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THE

Canadian Agriculturist,

OR

JOURNAL AND TRANSACTIONS OF THE BOARD OF AGRICULTURE
OF UPPER CANADA.

VOL. XIV.

TORONTO, FEBRUARY 16, 1862.

No. 4.

The Board of Agriculture.

From the following official notice, which we take from the *Canada Gazette*, it will be seen that the members of the Board of Agriculture in Upper Canada whose term of service expired at the commencement of the year, have been re-elected by the county societies.

Bureau of Agriculture and Statistics.
Quebec, 14th February, 1862.

The following gentlemen have been elected members of the Board of Agriculture in Upper and Lower Canada for the present year.

UPPER CANADA.—R. L. Denison, Esq., E. W. Tompkins, Esq., Hon. G. Alexander and Hon. J. Rattan.

LOWER CANADA.—Dr. J. C. Taché, B. Pomroy, Esq., O. E. Casgrain, Esq., Hon. P. A. Bouchard.

A. CAMPBELL,
Acting Secretary.

Fruit Growers' Association.

We have to thank the able Secretary of the Upper Canada Fruit Growers' Association, J. Beadle, Esq., of St. Catharines, for the interesting report of a recent meeting of the Association at Hamilton, which will be published in another portion of the Journal. We beg leave to request particular attention to the series of questions addressed by the Association to Horticultural and other societies and individuals, asking for informa-

tion in regard to the success attending the experiments made in the cultivation of the different varieties of fruit. Full and careful answers to these questions from all parts of the Province would be of great value and importance, not only to those who wish actually to engage more or less extensively in fruit culture themselves, but also to every one interested in the progress and amelioration of the Province.

Address of Condolence to Her Majesty.

The following is a copy of an Address of Condolence to Her Majesty the Queen, on the occasion of the deeply lamented death of His late Royal Highness the Prince Consort, drawn up in accordance with the resolution passed at the Convention of the Agricultural Association held in this city on the 30th January last, and which has been transmitted to His Excellency the Governor General, to be forwarded to Her Majesty.

TO THE QUEEN'S MOST EXCELLENT MAJESTY.

We your Majesty's most dutiful and loyal subjects, the Agricultural Association of Upper Canada, desire to offer to Your Majesty the assurance of our devoted attachment to your throne and person, and of our deep and respectful sympathy with your Majesty in the great affliction which has befallen your Majesty and the British nation in the early and lamented death of His Royal Highness the Prince Consort. While we deplore in common with all our

fellow subjects in every part of the Empire, the death of a Prince so distinguished by rare intellectual gifts and eminent virtues, we feel that his loss will be more especially deplored by those Societies in our father land which, like this Association, have for their object the advancement of agricultural science.

To the distinguished patronage and enlightened judgment of His Royal Highness, was due much of the wonderful development and rapid progress which have so particularly distinguished British agriculture within late years.

Nor can we forget, that the Royal Agricultural Society of England has, by his lamented death, been deprived of the invaluable counsel and direction of a President, whose special knowledge of the subjects embraced within the sphere of the Society's labours, and varied acquaintance with the Industrial arts in general, rendered his presence in the chair of invaluable moment to the Society and the country at large, during this important year.

We would humbly express the hope, that the affectionate appreciation of His Royal Highness's many and exalted virtues entertained by all classes, and the loving sympathy of your Majesty's loyal subjects in this as in all other parts of your Majesty's dominions, may in some measure assuage the intensity of your Majesty's affliction. And we fervently pray that Almighty God may of His grace and goodness, support and comfort your Majesty and your Royal family, and that your Majesty may long be preserved to reign over the great Empire committed to your charge.

(Signed) E. W. THOMSON,

President Board of Agriculture, Chairman.

Toronto, January 30th, 1862.

Flax Culture.

LONDONDERRY, Jan. 27th, 1862.

To the Secretary of the Board of Agriculture.

MY DEAR SIR,—Since my arrival in Ireland I was glad to find the prospects of the linen trade had very much revived. The very high prices cotton has reached within a few months no doubt was the cause of this, and the demand for flax, and desire on the part of the manufacturers for its cultivation in any country where they may be able to obtain it quite equal to last year, when I was here a little after this time. It was most fortunate we had not got the scutching mills the government had ordered before I came, as the Messrs Rowan Bro. & Co. have made a great improvement in them since, and they are now beyond a doubt the best mill, taking into consideration the saving in skilled labor, in Ireland. Parties have been here from Courtrie and tested them, and have ordered twenty of

them to be forwarded immediately. The six for Canada I hope to get shipped by the steamer of the 13th proximo, and will also endeavor if possible to get a hand sent with them or soon after who will understand setting them up and attending them. Too great efforts cannot be used to get the farmers to sow flax this season, the prices being at present and likely to be most remunerative. No effort should be wanting on the part of the active members of the Agricultural Societies throughout the country to encourage the farmers to sow all they can this coming spring, and it is well for those to know who may not be near a mill for a season or two, that as soon as they take the seed off, and have the straw properly dried on the grass, they may safely stack it up, put into any shed or barn, only keep it dry, and the fibre will improve the longer it is kept in this state, in truth for years. The prices too of Riga seed are advancing, from the great demand at present. It is worth in this market 43s. sterling per barrel of about 4 bushels, and it is expected it will be 50s. before sowing time. Should any one near Toronto wish to send for what they may require your enterprising townsman Rice Lewis, Esq., said he would import whatever he thought would be required for this spring's sowing; but parties in Guelph, Woodstock, and other places who have taken a lively interest in the cultivation of flax, intended what I left to forward an order here for what they wanted, and I would take care fresh seed was chosen for the purpose.

I am glad to say that it is thought here as in England that we will have no war.

The prospects for emigration this season must be better than I expected.

Yours most truly,

JOHN A. DONALDSON,

Canada Government Emigrant Agent.

Rowan's Flax Scutching Machine

We give the subjoined wood engravings represent this machine, several of which the government are about importing for the use of cultivators of flax in this province. We beg to refer to a communication from Jno. A. Donaldson, Esq., our energetic emigration agent in Ireland, on the subject in this number of our journal. The growth of flax will doubtless attract a largely increased share of attention this spring, and we shall make it a point to give the information in our power on the subject. The subjoined description is from the *Mechanics Magazine*, published in England.

ROWAN'S MACHINE FOR SCUTCHING FLAX &c.

This invention, introduced by Messrs. J. Rowan & Sons, of Belfast, consists in scutching flax, hemp, and other fibrous materials by means of a revolving cylinder fixed in a frame round which cylinder are placed combs and beaters, and to which the flax or other fibrous material is pressed by the hand through an

opening provided for the purpose in the front of the machine. After having been sufficiently acted on, the flax is withdrawn and reversed end for end; this done, it is then put through the same operation, when it is finished. Sometimes rollers are used to pass the flax or hemp into the machine.

Fig. 1.

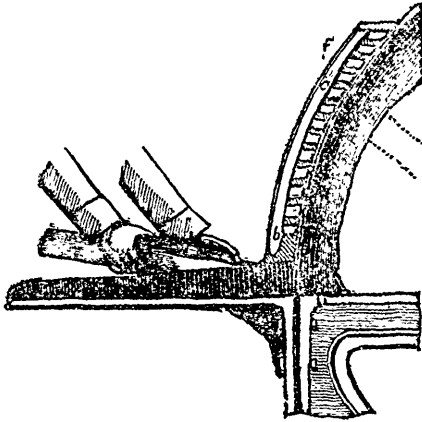
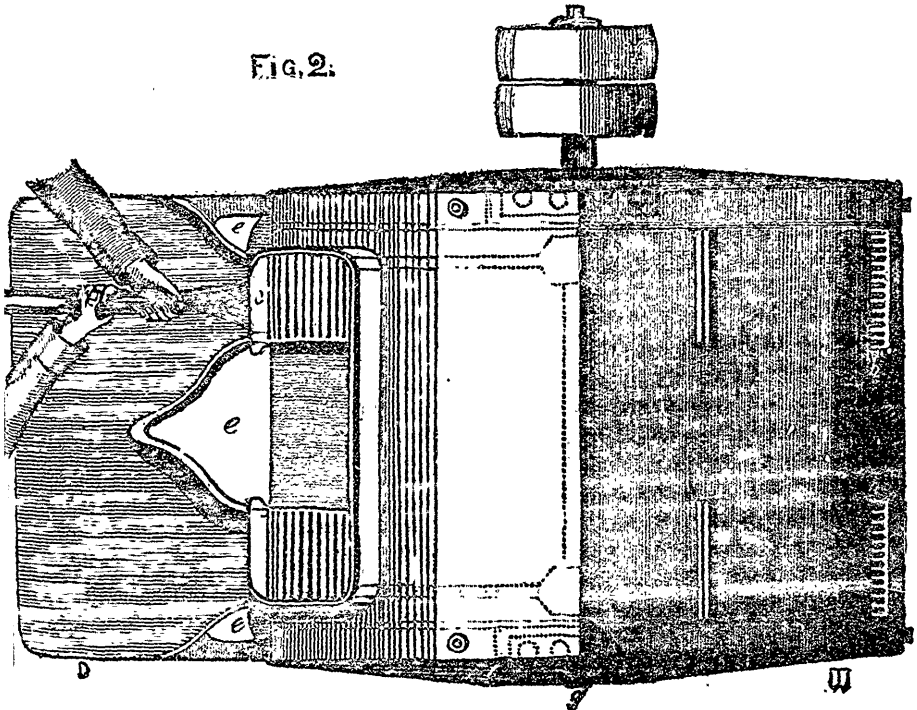


Fig. 2.



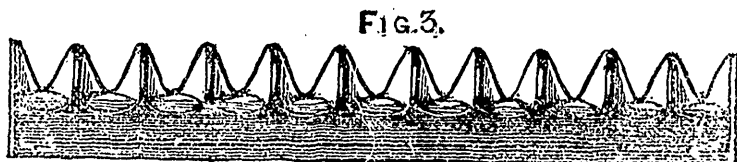


FIG. 4.



Fig. 1 of the accompanying engravings is a partial side elevation, and Fig. 2 a plan of the machine.

a, a, is the revolving drum or cylinder mounted on a shaft or spindle *g*, and fitted with a comb *h*, and with beaters *s, s*, round its periphery. One comb and five beaters, are found to act well, but the number of either may be altered. Figs. 3 and 4 are views on an enlarged scale in front elevation, and plan, of a comb detached. *B* is a side or framework enclosing the upper part of the drum; *C, C*, are louvre plates inclining downwards to allow of the broken boon or woody particles detached from the flax or other fibre under treatment passing off freely, and being blown down to the floor by a current of air passing from the cylinder through the louvres. The object of the louvres is to prevent the boon getting embedded with the fibre. *D* is the feeding board; it is made as shewn to enable the attendant to feed and handle the straw and flax during the operation with safety. A set screw is connected to the plate *b* for the purpose of regulating the distance thereof from the comb and beaters, which distance requires to be modified according to the nature of the fibres being operated on. *F* is the front plate of the louvre casings, *c, c*, are passages or channels by which the boon is led to the openings *e, e*, through which it falls to the ground; *f, f* are fast and loose pulleys mounted on the spindle *g*. The flax, hemp, or other material to be scutched is fed by the hands of an attendant to the drum or cylinder by means of the board *D*, and is submitted to the action of the comb and beaters; the material is allowed to pass on into the machine until one hand of the attendant comes nearly in contact with the front plate *F*, when the materials is withdrawn, turned upside down, re-inserted, and submitted to the same operation, and so on until it is sufficiently scutched.—*Mech. Mag.*

Importance of Birds to Growing Crops

20, DANIEL ST., BATH, Jan. 29, 1862.

To George Buckland, Esq., Professor of Agriculture, Toronto.

DEAR SIR,—In looking over my memorandum book the following slips respecting the usefulness of birds in destroying insects, cut from newspapers, is sent for your information. If the information be not in your possession, please give it a corner in the Upper Canada Agriculturalist.

