council then declared that it was the pleasure of his Excellency the Governor General that the Parliament stand prorogued to Tuesday the second day of May next.

ANOTHER REVOLUTION IN FRANCE.

Our readers will find on the opposite page the principal details of an event that has taken the world by surprise, and will no doubt be attended by most momentous consequences. We have omitted advertisements to make room for the particulars of the astounding news.

Louis Philippe, King of the French, who was chosen to that office the people in 1830, ceased to give satisfaction to those who elected him, and, unable longer to withstand the popular indignation, was obliged to abdicate his throne and fly from Paris. It appears that his grandson, (a boy,) in whose favour he abdicated, was rejected by the chamber of Deputies, and that a provisional government has been formed. From the well-known sentiments of some of its members, and the circumstances attending the Revolution so far, they were known when the steamer left, it is highly probable that an attempt will be made to establish a Republic. England will not interfere in the domestic arrangements of the French people, if we judge from the views of the leading journals of all parties. We therefore need not be apprehended from that circumstance, but we consider the present state of political feeling on the continent beyond the Alps; the hostile attitude which the people have always assumed towards their rulers in several European countries, we have every reason to expect that the explosion at the French capital will be felt, like a shock of electricity throughout the continent of Europe. A general European war is by no means unlikely, and we in Canada may not escape its consequences. One effect of such a war, will be to enhance the price of human food. We cannot prevent a dreadful catastrophe, but if we *mind our own business*; give our attention to the plough, work while others fight, our pockets may be replenished, if no other good comes of the grand *mêlée*. This perhaps, be called a vulgar, selfish view of this portentous occurrence but it is, nevertheless, we think, about the best one the farmer can take.

IMPORTANT INTELLIGENCE FROM CHINA.

Shocking Murders—More Trouble between the English and Chinese—The probable Blockade of Canton. &c., &c., &c.

The fine clipper ship Panama, Capt. Griswold, arrived yesterday from Canton, whence she sailed on the 14th of December. She made the passage in the short space of eighty-six days.

The intelligence is of a very deplorable character. There are bloody indications of another war between England and China.

The Chinese had butchered in the most shocking manner several Englishmen, who had gone a short distance into the interior.

Sir John Davis, the governor of Hong Kong, had arrived at Canton, and demanded from the Chinese Government to fullest reparation for the outrage committed, but no satisfaction having been received a consultation of the officers was held, and they had partly concluded to blockade Canton. The force however was not sufficient.

Two British steamers were ordered to proceed as far up the River as practicable, in order that they may be in readiness to blockade Canton as determined upon—*New York Herald*.

ITALY.—Accounts from Italy state that the troops have returned to Naples. Amnesty granted. The Austrian troops came into contact with the students at Padua, and one hundred persons were killed and wounded.

Rumours from Rome state that the Pope is rather holding back his reforms, and had been deposed.

RUMORED RESIGNATION OF LORD JOHN RUSSELL.—There are rumours in Liverpool that Lord John Russell has resigned his office of First Lord of the Treasury; his budget, &c., having caused much dissatisfaction. The deficiency in the revenue was £2,900,000, and Lord John Russell proposed to increase the Income Tax to five per cent. for two years. The *European Times* says that the Ministry is doomed, and that he has been defeated in several measures.

HOME MARKETS.

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

	Toronto, Mar. 31.	Hamilton Mar. 30.	Montreal Mar. 30.
Flour, per barrel	£1 0 0	£1 1 3	£1 1 3
Wheat, per bushel	0 4 2	0 4 1	0 4 1
Barley, per 48 lbs.	0 2 8	0 2 4	0 2 4
Rye, per 56 lbs.	0 3 0	0 3 0	0 3 0
Oats, per 34 lbs.	0 1 5	0 1 3	0 1 3
Peas, per 60 lbs.	0 2 6	0 2 0	0 2 0
Oatmeal, per barrel	1 0 0	0 18 0	0 18 0
Potatoes, per bushel	0 3 6	0 3 9	0 3 9
Hay, per ton	2 5 0	1 15 0	2 10 0
Beef, per 100 lbs.	1 5 0	0 17 6	1 5 0
Pork, per 100 lbs.	1 2 6	0 17 6	1 2 6
Lard, per lb.	0 0 4	0 6 5	0 6 5
Butter (fresh) per lb.	0 0 10	0 6 8	0 6 8