1st slip.—*Birds and Insects.*—At the late Agricultural meeting at St. Gallen, Switzerland, Baron Von Tschudi, the celebrated Swiss naturalist, dwelt on the important services of birds in the destruction of insects. Without birds, said he, no agriculture and vegetation are possible. They accomplish in a few months the profitable work of destruction which millions of human hands could not do half so well in as many years; and the sage, therefore, blamed in severe terms the foolish practice of shooting at destroying birds, which prevails more especially in Italy, recommending on the contrary the process of alluring birds into gardens and cornfields. Among the most deserving birds he counts swallows, finches, titmice, redtails, &c. The naturalist then cites numerous instances in support of his assertion:—In a flower garden of one of his neighbours, the trees, all rose-trees, had been suddenly covered with about 2000 tree lice. On his recommendation a marsh titmouse was introduced into the garden, which in a few hours consumed the whole brood, and left the roses perfectly clean. A redtail in a room was observed to catch about 900 flies in an hour. A colony of night swallows have been known to destroy whole swarms of grubs in 15 minutes. A pair of golden crested wrens carry insects as food

their nestlings upon an average 36 times in an hour. For the protection of orchards and woods titmice are of invaluable service. They consume in particular the eggs of the dangerous pine spiders. One single female of such spiders frequently lay from 600 to 800 eggs twice in the summer season; while a titmouse, with her young ones, consume daily several thousands of them. Wrens, nuthatches, and woodpeckers often dexterously fetch from crevices of treebark numbers of insects for their nestlings.

2d. As a proof of the valuable services rendered by swallows it is estimated that one of these birds will devour 900 insects in a day, and when it is considered that some insects produce as many as nine generations in a summer, the state of the air, but for these birds, may be readily conceived. One kind of insect alone might produce 560,970,489,000,000 of its race in a single year!

3rd. A gentleman in the County of Kent, England, writes thus:—I have excellent means of knowing that in various parts of the county, whole crops of fruit, vegetables, and grain have been swept off entirely by various kinds of minute insects, which the birds alone are competent to detect and destroy, and which not one man in a hundred knows anything about. Men see their hopes blasted, but they believe some ill wind has blown "a blight," for under that vague term they designate all such evils. In no localities have insects done so much injury to a fruit where birds are indiscriminately and systematically exterminated. The gardens in some localities are planted with plum trees. In 58 they promised an extra abundant crop, but before the fruit was matured the havoc of the winter moth, upon which the birds, especially the titmouse, feed, consumed almost the whole crop.

May not the foregoing statements relating to this interesting subject of protecting and encouraging the introduction of small birds into the Province of Canada be a subject for the consideration of the Board of Agriculture? Perhaps a more favourable opportunity for procuring three or four species of birds will not again occur as at the forthcoming National Exhibition to commence in London next spring, where a great variety of birds will be collected, and all the bird fanciers and dealers in England may be consulted. The Commissioners deputed to proceed to England for the Exhibition, might be authorized to purchase and bring out some birds, to be let loose in the city of Toronto, where they would be kept for a while in the large gardens and pleasure grounds within the limits of the city, and increase would hereafter migrate through the country, and become exceedingly useful in the destruction of insects. The expense would be small, and the benefits arising from the introduction of the birds would be beyond any

present computation. Only one kind or variety should be placed in each coop, or cage, during the voyage. I am, Sir,

Your faithful servant,
J. B. MARKS.

[It affords us much pleasure to insert the above very interesting communication from an old and zealous friend of Canadian Agriculture, who, though at present widely removed from us, continues to cherish an unabated interest in the welfare of this new country, in which for many years he permanently resided. We commend the subject of Mr. Marks' letter to such of our farmers and gardeners especially, as take a practical interest in those branches of Natural History to which it more immediately relates. Considerable success has already attended the introduction of several species of British birds into the Australian colonies; and if similar attempts were made in these parts of the American continent, due attention must be paid to the length and severity of our winters. The reckless destruction of birds is no doubt as impolitic as it is inhuman.—Eds.]

Comminuted Food.

[From the Irish Farmer's Gazette]

Sir,—I am induced by your confessing in your issue of the 18th ult. "to feel great interest in the experiment" of using "comminuted food" to trouble you with my experience of the system. In 1860 I had, in every sense of the word, a very small turnip crop; but having a chaff-cutter and one of Bentall's most excellent root pulpers, I determined to try the plan of giving the turnips pulped and the hay chaffed and mixed together to my stall-feds, numbering 20 beasts. Both machines were worked by manual labour, and the food prepared every day. So well pleased was I with the result that I made up my mind to erect a "one-horse gear," by which I would be enabled this year to work the two machines together, and on a much more extensive and more economical scale. The horse gear cost £10, exclusive of the expense of setting it up, which was trifling. 40 beasts are fed three times daily on the "comminuted food," besides 50 sheep that are fattening, and 8 farm-horses have their hay chaffed. The cattle get all their hay through the turnips, except a little at night. It takes a horse about 2½ hours daily to do the entire work. The great advantages of the system are, firstly, from the ease with which the cattle consume the prepared food, additional time is gained between each feed for rest, besides the saving of muscular exertion necessary to enable a beast to get through a feed of whole awed turnips, which is

certainly considerable; secondly, the great saving of food, as there need never be a pound of waste; and thirdly, the increased facility afforded for consuming profitably the straw that can be spared from litter. Each of these advantages tends in itself to enable the farmer to keep more stock upon the same amount of food; for, owing to the first, cattle *unquestionably thrive more rapidly*; and, consequently, require shorter keep to prepare them for the butcher; the food saved from waste in the second; and in the third, from passing your straw through the chaff-cutter, and thereby using it in the most economical manner, you can do with less hay, and have more of your land free for stock in the summer months. There are other advantages I may mention. Cattle, stall-feeding, are never in danger from choking, and lambs and hogget cheep can eat the pulped roots freely. I am giving my stall-fed cattle a mixture of rape, bean and Indian meals, besides a little crushed oats daily, at a cost of 10s. per mouth. I have a portable 16 gallon boiler with steamer attached. The boiling water is put into a wooden vessel, and the Indian and bean meals stirred into it; as soon as the next boiler is ready, which very shortly occurs, it is poured on the previous mess, and the rape-meal added, and stirred for some minutes. This gruel is then carefully poured over the chaffed hay and bruised corn, thoroughly incorporated with them, by means of a three-pronged fork. The mess is then closely covered up for next day's use, and given at the noon feed, after about half allowance of roots. It is then blood warm, has a very fragrant smell, and is relished by the cattle. I think it a great advantage to use the boiling water. Last year I gave bean meal uncooked, and frequently observed it passed by the animals in their evacuations just as they had eaten it. I never perceive that now. Not having straw to spare this year from litter, I have not derived all the advantages I expect in future from my system. I commenced some time back to give my horses steamed turnips at night through thin chaffed hay and bruised corn. Previous to my doing so, they looked very poorly, though getting a full allowance of corn, and chaffed hay *ad libitum*. Since I have given the turnips they have thriven apace, and are now in a first-rate condition.—Yours, &c., A YOUNG TENANT FARMER.

Professor Buckman on Meadows and Pastures.

[Lecture before the Farmingdon Agricultural Library, Berkshire, England.]

Professor Buckman said the subject which he was called to lecture upon to them that afternoon was the "Natural History, Economy, and Treatment of Meadows and pastures." The subject was so wide that it was impossible he could enter into its discussion in detail, because to do so

would be absolutely necessary to give some description of the anatomy and structure of grasses. On the present occasion he must leave out that portion of the subject, and give them some notion of the history, economy, and the different modes of treating meadow land. He would take it for granted that all farmers were fully impressed with the importance of the subject. When they considered how much of the land of this country was in pasture, and remembered the fact that "the man who made two blades of grass grow where only one grew before was a benefactor to his country," it behoved all of them to see whether they were making the best use of their meadow and pasture land—whether it was not possible to make more and better grass grow than heretofore. In arable cultivation they all knew that it had advanced so rapidly that, perhaps they now got something like double the produce they obtained from the same quantity of land fifty years ago; whereas in grass land it was generally admitted that they were rather behind, and that they did not do so well as they formerly did. There were a great number of reasons for this. The farmers had not studied the natural history of the grasses of which meadows were made. To compare England with other countries, they must come to the conclusion that the great glory of this island was its meadows and pastures; for there was a country in the world that could boast such meadows, but they were just beautiful and productive in proportion as they were cared for and attended to.

NATURE OF GRASSES.

In alluding to the changes which took place in meadows under different circumstances, he said that in adjoining parishes and districts there was evidently a great difference in the meadows some being comparatively worthless, while a close at hand yielded a great amount of produce. If they looked at the nature of the grasses they would find them a most wonderful kind of plant. There were 150 species of grass in this country which adapted themselves to every circumstance, and just in proportion as they neglected the pasture would a great number out of those begin to grow and take possession of the land, and as the greater number of our grasses were what is called sour grasses, the land became full of sour grass. On the other hand, when they found a good pasture, they would find it consisted of a few species of the right sort. The effect of care in cultivation was to kill the sour grasses. He could tell the condition of a pasture by the grass which was found upon it; the man who studied the nature of grasses could tell only the nature of the subsoil, but also the cultivation of the surface soil. Wherever they found a quantity of wild barley, it was very prejudicial to the hayrick, as its long spikes or prickles irritated the mouths of cattle that they could not eat, and consequently such hay was not only but almost useless. It was found that

broom grass always grew on limestone. He had seen a field where there was none of it growing except where some lime had tumbled down the side of the bank, so that by the broom grass they could tell where there was limestone with the greatest possible accuracy.

CULTIVATION OF MEADOWS.

With regard to the cultivation of meadows, he would premise by saying that they required cultivation as much as arable land. There was not the same amount of work or expense required, but they must be cultivated, and an intelligent mind only could get the best out of them. It was too much to expect that pastures would yield a good produce spontaneously, without wanting anything done to them: what would occur if left to themselves? The birds would carry haws, wilds, and other seeds, and the pasture would become a wild jungle. The only way to get their beautiful meadows by dint of careful cultivation. But generally they were not carefully enough cultivated, and he would point out the following conditions necessary to the proper cultivation of meadows:—If any one acquainted with the grasses would go over a meadow, he would soon find out whether it was dry or properly drained. He found a quantity of those "bullpates," as they are called, or large hassocks of grass, there were must; then be a quantity of water, and if the meadow were drained all that would die out very quickly. There were a great number of grasses which could only grow under wet conditions, and as soon as the land became dry they died out as quickly as possible, leaving only a sward here and there, and then, supposing the drainage to get out of order, they would immediately see these single blades multiply, and the meadow resume its former state. With reference to irrigated meadows, most of them knew that a very great increase was given to the yield of pastures in this country by letting the water flow over them wherever circumstances permitted.

In order to do this properly they must have a supply of water, and facilities by which that water could be got upon the meadow, and equal facilities for getting it off again. The meadows should not be flooded, but the water should run off so that it would percolate through the roots of the grasses. Wherever this was done, the results were extraordinary, and land which did not be worth £1 an acre was made worth £5 an acre. If the water were allowed to stagnate after the flooding, and they had not proper drainage, then they would have the evil results of the growth of sour grasses. The man who is called "the drowner" ought to know when the water was perfectly drained off, as he would be able to see these sour grasses increasing if it were not. Draining was as absolutely necessary for pastures as for arable land, but fewer drains would be required generally for the former than the latter; where they wanted to have a meadow like a perfect pasture, they should have a good drainage like stagnant water on the land. Ano-

ther important point was the rolling. Our pastures were only in a good condition when there was a uniform texture caused by the mixture of grasses. If the grasses were allowed to grow in patches here and there, then they began to grow wild, and like what was seen in the jungle. Rolling prevented this, and the more a pasture was rolled the better it became. There was nothing like exercise for it; and to prove this, he instanced Oakley Park, where the militia were trained day after day, and, instead of doing any mischief, they did an enormous amount of good to the pasture. It caused a mixing of the grasses, and they grew up together much more easily and evenly after such exercises as this. Harrowing was also a point that should be attended to, in order to prevent an accumulation of moss, and to clear away the decayed grasses which had been allowed to stop behind. If not, they would have a peaty kind of soil, which they should endeavour by all means to prevent, and where it existed to get rid of; for the grasses which grow in peaty soils were not the most nutritious, and therefore anything like a peaty condition, or decaying vegetable matter, should not be allowed on the meadow. Far better to take away all the grasses and sow new seed than to skim the land over lightly, and leave behind that which would produce peaty conditions. There were some meadows adapted for pasture and pasture only, and were not satisfactory for making hay. Only a few years ago he was on the estate of Mr. Barker, of Gloucester, and in taking a ramble across the country, in the Home Park, he met with a quantity of grasses, of which he took the name, and Mr. Barker asked him what he thought of the value of the land, and he told him it was exceedingly good for pasture, but not for hay-making. Mr. Barker said it was very curious that his own bailiff should tell him that from practical experience, and that he, (Professor Buckman) should tell him the same thing from examining the grasses. There were a number of species of grasses, the hay of which would not be nutritious. Some had long spikes when full grown, like barley and wheat, and this was always objectionable in hay, so that here one was enabled, merely by the grasses, to point out something of practical importance.

FOLDING ON MEADOWS.

With regard to the amelioration of pastures by "folding," he would make a few remarks. This was a subject to which he had paid particular attention. If they went on constantly feeding from a meadow with cows or sheep, and did not take hay from it, it would, under such circumstances, be very slow, indeed, to deteriorate. In fact, farmers very generally conclude that letting sheep upon the pasture was the way to revive it, however much deteriorated before. Year after year some carted away hay from the meadow, and returned no manure, but to compensate for that, they folded sheep upon it, as there was

some sort of notion that there was a great virtue in sheep to restore pastures. There was no innate virtue in sheep to do this, but there was a virtue in time—time allowed portions of the grass to be decomposed, and fresh food was thereby given for the other grasses to grow upon. It was quite true that sheep-folding did an amount of good, but the sheep added no new food, and it was folly to say that they added manure. What they did was simply this; they returned that grass which they ate, in a new form, and in that form it was food, but there was nothing new added. If they constantly fed cows upon meadows in that way, it would for a time get better than what it had been, but it would eventually get worse, and he would give an instance of this:—In Cheshire, where a most remarkably good cheese was made, he found ten years ago the meadow full of rushes and sedges, grasses with hollow and triangular stems, and exceedingly rough pasture. Sedges grew for the most part in wet sands. He found that the people had been constantly exporting an immense amount of cheese and the flesh and bones of cattle, and the result was that the meadows were constantly getting poorer. The phosphate had been taken out of the land and converted into the bones of the cattle, and then the sedges came up in the impoverished condition of the land, and replaced the true grasses, which required better food. In order to remedy this, the farmers in Cheshire—which is a great country for salt—put a quantity of salt over the meadows, and this killed every one of the rushes and sedges; and, as soon as the salt had dissolved the frame-work of these grasses, this formed a kind of manure, and refreshed the pasture again. But this refreshment was very much like that which was given by folding sheep—nothing new was added; they got no new conditions, and the meadows gradually relapsed into the same poor condition. But the Cheshire farmer now, to compensate for the bones and flesh which had been sent off the meadows in his cattle, was bringing back a compound containing similar materials—a guano which contained bone-dust in great quantities, and also a large amount of superphosphate, and they were using this to a larger extent than any other county in England, and the result was that the pastures were becoming thoroughly restored. Here, then, was the true theory of sheep-folding. They might bring a meadow into a certain condition by feeding sheep upon it, but it would not always remain in that condition. Whatever they took off it in the shape of mutton was so much impoverishment of the land. Whenever they wanted to restore a pasture in a very bad condition, they might very readily do it by taking the sheep from the turnip field towards evening, and folding them on the meadow the whole of the night. Then the sheep would bring something from the turnips, and add to the meadow new manure. There was no question they would do an enormous amount of good in that way.

HAY MAKING.

As regarded hay-making, they would get hay in quality and quantity just in proportion to the manure they put upon the soil. And if they took away hay, they must return something more than merely folding sheep upon the land in the usual way, otherwise the meadow would become impoverished. He would caution the farmers against letting the hay grow too long before making it. He was often told that there was no hay to make, and they must let it grow three weeks or a fortnight longer, in order to get a greater quantity. But, depend upon it, this was unwise. They should not let the grasses seed on any account. If they had not sufficient quantity previous to this, he did not think anything would increase it; but even if it did increase, the injury they would do to their pasture would be more than any benefit they would derive in the increase of hay.

To be continued.

Horticultural.

The Fruit Grower's Association of Upper Canada.

This association held its Annual Meeting in the City of Hamilton, on the 22nd and 23rd January 1862, which was very fully attended.

The President read a very interesting address on the objects and importance of this association.

On motion of D. W. Beadle, seconded by W. Holton, the thanks of the association were tendered to the President for his able and interesting address, and he was requested to furnish a copy for publication in the *Canadian Agriculturist* (A copy of the Address is subjoined.)

On motion of D. W. Beadle, seconded by Mr. Arnold, Mr. George Leslie was appointed committee to obtain the publication of the President's address in the *Leader and Globe*, Toronto.

The association then proceeded to the election of officers for the ensuing year, with the following result:

President.—Judge Logie, Hamilton.

Vice-Presidents.—George Leslie, Esq., Toronto.—Alexander Leslie, Esq., London.

Secretary and Treasurer.—D. W. Beadle, St. Catharines.

Fruit Committee.—Messrs. Gray, Mesto, Holton, Freed, and Laing.

Publication Committee.—The Secretary, and Messrs. Bruce and George Leslie.

Answers had been returned to the question issued by the association from over thirty different parties, and these were now read by the Secretary.

After the reading was finished, on motion Dr. Hurlburt, seconded by George Leslie,

answers were all referred to the Secretary, with instructions to prepare a condensed report therefrom, and to submit the same to a special meeting to be held in the City of Hamilton, on the 20th of February, at 2 o'clock P.M.

On motion, the society now adjourned to meet at 9 o'clock, to-morrow, 23rd instant.

On re-assembling pursuant to adjournment the association took up the consideration of the Constitution and By-Laws, in accordance with the action had at the last January meeting and adopted the following,

CONSTITUTION AND BY-LAWS

ART. I.—This Society shall be called "THE FRUIT GROWERS' ASSOCIATION OF UPPER CANADA."

ART. II.—Its object shall be the advancement of the Science and Art of Fruit Culture, by holding Meetings for the exhibition of Fruits, and for the discussion of all questions relative to Fruit culture; by collecting, arranging and disseminating useful information, and by such other means as may from time to time seem advisable.

ART. III.—The Annual General Meeting of the Association for the election of Office-bearers, shall be held in the city of Hamilton on the third Wednesday of January. Two other general Meetings shall be held at such places as shall be determined at the January Meeting, one on the third Wednesday in July, and the other on the second Wednesday of November, in each year.

ART. IV.—Its officers shall consist of a President, two Vice-Presidents, a Secretary and Treasurer, who shall be chosen by ballot, after nomination.

ART. V.—There shall be a general Fruit Committee, consisting of five members of the Association, to be appointed at the Annual Meeting in January, of whom three shall form a quorum.

ART. VI.—There shall be a Committee on Publication, consisting of not less than three members, who shall be chosen at the Annual Meeting in January.

ART. VII.—Any person may become a Member by an annual payment of One Dollar; and payment of Ten Dollars at one time shall constitute a Member for life. The Presidents of all Horticultural Societies shall be, *ex-officio*, Members of this Association.

ART. VIII.—This constitution may be amended by a vote of a majority of the members present at any regular meeting—notice of the proposed amendments having been given at the preceding meeting.

By-Law I.—The General Fruit Committee shall thoroughly investigate the subject of Fruit Culture. It shall collect such useful and interesting information in reference to this subject as may be in its power, and accompany the same

with an Annual Report to the Association at the November Meeting.

2.—The Committee on Publication, to whom all the Reports of the Fruit Committee shall be referred at the November meeting, shall examine these Reports, and embody the information they contain in a general Report, to be submitted to the Annual General Meeting: and, after approval, cause the same to be printed in pamphlet form, for distribution among the Members.

3.—There shall be an exhibition of Fruits, and a discussion upon their properties, at each regular Meeting.

4.—The annual Subscription shall be due in advance, at the Annual January Meetings.

5.—The President, (or, in case of his disability, the Senior Vice-President,) may convene Special Meetings at such times and places as he may deem advisable; and shall convene such Special Meetings, at any time, on the written request of five Members.

6.—The President shall deliver an Address on some subject relating to the objects of the Association at the Annual General Meeting, and nominate members to fill any vacancy occurring in any office during the intervals between the Annual January Meetings.

7.—The Treasurer shall receive all moneys belonging to the Association, keep a correct account thereof, and submit the same at each January Meeting.

8.—A Committee of two shall be chosen at the November Meeting to audit the account of the Treasurer.

It shall be the duty of the Secretary to keep a record of the proceedings of the Association, conduct the correspondence, give not less than ten days notice of all Meetings to the Members, and specify the business of Special Meetings.

10.—At Special Meetings no business shall be transacted except that stated in the Secretary's circular.

11.—The order of business at the Annual Meetings in January shall be—1st reading of Minutes; 2nd, reading of Reports of Officers and Committees; 3rd, delivery of Address by the President; 4th, Election or Appointment of the Officers and Committees; 5th, Miscellaneous Business.

12.—These By-Laws may be amended at the Annual January Meetings, by a vote of two-thirds of the Members present.

On motion of J. Bruce, seconded by Mr. Arnold, it was

Resolved,—That whereas Canada West is naturally one of the finest Fruit-growing countries in the world, and whereas it is desirable to offer every inducement possible to the development of this source of our wealth, therefore this association do suggest to the Board of Agriculture, that it is very desirable to increase considerably the premiums offered for "Horticultural Products," with a view of stimulating this branch of industry.

The secretary was requested to prepare from the Minutes of the Association, a list of the Fruits recommended for *general cultivation*, and of those recommended for further trial, and cause the same to be printed in the Canadian *Agriculturist* and other leading papers.

In obedience to this request the Secretary prepared the following:

LIST OF FRUITS RECOMMENDED BY THE
UPPER CANADA FRUIT GROWERS'
ASSOCIATION.

APPLES

For General Cultivation.

Baldwin, south of the G. W. R. and Lake Ontario; Duchess of Oldenburg; Early Joe—as a dwarf for gardens; Early Harvest; Esopus Spitzenburg; Fameuse, or Snow-Apple—especially in the colder parts; Fall Pippin; Golden Sweet; Gravenstein; Golden Russet, as the best Russet; Hawthornden; Keswic Codlin; Northern Spy; Pomme Grise; Red Astracan; Rhode Island Greening, in the vicinity of the Lakes; Ribston Pippin; Roxbury Russet, for its long keeping qualities; Rambo, in suitable localities; St. Lawrence; Talman Sweet.

For further Trial.

Benoni; Belmont; Beauty of Kent; Colvert; Dominic; Fall Janetting; Jersey Sweet; Porter; Primate; Sweet Bough; Summer Rose; Swaar; Twenty Ounce Apple; Wagener; Westfield Seek-no-further.

PEARS

For General Cultivation.

Bartlett, south of the G. W. R. and Lake Ontario; Belle Lucrative, on quince stock; Flemish Beauty, on pear stock; Louise Bonne de Jersey, particularly on quince stock; Made line; Seckel; Tyson; White Doyenne.

For further Trial.

Beurre Giffard; Beurre d'Anjou; Duchess d'Angouleme; Osband's Summer.

CURRENTS

For General Cultivation.

Black English; Black Naples; Cherry; Red Dutch; Victoria; White Dutch; White Grape.

For further Trial.

Ogden's Black Grape; Prince Albert; Red Russian.

STRAWBERRIES.

For General Cultivation.

Burr's New Pine; Jenny Lind; Wilson, for market.

For further Trial.

Hooker; Monroe Scarlet; Trollope's Victoria; Triomphe de Gand.

RASPBERRIES

For General Cultivation.

Franconia; White Antwerp.

For further Trial.

Brinckle's Orange; Belle de Fontenay; Fae-tollf; Knevet's Giant.

GRAPES

For General Cultivation.

North of Lake Ontario and G. Trunk Railway; Clinton.

For further Trial.

Concord; Diana; Delaware; Hartford Prolific; Rebecca.

It was resolved that the association do hold its July meeting for 1862 at the town of St. Catharines, and its November meeting for 1862 at the city of Toronto, in consequence whereof the meetings for 1862 will be as follows:

On the 16th of July, at the Town of St. Catharines.

On the 12th of November, at the City of Toronto.

And it was also decided that at the next meeting in July, the association will discuss and determine the varieties of cherries, plums, and gooseberries best suited to our climate.

The association then proceeded to the discussion of grapes, as follows:

CONCORD GRAPE.

Mr. Bruce,—Had seen it only at Hamilton, promised to be one of our favorite grapes.

Mr. D. Murray,—Is one of the most hardy a fine berry and bunch, free from mildew, retains its berries, perfectly ripe on the 6th September for the last two years on open trellis, flavors superior to Isabella, is a strong free grower, ripens the wood well to the end of the shoots.

Mr. Laing,—Considered it one of the best is hardy, and earlier than the Isabella.

Mr. Arnold,—It is perfectly hardy with protection, do not find it a strong grower: great bearer, it ripens about a week before the Isabella, very pulpy with strong musky flavor and odor.

Dr. Hurlburt,—It bears well, ripens early very little earlier than the Isabella, perfect hardy, is grown by me on west side of *buildings*.

Mr. Brennan,—Is a valuable variety, good and hardy.

Mr. Holton,—The vine is quite hardy, a strong grower, think they did not ripen with me any earlier than Isabella, but the vine was neglected.

Mr. A. Leslie,—Has not fruited it, very hardy.

Mr. G. Leslie,—It ripens well in Toronto, hardy and productive.

Mr. Beadle,—It ripens a week or ten days earlier than the Isabella, is very hardy and set to be patient of abuse, neglected plants bear good crops and ripening well.

Mr. Freed,—Considers it the handsomest and best black grape cultivated; ripe 25th Sept.

CANADIAN CHIEF.

Mr. Murray,—Have had it planted for five years; it mildews badly and has not ripened a bunch; do not think it sufficiently hardy for Canada.

Mr. Arnold,—Have had it six years in open air, it is a fine grower, is liable to mildew, as indeed do all varieties both native and foreign with me, the fruit scarcely ever ripens.

Mr. Freed,—It is more subject to mildew than any other variety, is two weeks later than the Sweet Water, have had it twelve years but cannot get any fruit in the open air.

Mr. McNab,—It is too tender, cannot fruit it.

Mr. Brennan,—Have had it to bear well three years in succession, it will do in a pet spot, and needs careful cultivation. It is not suitable for Canada generally.

Mr. Geo. Leslie,—Have had it six years in a good location but it does not ripen, is very subject to mildew, and not suitable for out door culture.

DELAWARE.

Mr. Murray,—Small bunch and berry, weak grower, abundant bearer, wood very short-jointed and very hardy, one of the finest flavored grapes, ripens about the middle of September or ten days before Isabella.

Mr. Freed,—A slow grower and small berry, of fine flavored

Mr. Arnold,—Vine perfectly hardy, a moderate grower, have not yet fruited it.

Dr. Hurlburt,—Vine hardy, fruit very high colored.

Mr. Holton,—Hardy, slow grower, have not fruited it, but have tasted the fruit raised in Milton and found it of fine flavor.

George Leslie,—One of the hardiest, have not yet fruited it.

DIANA.

Mr. Murray,—It ripens a week before the Isabella, is a fine grower, hardy, bunch smaller than Isabella, but flavor better.

Mr. Campbell,—Have seen it in Woodstock a very favourable locality, during the last part of September, but it was green, quite unripe.

Mr. Freed,—Find it to be a good grower, I am well pleased with it so far.

Mr. Arnold,—Produced some fine clusters that had kept very perfectly. It is a favorite grape, one of the best growers, flavor next to Delaware, berry and bunch larger. It is new to me on acquaintance, some berries on the vine ripen before the rest; the average time ripening ten days earlier than the Isabella; do not think the vine is quite as hardy as the Concord, but is quite as hardy as the Isabella.

Mr. Holton,—Have fruited it for two years, and find it perfectly hardy; flavor almost as high as the Delaware; ripens earlier than the Isabella, about at the same time with the Concord.

Mr. Geo. Leslie,—Is one of the best yet introduced—a great favorite about Toronto, comes the nearest of any to the Delaware in flavor, and ripens two weeks before the Isabella.

REBECCA.

Mr. Murray,—Is the best hardy white grape, bunch a little larger than the Diana, berries medium size, flavor preferable to the Isabella and equal to the Diana, ripens two weeks before the Isabella.

Mr. Arnold,—Is the best hardy white grape, have not yet seen any mildew on this, but expect to, as all varieties seem subject to mildew with me, improves as the vine becomes older, flavor equal to Diana, and it ripens about the same time.

Mr. Holton,—I have not fruited it, but find the vine to be perfectly hardy, a moderate grower, and that it ripens its wood early.

CLINTON.

Mr. Campbell,—Have seen it in nearly every county of the Province, it is perfectly hardy, an early and abundant bearer, bunch medium size, berries small, ripens every season, frosts only improve the flavor which is harsh until frost comes, and the fruit keeps well until February.

Mr. Murray,—Is perfectly hardy but flavor of second quality.

Mr. Freed,—It may be an excellent grape for the North, but not desirable where the finer varieties can be grown.

Mr. McNab,—Find it a sure crop every year; by thinning out the berries are very much increased in size, and the flavor is improved by allowing them to hang until frost comes.

Mr. Alex. Leslie,—Is hardy and vigorous, and a good fruiter, often ripens irregularly, there being many green berries, flavor second quality, the fruit keeps well.

Dr. Hurlburt,—It is very hardy, a good bearer, and the fruit improves in quality by culture.

Mr. Arnold,—Is well calculated for the north, perfectly hardy, but not desirable where finer varieties can be successfully grown.

Mr. Holton,—It is exceedingly valuable for the north, is the most valuable of any for Canada generally.

Mr. Geo. Leslie,—It is the very grape for the northern townships, will yield a good full crop every season where no other crop can be grown.

Mr. Beadle,—It keeps the best of any of the grapes so far as my experience goes, retaining its freshness and sprightliness, while the others are heavy and dead.

ISABELLA.

Mr. Campbell,—It sometimes freezes down. can't say that I have seen any ripe in Canada, it colors long before it ripens; it is a free grower and abundant bearer.

Mr. Murray,—It ripens in favourable seasons, but is not to be depended on.

Mr. McNab,—It is not worth while to trouble with it at Hamilton, some of the seedlings from it ripen about 25th Sept., but they require good cultivation.

Mr. Alex. Leslie,—It ripens pretty well at London, but is improved after a little frost, it mildews as bad as any.

Mr. Arnold,—It always colors with me, (Paris) but only in one or two seasons have I known it to get ripe.

Mr. Beadle,—On the gravelly soil of St. Catherines it generally ripens, but in less favored positions in my vicinity it very frequently fails to do so.

Mr. Geo. Leslie,—It is an old favorite in Toronto, and on the whole is one of the best we have; it ripens if the frosts keep off; shelter and situation are everything; the wood is rather tender.

CATAWBA.

Mr. Campbell—Has never seen any ripe in Canada.

Mr. Murray—Thinks he saw some ripe this season, but that it is not suited to Canada.

Mr. McNab,—Will not often ripen in Canada, except in the extreme south end.

Mr. Alex. Leslie,—Does not ripen at London.

Mr. Arnold,—Is not worth cultivating, have rarely seen it colored even at Paris.

Mr. Beadle,—It ripened in St. Catherines once in many years, and that only in favourable locations.

Mr. Geo. Leslie,—Too late in ripening for Canada generally.

SWEET WATER.

Mr. Campbell,—Is tender, very subject to mildew, not a good bearer, ripens some seasons.

Mr. Murray,—Should be planted only in the grapeery.

Mr. McNab,—Have had it 18 years, never ripened more than a few bunches.

Mr. Alex. Leslie,—Have tried it for 6 years, but never had any fruit

Mr. Freed,—Had some fine fruit last year, but have seen it mildew badly this same season on older plants.

Mr. Luings,—It is too tender for out-doors.

Mr. Arnold—Have not found it more liable to mildew than other varieties, it bears good crops every year with me.

Mr. Holton,—It is quite too tender.

Mr. Beadle,—Have long ago discarded it as comparatively worthless.

Mr. Geo. Leslie,—If kept free of mildew it ripens very well, but it is tender, and requires a good aspect and careful protection.

NORTHERN MUSCADINE.

Mr. Arnold,—It is as hardy as the Clinton, have not yet seen any mildew on it, while other varieties around it were all mildewed, the berry is of good size, though very liable to drop from the bough as soon as it is ripe, bunch small, flavor sweet, very musky, ripens as early as the Isabella.

HARTFORD PROLIFIC.

Mr. Murray,—Is one of the earliest grapes, next to the Delaware in flavor, berry and bunch above medium size, a strong grower, very hardy, ripens about the 1st September; berries are apt to drop from the bunch.

Mr. Arnold,—Is the earliest American grape I have, a good grower, hardy, flavor about equal to the Concord or a well ripened Isabella.

Mr. Holton,—Have found the vine perfectly hardy, a good grower, have not yet fruited it.

Mr. Beadle,—An excellent variety, that promises to ripen well in a large part of Canada, earlier than Concord and nearly, but not quite, equal to it in flavor; perfectly hardy thus far, so far the past winter unharmed when an Isabella to the side of it was cut down to the ground.

Mr. Geo. Leslie,—One of the most promising grapes we have, earlier than the Concord and superior to it in flavor.

PROTECTING GRAPE VINES.

Mr. Brennan,—Recommend that all grape vines be covered to protect them from injury, rapid thawing and freezing, use coarse litter from the stable, only a light covering.

Mr. McNab,—Uses evergreen branches and corn-stalks.

Mr. Geo. Leslie,—A light covering of earth.

Mr. Freed,—Would use some clean material, have found material from stable to cause mildew in the wood.

Dr. Hurlburt,—Covers with boards.

Mr. Arnold,—I use pea straw, cover lightly with earth.

Mr. Beadle,—Where snow lasts all winter, merely laying them on the ground so that it will be covered with snow, will be quite sufficient.

On motion of Dr. Hurlburt, seconded by Mr. Freed, it was Resolved, that this association commends that all varieties of the grape be laid down and protected by a light covering during the winter and early spring.

On motion of D. W. Beadle, seconded by Mr. Holton, Resolved, That this association recommends the following varieties of grape as the best and soil of Canada than any other with which we are acquainted; viz., Hartford Prolific, Concord, Diana, Delaware and Rebecca.

On motion of W. Holton, seconded by J. Campbell, Resolved, That this Association commends the Clinton grape as well adapted

general cultivation in the colder parts of Canada West—north of Lake Ontario and the Grand Trunk Railway.

The Association then adjourned.

SPECIAL MEETING,

of the Fruit Growers' Association of Upper Canada, held at the City of Hamilton on Thursday February 20, 1862, for the purpose of considering the Report of the Secretary on the answers sent in reply to the questions issued by the Association.

The President being absent, Mr. Holton was called to the Chair.

The Secretary reported that he had prepared an abstract from the answers sent to the association in such a manner as to arrange the information under the head of each county, naming the parties, with their residences, who had responded; that replies had been received from 5 counties, that 26 counties yet remained to be read from, that of the counties from which replies have been received, very many are from one locality in the county; and suggested the propriety of requesting all the newspapers in the province disposed to further the interests which the association is designed to promote, to publish the questions issued by the association, and to attract the attention of their readers to the importance of giving the desired information.

On motion of Mr. Laing, Seconded by Mr. Holton.

Resolved: That the abstract prepared by the Secretary remain in his hands until the next regular meeting, and that the Secretary be requested to have the questions published in as many papers throughout the Province as may be willing to insert the same gratuitously.

On motion adjourned.

President's Annual Address, delivered before the Fruit Growers' Association of Upper Canada,

By His Honor, Judge Logie.

GENTLEMEN,

Before retiring from the office which I have the honor of filling during the past year, it is my duty to address a few remarks to you, and in infancy of this society I think I can best address its interests by directing attention to the objects of the association and its importance not only to the Horticulturist and Fruit grower, but to the general interests of the country, and by exhorting you to increased efforts for the accomplishment of these objects by reminding you of what you have accomplished during the past year, and shewing how successful other societies of similar nature have been.

The objects then contemplated in the formation of this Society, and which we have been pursuing during the past year and are now endeavouring to carry out are.

First.—The discussion by members of the Society of the relative merits of the different kinds and varieties of fruit, the determination and selection of the best varieties suitable for cultivation in Canada West, and the publication of the list of fruits so selected and recommended.

Second.—The revision from time to time as occasion may require of the Catalogue of fruits, and the addition thereto of such new varieties as may after a sufficient trial be deemed worthy of general cultivation, and striking out the names of any that may on further trial be found unworthy of cultivation, either from being deficient in flavor or not sufficiently hardy to stand the severity of our climate.

Third.—The promotion by the society of the cultivation and improvement of native and indigenous fruits, the testing of all new varieties of fruit, the discussion of their merits or defects, and making known the result of such trials.

Fourth.—The determination of the names of fruits; and the identification of fruits having different names in different localities, or which, having received new names through the ignorance or fraud of cultivators, have been distributed as new varieties.

Fifth.—The discussion of all questions relative to Fruit culture, and disseminating information respecting the same, such as the most proper or most advantageous modes of cultivation, the soils and exposures most suitable for the different kinds of fruit, the manures most beneficial and the best modes of applying the same, the diseases to which the various fruit-bearing trees, shrubs, and plants are liable, with the remedies for such diseases; the insects injurious to the different kinds of fruit, and the best means of preventing or restraining their ravages; the best modes of ripening, gathering, and preserving fruits; and any other subject bearing upon fruit culture.

The importance of these objects is apparent to all who have given their attention to the subject, but the great mass of the people have not given the matter any consideration and are not likely to become aware of the importance to their interests of this Society unless their attention is specially directed to the subject.

No intelligent farmer or intending Fruit-grower would plant an orchard without endeavouring to procure the best varieties suitable to the climate, but with every care on his part he will meet with frequent disappointment (as every one who has engaged in Fruit-culture can testify.) Some of the varieties may turn out to be of inferior quality, for it sometimes happens that a fruit which attains a high degree of perfection in one locality, may prove very inferior in another place where the temperature is a few degrees higher or lower; or a variety of fruit of superior flavor and most desirable for cultivation may prove too delicate to withstand the severity of our climate. To all such as desire to have the *best varieties* of fruit the benefit of such a society as this will be manifest; for, although the dissemi-

nation of information by this Society, respecting the qualities and hardness of fruits, cannot prevent fruit growers from being occasionally disappointed, yet it must be the means of greatly lessening the number of such cases. And if all who have had experience in fruit culture would join the Society and engage in its deliberations much more certain results would be attained, and much greater reliance could be placed upon the list of fruits recommended by the Society.

A large proportion, however, of the farmers of Canada, when they make up their minds to plant an orchard, instead of going to a respectable and responsible nurseryman and obtaining from him *good varieties* of fruit in *good condition*, take from some travelling fruit pedlar or pretended agent for the sale of trees, whatever he may happen to have on hand, and upon his recommendation only. As he has probably bought a stock of trees, and sometimes only the *refuse trees* of a nurseryman's stock solely for the purpose of selling again and *must* sell what he has, whether they are good or bad, suitable or unsuitable to the climate and locality, his interest clearly is to get rid of his trees as fast as possible. The interest of a nurseryman, on the contrary, is to give satisfaction to those who deal with him, as his character and business prospects depend upon his giving such satisfaction. It is not surprising that trees bought in the way I have mentioned from travelling agents and fruit tree pedlars should turn out badly, that a large proportion do not survive, and those which do, turn out to be comparatively worthless; what is surprising is that careful men who would not sow a field with wheat without endeavoring to obtain the best and most suitable kind for seed, or who in raising stock would get the *best* that their means allow, are careless and indifferent in a matter of such importance as the planting of an orchard. In the event of getting an inferior kind of wheat there is at the worst only the loss of the ground for one year, and if inferior stock is got there will be no loss, as even inferior animals can be sold in a year or two for as much or more than it cost to raise them; but when an orchard is planted with inferior or worthless fruit the case is very different, the use of the ground is in a great measure lost for perhaps 15 or 20 years; how important then is it to secure the best varieties and obtain fruit that will be worth hundreds of dollars annually, instead of having the ground occupied by trees the fruit of which will not pay the expense of gathering and taking to market.

The manner in which fruit trees are bought from tree pedlars and *pretended* agents, and the result of such purchases, is no imaginary case I have only stated what has again and again been brought under my own notice in the Division Courts in actions brought for the price agreed to be paid for the trees. I trust that this Society and the publication of its proceedings and catalogue of fruits may be the means of preventing

farmers from purchasing trees from irresponsible people, and of inducing them to order the most suitable varieties from reliable nurserymen, or their *duly authorized* agents, who can be depended upon to deliver the kinds ordered in good condition.

As one of the objects of this Society is the naming and identifying of the different kinds and varieties of fruit, those farmers and fruit growers who are not acquainted with the names of the fruits they may have in their orchards, will by joining this Society, and bringing to the meetings specimens of the fruit, get the fruit identified and named by the members of the Society, most of whom are experienced cultivators and well acquainted with all the varieties in common cultivation.

I have to congratulate you upon the progress made by the Society during the past year. During the first year of its existence, owing in a great measure to the lamented death of its first President, the late Judge Campbell, of Niagara, nothing was done towards the accomplishment of the objects of the Society; but during the past year several meetings have been held for the discussion of the merits of the different varieties of fruit and their adaptability to this climate, and a list of fruits has been made and recommended which is complete as far as it goes, it embraces the varieties of apples, pears, currants, strawberries, and raspberries considered most desirable for cultivation in this country; the merits of the New Rochelle or Lawton Blackberry were discussed, and it was decided not to recommend it for cultivation. I hope that during the present sitting the best varieties of the other fruits, such as grapes, plums, cherries, peaches, gooseberries, &c. may be determined, so that before the planting season commences a complete list of all fruits recommended by the Society may be published. I think it is of particular importance that the subject of the best varieties of hardy grape should engage your early attention. A greatly increased interest has for the past few years been felt in the cultivation of the grape in the United States, and that interest is extending to Canada. A large number of the new varieties or varieties with new names are advertised by nurserymen but little or nothing is known of them: the people generally only know the old varieties, such as the Isabella and Catawba, and perhaps the Sweetwater. And as the object in producing new varieties has been to produce a *hardy grape* that will *ripen early* and produce a fruit of superior quality to these old varieties, it is important to know in how far these objects have been accomplished in any of the new varieties, and let the public know what varieties have on that point been found to be most desirable for cultivation in this country. In determining the varieties of grape most suitable for cultivation, greater care is perhaps required in coming to a conclusion than in the case of any other fruit; the quality and flavor of the grape, and its value, particu-

for the manufacture of wine is so dependent upon the quality and nature of the soil, the exposure to the sun, the altitude at which it is grown, and the extremes of temperature to which the plant is subjected, that, as is well known, a vine which in one locality will produce grapes of a particular quality, will not produce them of the same quality in another locality even in the same neighbourhood, hence the necessity of caution in making a selection.

While the progress we have made during the past year should encourage us to persevere in carrying out the objects of the Society, we should also be encouraged to perseverance by remarking the success which has attended similar societies in the United States. In that country fruit growers' Societies have been eminently successful. I shall allude here only to the chief and important one, the American Pomological Society. I believe that society was instituted in 1848 or '49, and its progress has since that time been most remarkable, its meetings have been attended by fruit growers and those interested in fruit culture from all parts of the United States and California; the discussions, addresses, and lectures have been most successful, and have attracted large audiences. The catalogue of fruits recommended by it have been found most useful and reliable, and it is taken as a standard authority on the qualities of fruit. That Society and others of a similar nature have given an impetus to the cultivation of the best varieties of fruit by diffusing a general taste for the science of Pomology, inspiring fruit growers with greater zeal and industry, and by promoting kindness and good feeling among those interested in the subject.

I have mentioned the importance of a society such as this to individual Fruit growers; it can be seen to be of equal importance in a national point of view. It was stated by the Honorable Marshall P. Wilder, President of the American Pomological Society some two or three years ago, that it was not more than a quarter of a century since the establishment of the oldest Horticultural Society in the United States, and that the fruit crop of the country was not then deemed worthy of a place in the national statistics. It was also stated, I think, in the same year by Lewis F. Allan, in a lecture on the apple, delivered at New Haven, that after a careful computation he was convinced that the aggregate annual value of the fruit crop of the United States could not be less than \$26,000,000, twenty six millions of dollars, that ten counties alone in the State of New York gave an average \$200,000 each, that Niagara County 25 miles square yielded \$250,000. The fruit crop of the State of New York he estimated as being worth annually \$6,000,000; of New England \$4,000,000; of Ohio \$3,000,000; of Pennsylvania and New Jersey \$3,000,000; of the Northwestern States \$4,000,000; and of the Southern States \$9,000,000. And the value of the fruit crop is constantly and steadily increasing, so great has

been the progress of fruit culture in that country in a few years.

I am not aware that any estimate has been made of the value of the fruit crop in Canada or that we have sufficient data from which to form an estimate. Whatever its value may be it cannot be denied that in Canada the cultivation of fruit has not received the attention which it deserves. While great progress has been made in the science of Agriculture, a progress which is perhaps second to no country in the world, a corresponding progress has not been made in pomological science: much remains yet to be done, and in view of the importance and value of the fruit crop of a country, as shewn by the statistics I have given, we should persevere in the work in which we are engaged, and thereby aid in increasing the resources and wealth of the country. I think we may confidently look forward to a success similar to that attained by the American Pomological Society, and other societies of a similar nature in the United States, and that like important results will follow our efforts.

There is a great pleasure to be derived from the meeting together of those engaged or interested in the prosecution of a scientific enquiry, particularly of any branch of natural science, and the interchange of ideas and opinions on the subject in which they are interested, which those only can fully appreciate who have engaged in such enquiries. And I am sure that all who have attended our meetings during the past year can join me in testifying to the pleasure we have felt in our mutual intercourse and interchange of opinions on a subject so interesting to us all as that of the cultivation of fruit.

In conclusion, I beg leave to express my sense of the honor conferred upon me by placing me in the position of President of your Society during the past year.

Fruit Growers' Association.

Series of Questions issued to Horticultural Societies, &c.

THE FRUIT GROWERS' ASSOCIATION OF UPPER CANADA

Desirous to collect and circulate information relative to the production of the several kinds of fruits in the various parts of the Province, respectfully requests the several Horticultural societies, County and Electoral Division Agricultural societies, Township Agricultural societies, and all gentlemen interested in the subject of fruit culture, to cause answers to the following questions to be prepared, and sent to the Secretary, Mr. D. W. Beadle, at St. Catharines, C. W., on or before July 1st, 1862.

As the questions are all numbered, the answers may be numbered to correspond, and thus avoid writing down the question intended to be answered.

QUESTIONS.

APPLES.

1. What varieties would you recommend as most suitable to be planted in your locality? 2. What varieties are most profitable for market? 3. What varieties are the most hardy? 4. What varieties have been tried in your neighborhood and found too tender? 5. Are apple trees subject to any disease, or the attacks of any insects in your section, and if so what? 6.

SEASON FOR TRANSPLANTING.

6. What season has been found most favorable for transplanting, spring or fall?

DWARF TREES.

7. Have dwarf apple, pear, or cherry, trees, or either of them, been planted in your vicinity, and with what success?

PEAR.

8. What varieties of pear would you plant in your section? 9. What varieties are most profitable in your locality for growing fruit for market? 10. Have any varieties been planted and found too tender for your climate, and if so what are they? 11. What varieties do you find to be the most hardy? 12. Are pear trees subject to any disease with you, or to the attack of any insect, and if so what?

PLUMS.

13. What varieties of plums succeed best in your section? 14. Have any varieties been tried which proved too tender for your climate, and if so, which? 15. Which varieties would prove most profitable for growing fruit for market? 16. Is the fruit stung by any insect in your locality, thereby causing the fruit to fall prematurely, and if so what insect? 17. Is the tree liable to any disease, or to the attacks of any insects, and if so what?

CHERRIES.

18. What varieties of cherries succeed best in your neighborhood. 19. Have any varieties proved too tender to endure your climate, and if so which are they? 20. What varieties can be profitably planted for marketing the fruit? 21. Are the trees subject to any disease, or to the attacks or any insects, and if so, what?

PEACHES.

22. Can the peach tree be grown in your section, and if so, what varieties succeed the best.

APRICOTS AND NECTARINES.

23. Can the apricot or nectarine be grown in your section, and if so what varieties succeed the best?

QUINCE.

24. Can the quince be grown successfully in your section?

STRAWBERRIES.

25. What varieties of strawberry have been

found to succeed well in your neighbourhood? 26. What varieties would you plant for market?

RASPBERRIES.

27. What varieties of raspberries have been found to succeed best in your locality? 28. What varieties do you recommend to plant in your neighborhood, for growing fruit for market?

GOOSEBERRIES.

29. What varieties of gooseberries succeed best in your section? 30. Is the fruit ever covered with mildew? 31. Do you know any varieties that are exempt from mildew in your section? 32. Do you know any means of preventing the mildew, and if so, what?

BLACKBERRIES.

33. Has the New Rochelle blackberry been tried in your vicinity, and with what success?

CURRANTS.

34. What varieties of red, white, and black currants are most esteemed in your locality?

GRAPES.

35. What varieties of grape have been planted in your section? 36. Have any of them proved altogether too tender for your climate, and if so, which? 37. Have any of them proved perfectly hardy, and if so, which? 38. Do any of them invariably ripen their fruit well every season, and if so, which? 39. Are there any vineyards planted in your neighbourhood, and if so with what varieties? 40. Any other formation, pertinent to the subject, such as character of the soil that predominates in the orchards of your section; the soil found to be most suitable to the several kinds of fruit, &c.

41. Do you know of any seedling fruit merit in your vicinity? if so please give its history and description: kind, size, color, quality, time of ripening, growth of tree, &c., &c.

Editors of papers throughout the Province are requested to give the above one or two insertions, in order that there may be every opportunity afforded to make the information sought, full as possible.

The Culture of Asparagus.

Read by Mr. H. Shaw, Gardener to the Royal Society, before the Hamilton Horticultural Club.

MR. PRESIDENT and GENTLEMEN.—It is tempting to write a few remarks on the culture and management of Asparagus, it is required that I should go on to speak of the history of this vegetable. It is found a native plant on the sea shores of Britain. Asparagus has a perennial root and annual stalks, has two varieties, the purple and the green. The purple is a larger kind, growing full and closer; although handsomer in appearance it is not considered so good in flavour as green. But to discuss varieties and their

is not my object here, but rather to give a few practical hints on the formation of an asparagus bed, and its management afterwards.

The first point is the selection of a suitable spot of ground. The asparagus likes deep sandy loam, and the ground should, at least, be trenched two and a half feet deep, laying the bottom about eight inches of solid cow manure. Care should be taken that the hole of the ground is turned regularly, and the ribs left behind the trenches. When the required space is turned up in this manner upon a good covering of well decomposed manure, taking care to keep the surface level, you proceed.

After the ground is thus prepared the next step is procure one or two year old plants from the seed; two year old plants are preferable because they will give asparagus one season earlier for table. The period at which it has been got ready, ought not to be later than the second week in April, if spring planting is preferred, and last week in October for fall planting. I have sowed asparagus seed in the first week in May in Canada, and planted the following October upon ground prepared as stated above, and in a part of Canada more rigorous in climate than my present locality, and I cut very fine asparagus from it the third year, fit for any table; but replanting two years old plants it can be cut the second year after planting. Now as planting the ground so prepared.

Asparagus is generally plowed in beds about four feet wide, thus giving three rows in the bed at eighteen inches from row to row, the side rows being six inches from the edge of the bed, and in the row fifteen inches from row to plant. But no benefit is derived from close planting. I believe two feet from row to row and eighteen inches from plant to plant is preferable and will yield finer asparagus. In planting, the crowns should not be more than one and a half inches under the surface for the covering every season adds to the depth over the crown. The beds should always be kept free of weeds, and the surface kept loose and free, which greatly tends to the vigorous and healthy growth of the plants. Care should be attended to throughout the whole season of its growth, more especially the first season after planting, and in the fall, when the stalks are fully ripe, and cut off, the bed or beds should be covered two or three inches thick with good rotten manure, and over all a covering of stable dung or some litter as a protection against frost. This is the finishing touch for the fall. In the spring the litter should be removed, and a good sowing of salt given regularly over the bed, and then a three pronged fork used to break the surface and mix all the short manure left on the bed. The alleys also should be forked up, throwing a little sprinkling

over the bed, which should afterwards be neatly raked.

Asparagus beds so prepared and attended to will last a quarter of a century. I have seen at Airthrey Castle, Stirlingshire, Scotland, asparagus beds which had been cut for a period of fifteen years, and looked as if they would stand other ten years. I believe it the best maxim that whatsoever a man doth, let him do it well." It gives most satisfaction and rewards the individuals at the end. I think every person who has a few square yards of spare ground ought to have his asparagus bed, all the trouble and expense is the formation of his bed; after planting there is but little trouble and expense attending it. And amongst all the vegetables there is none more relished than the asparagus coming in use early in the season, when there is very little else can be had from open air growth. It is always furnished for the table of the rich, but it is also within the reach of the poor man who can commend a small patch of ground that he can call his own.

For the Canadian Agriculturist.

Dwarf Apple Trees Again.

I was just about to comply with the request made in last year's *Agriculturist* by Mr. Beadle, to say a few words about dwarf apple trees, when I received your last number, containing some rather severe, and, I think, unwarrantable strictures, from R. B. Werden, upon "the representations made by the nurserymen in their catalogues and books, that the dwarf apple will bear when it is a small bush, or like the dwarf pears." This Mr. W. pronounces "only a humbug, and done for the purpose of selling their trees." Many persons will no doubt look upon such a charge as calculated to excite the displeasure of all nurserymen, who have ventured to say a word in favour of the early bearing properties of the dwarf apple. But I am very much inclined to think that every Canadian nurseryman can afford to smile, and to impute Mr. Werden's disappointment in his dwarf trees to his former unsuspecting credulity, or to his ignorance of the requirements of the trees so bitterly complained of. "For the purpose of selling their trees" indeed! Now if Mr. W. knows this to be a fact, he perhaps can tell us of some nurseryman who has a surplus of genuine dwarf apple trees, upon the true paradise stock. I have never yet known such, and should be much obliged for the information, having long been under the impression that the demand was greater than the supply.

Now sir, I shall venture to predict, that the barrenness of Mr. Werden's trees is traceable to one or more of the following causes, viz., 1st, having been grafted several inches below the surface of the soil, and that they are now principally growing upon their own roots, instead of

depending solely upon the roots of the paradise stock; or they have not been grafted upon the paradise stock at all; perhaps they may have been grafted upon the Danem stock, or upon seedlings from the paradise apple, a large portion of which will, in all probability, partake more of the character of the apple trees fruiting at the time in their immediate vicinity than of the original paradise.

Mr. Werden concludes his remarks by asking "for more information respecting dwarf apple trees," which leaves the impression upon the minds of his readers, that he was losing confidence, either in his "most responsible nurserymen in Rochester," or in himself as a skillful cultivator. Now, Sir, if my opinion and experience were asked in this matter I should say more in favor of the early bearing properties of dwarf apple trees than Mr. Werden accuses those "humbug nurserymen" of saying, viz., that they will, when properly managed, fruit earlier than the dwarf pear.

Let us suppose, Mr. Editor, that you are about to plant 12 dwarf apple trees, say of the following varieties, Red Astachan, Melon, Baldwin, Sweet Bough, Summer Rose, Golden Sweet, Wagner, Northern Spy, Benoni, Early Strawberry, Gravenstein, Keswick Codlin, and when got from the nursery they will be only two years from the bud perhaps, and, if good, they will be little stunted looking things, from one foot six inches to two feet high, budded at the ground, and when transplanted, let the bud be two inches below the surface. Some varieties, such as Northern Spy, will need shortening in to encourage lateral growth, and pruned a little every year to keep the head open and encourage fruit spurs. Other varieties, such as Wagner, will need no other pruning than picking some of the young fruit, and encouraging the growth of wood; let the strong growers be put on rather poor soil, and the tardy growers upon good soil, and all kept free from the bark house, and I am satisfied that every person who wishes to combine in one small tree or bush all that is useful, healthful, and beautiful, in flower and fruit, will find nothing approximate so near to his desires as the dwarf apple tree.

Now, Mr. Editor, let me invite Mr. Werden to visit the town of Paris, any time between the months of June and November, and if there are any apples in this part of Canada, I think he may see some here, on bushes not more than three or four years old, and from two to four feet high. We will also show him some of these bushes, after being planted ten years, that have now heads from 20 to 35 feet in circumference, and have borne at least seven good crops of apples.

Hoping that Mr. Werden will endeavour to examine his dwarf apple trees, ascertain the cause of their unfruitfulness, and report the same to the *Agriculturist*, I remain yours, &c.,

CHARLES ARNOLD, *Nurseryman*.

Paris, C. W. February 17th, 1862.

Peterborough Horticultural Society.

In a recent number of the *Peterborough Review* we find a report of the Annual Meeting of this new Horticultural Society, at which the following remarks, showing the progress of the Society, were made by the able President, the Rev. V. Clementi.

Gentlemen,—This being the first annual meeting of the Peterborough Horticultural Society permit me, ere we proceed to the election of the officers for the ensuing year, to address a few words to you, relative to the proceedings of the society during the season which, according to our By-Laws, has this day expired.

On Tuesday, the 9th day of April, last year, few members of our community, actuated by feeling of the advantages derivable from the establishment of a Society devoted to the encouragement of a more careful cultivation of flowers, and fruit, and vegetables, in the town and its vicinity, convened a meeting for that purpose, at which it was arranged that a general assemblage of such as were disposed to assist in the formation of an Horticultural Society should be summoned for the 16th of the same month. Adverse circumstances preventing large attendance on that day, the meeting was further adjourned to the 22nd, on which day Constitution and By-Laws were adopted, and officers appointed for the current twelve-month.

It was at first intended that there should be two Exhibitions during the year: the seasons, however, proving unpropitious, and other matters of great local interest intervening, the spring Show was abandoned, and the only exhibition on which we ventured took place, in the Town Hall, kindly, and without hesitation, placed by his worship, the Mayor, Chas. Parr Esq., at the disposal of the Society, on the 1st of October: an exhibition that, but for the exceedingly unfavourable state of the weather, would have proved successful almost beyond the hopes entertained by the most sanguine.

Such, gentlemen, irrespective of the detailed reports of the Secretary and Treasurer, is a brief statement of our transactions during the past season.

Before I resume my seat, however, allow me to inform you that, having accidentally met with a notice in the *Leader*, of a meeting intended to be held in Toronto, on the 30th of last month, composed of delegates from the various Agricultural and Horticultural Societies of Canada, I made a point of attending that meeting; and I can assure you that the upper section of the province was most fully and ably represented by Colone Thomson occupying the chair.

The object of the meeting was to frame a Bill to be brought before the House of Assembly during the coming Session.

I will not trouble you on this occasion,

of remarks referring to the Agricultural portion of the Bill. Mr. John Walton, President of the Peterboro' Agricultural Society, was also present, and was satisfied that the interests of the community he represented were amply secured. Suffice it to say that after an hour's adjournment (we sat from noon till mid-night); at a quarter to six o'clock the Hon. Mr. Allan moved that the following clause be embodied in the Bill, and at the motion was carried:

"Every Horticultural Society in any city, town, or incorporated village, incorporated under this act, or which may have been incorporated under any other act of the Provincial Legislature, shall be entitled to a public grant equal to the amount subscribed by the members of such Society, and certified by their treasurer to have been paid into his hands in the manner provided by the sections of the act relating to Horticultural Societies, provided that the whole amount granted to any such Society, shall not exceed one hundred pounds in any year."

I did myself the honour to address the meeting in advocacy of the claims of the Horticultural Societies. The fact of the Reporters not being returned "from refreshment to labour," till after Mr. Allan and myself had spoken, is an account for no mention being made in the papers of our remarks.

If the Bill passes the Houses, and I entertain no doubt at all upon the subject, the Horticultural Societies will be placed in a similar position to that occupied by the Agricultural Societies.

A certain number of members will be required, and a certain amount of subscription; and then the amount will be met by an equal sum from Government. The number is not to be less than 25; and the gross amount must not fall short of \$40.

Report on Fruits.

The Transactions of the Massachusetts Horticultural Society for the year 1861, comprise a valuable report, submitted by J. S. Cabot, Chairman of the standing Committee on its

having taken a view of the meteorological phenomena which characterized the past year, he noticed the injury which fruit trees sustain. The report refers to the important fact that the varieties of the same species suffered much more than others—a fact which is calculated to impress upon the minds of cultivators, the necessity of adopting the most hardy kinds. Thus in speaking of pears, the report says:

"The Bartlett and Beurre Bosc suffered the most, the trees of both having been almost universally severely injured, and in most instances wholly killed; while on the contrary, Marie Louise, Belle Lucrative, the Urbaniste and Louise Bonne de Jersey, seemed to escape unharmed; the two first of these last-

named having been, the past season, superior in quantity and quality to any season now remembered."

In regard to the special causes of the great destruction of fruit trees, the report states that perhaps no perfectly satisfactory conclusion can yet be reached, but makes the following suggestions:—

"If the attention of fruit growers should be drawn to a consideration of the matter, and by collecting of facts and comparing of opinions, some definite conclusion, as it might be, should be reached, it might induce a mode of cultivation that should measurably guard against a recurrence of the evil. On a previous occasion, similar to that of the present, the opinion was expressed that shelter to some extent, to be obtained either in the selection of a site or by artificial means, was an important element to success in the cultivation of some varieties of fruits, if not absolutely essential thereto; and this opinion has been strengthened and confirmed by observation the past season, when injury has been almost universal, and exemption from it the exception, it has been noticed that gardens or orchards that were in some way sheltered, have almost wholly escaped injury."

In this connection reference is made to the means of protection, and it is said:—

"This may be obtained by selecting a sheltered site for the garden or orchard; and where that cannot be done, by the erection of a high, close fence around it. If any question arises as to the efficacy of this last method, it needs to dispel the doubt, but a visit to the garden of Mr. Tudor, at Nahant, where, protected only by a high paling, fruit trees of all varieties may be seen flourishing luxuriantly, while outside of such enclosure, the hardiest trees cannot resist the influence of the fierce winds that blow over the peninsula. And there is no ostensible cause for the exemption from injury of the trees of Mr. Bacon of Roxbury, and Mr. Vandine, of Cambridge, and that these bore full crops of fine pears in a year so unpropitious as the past, but the shelter they receive. It further inculcates the importance, or the necessity, where profit is the object of culture, in a choice of varieties, of selecting the most hardy, keeping to view the quality of the fruit. There seems to be as much difference in the vigor and hardihood of different varieties of trees of the same species, as in the different races of animals of the same species; and it is only upon the more vigorous and hardy that a reliance can be placed."

Of strawberries, the new kinds are spoken of which were exhibited at the shows of the Society by Messrs. Hovey, and which we noticed at the time, and as we saw them on Messrs. H.'s grounds. The La Constante is described as "a magnificent fruit, of great size and beauty, of a fine color and good quality." Scott's new seedling, Lady of the Lake, is favorably mentioned. The practice of

the Belmont cultivators is alluded to as "entitled to great consideration." They depend mainly on "Hovey's Seedling, with the Jenny Lind, Boston Pine, or Brighton Pine as a fertilizer; planting them in the proportion of about six of the former to one of the latter, and setting them to single rows about four feet apart, and taking but one crop from the same vines, have new beds every year."

In regard to currants, the last year is said to have been the only one remembered in a period of forty years, in which this fruit has been much injured. Last year the blossom buds were in a great measure destroyed. Of new varieties, the La Versailles and Dana's Transparent are mentioned. The former is considered in Europe one of the best, if not the best, grown. The latter is described as very large, of fine flavor, and represented to be a great bearer.

Of raspberries, nothing particularly new was brought out last season. The Catawissa, which was exhibited as late as October 18th, may be deserving of cultivation where it is desired to prolong the season of this fruit.

Blackberries suffered severely last year by the destruction of the vines, and small quantities only were exhibited.

Of cherries, a single one from Randolph, and a branch with half a dozen black mazzards from Newburyport, were the only specimens of this fruit, grown in the open air, exhibited last season. The crop may be said to have been entirely destroyed. It is thought that many trees will not entirely recover from the effects of the winter of 1860-1.

Of peaches, there were none the past year, and the trees suffered severely—old ones being nearly all killed.

Pears, although the crop was much below an average, were generally of fine quality, owing in a great degree to the favorable autumn, and some varieties, as before mentioned, produced tolerably well.

Grapes, where the vines were wholly exposed, even in favorable situations, were much injured by the winter. Some varieties were less injured than others, among which are mentioned the Delaware and Hartford Prolific. Out of a collection of some eight or nine varieties, those and the Clinton are said to have been all that escaped serious harm. But the past summer and autumn are said to have been the most favorable for grapes of any remembered.

Some varieties, which seldom ripen here in the open air, as the Isabella, reached full maturity. Of hardy out-door varieties, E. A. Brackett exhibited a seedling, described as a black grape, heavy bloom, large bunches, thin skin, little or no pulp, very juicy, sweet and very vinous, stated by Mr. B. to have been ripe on the 10th of September. The Committee regard it as the most promising

new grape that has been brought to their notice. The hybrids of E. S. Rogers, of which we have spoken several times, are noticed, particularly No. 4 and No. 15. In regard to the experiments of Mr. Rogers and others, it is said:—

"Considered as a purely scientific experiment, that of Mr. Rogers must be deemed an eminent success; his seedlings of the first generation have parted with much of the distinctive character of the native variety, and show plain traces of their foreign parentage. Whether he has met with equal success in originating varieties that shall, from early ripening and hardness, be suited to the general wants, is yet to be established. . . . Although Dr. Van Mons has taught, and apparently established, a contrary theory—the of improving varieties by raising successive generations of seedlings—and that it may be thought presumptuous to call in question the teachings in Pomology from such a source, yet some doubt cannot but be entertained that hybridization is in the pursuit of this object, viz., the production of improved varieties essential to success, and the raising of successive generations of seedling grapes from a native or wild variety under circumstances, where admixture of other sorts was impossible, might be pursued not for eleven generations—when according to Van Mons, all the seedlings would be good, when the name of varieties would become unnecessary, and propagation by grafting and budding cease—but for double that number, without showing any very marked improvement."—*Boston Cultivator*.

Veterinary.

Inflammation in Animals.

[Lecture by Professor Dick, Principal of the Veterinary College, Edinburgh.]

In this lecture it is proposed to give a short account of the inflammatory process, more particularly with reference to its nature. Owing to the frequent occurrence of inflammation, and the serious consequences with which it is often attended, it has from the earliest time demanded, and still demands, a great deal of attention; indeed, the greater part of medical and veterinary practice consists in the treatment of some form of inflammation, so that it is obviously of the utmost importance to have as clear ideas as possible with regard to its nature. Unfortunately, however, the subject is surrounded with many difficulties, and the vital powers of the animal body on which the phenomena of inflammation depend are so peculiar and complex.

their action, that up to comparatively recent date little was known of it as of satisfactory character. Previous to the employment of the microscope as a means of research, our knowledge of the inflammatory process was of the crudest kind; and even at this time, notwithstanding the labours of many observers, it cannot be said that the subject is by any means exhausted. Much, however, has been done in the present century to elucidate the subject, and we are now possessed of information which will enable us to follow with considerable degree of accuracy the complex phenomena which constitute inflammation. And here, at the outset, it may be observed that there is nothing peculiar in the inflammatory process apart from the ordinary operations going on in the body. Inflammation is a vital process in the same sense as the secretion of bile or of urine is a vital process. As we shall see further on, inflammation of a part is dependant on the operation, not of foreign and extraneous forces, but of the ordinary and innate vital powers. If, therefore, we knew the *modus operandi* of the vital powers in the ordinary or healthy functions of a part, we would also know the manner in which the vital forces act in inflammation. It is owing to this circumstance, viz., that the powers at work in a state of health are the same as those in a state of disease, that physiology and pathology are closely connected and mutually illustrative of each other. Indeed, properly speaking, there is no such thing as pathology; it should rather be called pathological physiology. The difference, therefore, between a morbid and a healthy process is one not of a kind, but of degree. There are some processes, however, called morbid, which considered in themselves are perfectly healthy, but are regarded as morbid, because they take place at an improper place.

As health and disease are merely modifications of the same state, and pass gradually into each other, it is impossible to draw a sharp boundary line between them; for this reason a strictly scientific definition of health or disease cannot be given. For practical purposes, however, a part may be said to be diseased when the processes going on in its interior endanger its structure or jeopardise the health of the whole organism.

In order to arrive at a knowledge of the phenomena of inflammation, it will be necessary to examine with the microscope the web of a frog's foot, both in its healthy condition when irritated in various ways. If you examine the web of a living frog under a microscope which magnifies 250 or 300 diameters, and bring one of the arteries into the focus of the instrument, you will observe the blood flowing along so rapidly that it is impossible to distinguish any of its constituents. If,

however, you follow the artery, it will be found to break up into numerous small vessels of uniform size, in which the current of the blood is instantly diminished to such a degree that you can readily see the constituents of that fluid. The combined calibre of the capillaries in which an artery terminates is considered greater than that of the artery itself, and consequently the rapidity of the current is immediately diminished in accordance with the well-known hydrostatic law, that the rapidity of the current diminishes in proportion to the width of the stream. Even in capillaries, however, the rapidity of the current stream is considerable. The corpuscles pass with great facility through the vessels, and do not exhibit any tendency to adhere to each other, or to the wall of the vessels. This is true both of the red and colourless corpuscles. It is usually stated that the colourless corpuscles move sluggishly along the *still layer*, as it is called, or the fluid portion of the blood, which is in contact with the walls of the capillaries. This is not the case, and, as already mentioned, the colourless corpuscles pass along as rapidly as the others. With regard to the terminal arteries, they are almost entirely composed of muscular fibres. These fibres belong to the plain or unstriated variety. They are arranged in one or more layers, according to the size of the artery, either circularly or in a spiral manner round the vessel. When they contract, therefore, they have the power to diminish the calibre of the vessel, or, if the contraction be strong enough, to occlude it completely. In this way the small arteries are able to regulate the supply of blood to a part. In addition to their contractile properties, arteries are also endowed with elasticity. Under ordinary circumstances, the arteries possess a certain medium size; but when, as sometimes happens, the restraining influence of the muscular fibre is removed, the vessels enlarge from the distending force of the blood, so that a much larger quantity than usual of blood finds its way into the part at the same time, owing to the unrestrained flow of blood. The capillaries beyond enlarge, and the velocity of the current is increased. When the muscular fibres again contract, the artery resumes its original size. The amount which passes through the artery, as well as its velocity, is diminished, and if the contraction proceed far enough, so as to occlude the vessel, the circulation through the artery will be stopped altogether. With regard to the capillaries of the numerous small vessels in which the arteries terminate, they are composed of a thin homogeneous membrane, in which nuclei of a flattened form are embedded at intervals. They are possessed of considerable elasticity; but, unlike the arteries, are completely destitute of contractility. Any alteration in size of the capillaries

which may take place is not due to any vital property possessed by these vessels, but is simply owing to the greater or less pressure exerted by the blood upon their walls. As already remarked, the blood flows rapidly through the vessels, much more rapidly through the arteries than through the capillaries, the blood corpuscles, both red and white, showing no tendency to adhere to each, or to the walls of the vessels. At the same time the current is equable and not pulsatory or jerking, as might have been expected from the rhythmical action of the heart.

If now the web be gently irritated, the artery immediately contracts at the point irritated, the calibre of the artery being either diminished or completely obliterated, and the circulation is either impeded or brought to a stand still. This condition, however, is soon followed by dilatation—excessive dilatation of the artery; and the blood rushes through in larger quantities, and with greater rapidity than usual; and in consequence of this unrestrained flow of blood through the artery, the capillaries beyond likewise become distended and gorged with blood. In this state the circulation through the vessels, both artery and capillaries, is more rapid than in the normal condition; but the blood corpuscles do not present any deviation from the healthy standard. But now the artery begins to contract and to resume its usual size, and when this takes place the circulation presents the same appearance as it did prior to the experiment. This experiment may be repeated several times in the same part with the same result. Here it is obvious that we have no inflammatory phenomena before us. The irritation has merely been sufficient to excite the artery to contraction, and this contraction was followed by complete relaxation or inactivity of the muscular constituents of the artery, in accordance with the general law in physiology, viz., that when a part has been called into vigorous exercise it loses after a time its functional activity, and does not regain it until a period has elapsed proportionate to the degree of its previous activity. If now the web be irritated more strongly, additional phenomena ensue, which we recognise as inflammatory. The arteries dilate immediately, or at most contract spasmodically for an instance and then dilate much beyond their usual size. The blood then rushes on in larger quantities and with greater speed, and gorges the capillaries, as described above. Soon, however, the circulation becomes slower and slower, until it becomes much more languid than the normal circulation. It then oscillates, and at last comes to a complete stand-still. Meanwhile the arteries, as well as the capillaries, are fully distended, and apparently offer no obstacle to the free passage of the blood. It is evident, therefore, that the vessels have no

special influence in causing the stoppage of the circulation in a part about to become the seat of inflammation. On examining the blood itself, we find that the corpuscles exhibit a remarkable tendency to adhere to each other, as well as the walls of the vessels. In the healthy state, as already remarked, the corpuscles have no tendency to adhere to each other or to the vessels, and there is therefore little doubt that the viscosity of the corpuscles in the inflamed part is the immediate cause of the stoppage of the circulation. While circulation is stagnant in the inflamed part more is constantly arriving, being propelled forward by the action of the heart, and, in consequence, the capillaries soon become enormously distended with blood corpuscles. Usually the capillaries are distended irregularly, so as to form pouches or sinusities, and sometimes owing to the greater pressure exerted upon them, they burst, and allow the blood to become extravasated into the tissue. While the varicose condition of the capillaries is the immediate cause of the stoppage of the circulation, it may be asked what is the cause of this condition of the corpuscles in the inflamed part? The corpuscles before they come to the inflamed part are quite normal; when they arrive there they become viscid, and when they leave it they resume their normal appearance. The cause of the viscosity, therefore, cannot be due to any primary alteration in the blood; if there were so the viscosity of the corpuscles would remain after they had left the part. Accordingly, we are forced to look elsewhere for the cause, and we shall probably find it in the textures themselves.

(To be continued.)

Miscellaneous.

The Welsh Pony.

The pure Welsh pony, to which the palm over other ponies has been yielded over and over again at the West of England Society's shows, has been celebrated from all time. To be the offspring of a Welsh mountain mare I hold to be as desirable a lineage as can befall a horse. A reliable authority probably of the gallant sort which Cæsar describes as tearing through the ranks of the scythed chariots of his British foe, passed terribly in the valley (as is so magnificently pictured the Arabian in the oldest book on horsemanship) snuffing the battle afar off, the thunder of the captains, and the shouting, so that it required all his personal influence besides his presence to induce his tried troops at length to recover from their consternation; the trained docility and sure-footedness of which astounded him, as

ere reined up, he tells us, at full stretch in the steepest and difficult places; a number of which were subsequently thought worthy of being transported to Rome with a view to the improvement of the Italian horse, and became a favorite breed with the aristocracy of the day; that their likeness very probably suggested the eye and mind of Virgil that graphic description of a noble animal that he has left us the Georgics. From this time forward, occasional mention is made of the excellence of British horses. The Saxons appear to have paid great attention to the horse, and to have been fully aware of the importance of improving the breed. The cognisance which waved on a Kentish royal banner was a white horse. Whatever character were the native breeds up to the Norman Conquest it is now impossible even to guess. That they were powerful and well fitted to the purposes of war, both by their nature and training, we have the testimony of our authors before mentioned, and of subsequent historians; but the first attempt on record to improve the native stock by the introduction of foreign blood, occurred during the reign of William the Conqueror, when Roger de Belesme, Earl of Shrewsbury, imported the elegant and noble Spanish horse, and bred from it on his estates in Powis land; and it is recorded that horses of that part of Wales were long celebrated for their swiftness—a quality which is doubtless derived from this happy mixture of blood."—(Yarrell.) At a subsequent period there is a tradition of some foreign horses swimming ashore from a wreck in the British Channel, and escaping clear to the hills. Of recent years great occasional efforts have been made by various landed proprietors in North and South Wales to improve the breed by turning occasionally an Arab; but the small farms on the mountain-side stand greatly in their way, and persist in neglecting material which in skilful hands might prove a very mine of wealth, which, even as it is, yields occasionally most valuable specimens. To see a herd in summer grazing beneath you in the hollow of the Black Mountains gathered by a spring—of all ages, fillings, foals, colts, two-year-olds, with the old mares white from age—and then to contemplate the ragged-jointed indescribable lord of the troop, it is a wonder that anything tolerable ever passes to the lowlands. It is about Christmas time, that, as a purchaser, you have a chance of selecting deliberately to suit your taste. Then when the Sibeh weather sets about those everlasting hills, by the

"Precipices huge
Smoothed up by snow"

is no longer any picking to be found, they end to the boundary of the common land, are admitted into strawyards, being all distinguished by their respective owners through white marks upon the ear or flank. Then is

there opportunity for a judge to pick many a valuable colt from amidst the bright-eyed bears (for they look like nothing else), as they crowd nervously into a corner on your approach, ready to spring over if it be not exceeding high, or cat-like scramble across in a moment. Some five-and-twenty years ago, the noble-hearted proprietor of Rug, in Denbighshire, Colonel Vaughan, lineal descendant of Prince Llewelyn, took great pride in the improvement of a tribe upon the neighbouring Berwyn range. The picture of his Apricot I have beside me as I write, 12½ hands in height—a a bright chesnut, with a beautiful small head, full eye, elegantly turned quarters, muscular thigh, arch neck, and a Blink Bonny shoulder; the victor of a hundred races at Ruthin, Mold, and on the historic flats of Harlech, against much taller horses than himself more than once. I am glad to know that there is a good sprinkling of his stock left yet in Merionetshire. How those whipper-in lads attached to the Rug fox-hounds would on their ponies overtop the highest wattled fence, creep in and out of the ugliest thicket, stream down the steepest hill-side without halt or blunder, then rein them at the bottom as cool as any travelled hunter, so calmly to trot off with a message for the master.—*Bever's Notes on Fields and Cattle.*

PERSEVERANCE—At the close of the last century, a poor, awkward, uncouth boy entered London; but he was so long, lank, and ungainly, that he seemed fit only to be the drudge of a printing-office—run errands, bring water, sweep the floor, and the like. Already had poverty and the hardness of the world made him sour, unhopeful, and despondent. Under less discouragements, many a youth has abandoned himself to a thriftless life, having no higher aim than to live but for the day; or, worse still, has plunged headlong into all the extravagances and indulgences connected with thriftlessness and crime. But the boy had vigorous health: this imparted to him a mental *vim* a moral power, which soon showed itself to his employer. He was prompt, persevering, and painstaking; and with these three qualities, in spite of the fact that he was good at nothing (in everything tolerably only), he made his patient way, step by step, to the "woolsack," (that is, the seat of the highest judge in England), and lastly died worth £200,000 among the most honoured men of his nation and age, Lord Chief Justice Campbell. In this case, vigorous health was a mine of wealth, a better fortune than if he had been the heir of many thousands. And certain is it, that the world would be a happier world, and the men in it would be happier, better, and greater, if one tithe of the time, and care, and study, which parents bestow on the accumulation of money to leave to their children, were devoted to the physical education and training necessary to secure

a vigorous constitution. Of any two young men starting on the race of life, one poor but healthy, and the other rich and effeminate, other things being equal, the chances for usefulness, honour, and a well-remembered name, are manifold in favour of the former. Every man of the least observation and reflection knows this to be an indisputable truth. Yet, in view of the fact that vigorous health is a better and safer fortune than stocks and bonds, how many in each hundred parents who read this article will lay it down and resolve: "I will do more to leave to my children a vigorous constitution?" Another element in the success of Lord Chief Justice Campbell was, that his employer, seeing his dull nature, but noticing at the same time that when he had anything to do he went at it promptly, and, with great painstaking, kept at it until the work was done, although painfully slow, he putted him on the shoulder, always spoke cheerfully to him, and, with considerate consistency, threw little jobs in the way, by which the heavy boy might earn a little money, and be stimulated to greater activities. How many a youth at school, how many an apprentice in the shop, how many a child in the family, has gone out in the night of a blighted life, who with humane encouragement, might have lived usefully and died famous, let the passionate teacher, master, and parent inquire, and do a little more patting on the shoulder!—*Hall's Journal of Health*—

THE TYRANT FLYCATCHER—This bird is one of the migratory visitors of the United States, and often bears the name of "King," as well as "Tyrant." According to Wilson, he does so from the extraordinary authority he assumes over all others during the time of breeding. So great is his affection for his mate, his young, and his nest, that, suspicious of every bird that approaches it, he violently attacks all intruders. In the month of May, June, and part of July, his life is one continued scene of broils and battles, in which, however, he generally comes off conqueror. Strange to tell, hawks and crows, the bald eagle, and the great black eagle, all equally dread an encounter with him, who, as soon as he perceives any one of them approaching, launches into the air, mounts to a considerable height above him, darts down on his back, and sometimes fixes himself there, to the great annoyance of the assailed, who, if no convenient retreat or resting-place be near, strives, by various evolutions, to free himself from his merciless adversary. But the king-bird is not easily disarmed. He teazzes the eagle incessantly, sweeps up on him from right to left, rises, that he may descend on his back with greater violence, all the while keeping up a shrill and rapid twittering, and continuing the attack, sometimes for more than an mile, till he is relieved by some other of his tribe equally eager for the fray.—*Cassell's Popular Natural History*.

ALL HAVE INFLUENCE.—No man stands alone in the world, but is influencing, for good or many of his fellow-creatures. "What can I do?" is an oft-repeated question, especially among those who fancy they are so low in social scale, or so poor in ability that their example can have no effect. "Billy Dawson," a well-known Wesleyan preacher, was once preaching on "Influence," and at the close of his course, a farmer said to him, "Your remarks are very good, Mr. Dawson, but they scarcely seem to apply to me. I have no more influence than a farthing rushlight." "A farthing rushlight!" said the preacher, "why, a farthing rushlight may set fire to a haystack, afford a poor woman the light to read a chapter in her Bible, or, placed in the window of a cottage on a solitary moor, may guide the weary, footsore, lost traveller to a place of rest and safety. And so it is with the moral world. A kind action, a word in season may effect a great change in the character of a man; and just as a small stone is capable of turning out of course the current of a stream; so the influence of the weakest of God's creatures may often effect the greatest of good. It should be remembered that because the man had but a talent, it was no excuse for him when it was covered that he had buried it in a napkin.—*Jonathan*.

FLORENCE NIGHTINGALE ON CRINOLINE.—I think, alarming, peculiarly at this time, that the female ink-bottles are perpetually impressing us "woman's particular worth and general missionariness," to see that the dress of woman is daily more and more unfitting them for "mission" or usefulness at all. It is equally unfitting for all poetic and all domestic purposes. A man is now a more handy and far less objectionable being in a sick room than a woman, compelled by her dress, every woman either shuffles or waddles; only a man can enter the floor of a sick room without shaking it. What is become of woman's light step—firm, light, quick step we have been asking? A nurse who rustles (I am speaking of a professional and unprofessional) is the horror of a patient, though perhaps he does not know why. The fidget of silk and crinoline, the rattling of keys, the creaking of stays and stays will do a patient more harm than all the rattles in the world will do him good. The noiseless step of woman, the noiseless dress of woman, are mere figures of speech in a day. Her skirts (and well if they do not beat down some piece of furniture) will at least be against every article in the room as she goes. Fortunate it is if her skirts do not catch and if the nurse does not give herself up as a sacrifice, together with her patient, to be burnt in her own petticoats. I wish the Registrar-General would tell us the exact number of deaths by burning occasioned by this absurd and

ness custom. I wish, too, that people who wear corset could see the indecency of their own dress as other people see it. A respectable elderly woman, stooping forward, invested in a corset, exposes quite as much of her own person to the patient lying in the room as any opera-dancer does on the stage. But no one will ever tell her this unpleasant truth.—*Notes on Nursing.*

HORRORS OF SWINE AMONG THE SCOTTISH PASSENGERS.—If that animal crossed their path on about to set out on a sea voyage they considered it so unlucky an omen that they would venture off. A clergyman of one of these fishing villages having mentioned this superstition to a clerical friend, and finding he was rather incredulous on the subject, in order to convince him, told him he would allow him an opportunity of testing the truth of it, allowing him to preach for him on the following day. It was arranged that his friend was to read the psalm relating to the herd of swine into which evil spirits were cast. Accordingly, when the first verse was read in which the unclean swine was mentioned, a slight commotion was observable among the Scottish audience, each of them putting his or her hand on any near object of iron—a nail on the seat or backboard, or the nails on their shoes. At the repetition of the words again and again, more commotion was visible, and the words “cauld air” (cold iron), the antidote to this baneful spell, were heard issuing from various corners of the church. And finally, on his coming over the water again, when the whole herd ran vigorously down the bank into the sea, the alarmed fishermen, irritated beyond bounds, rose, and left the church in bodies.—*Ramsay's Reminiscences.*

LOWERS AND FOLLAGE OF INDOOR PLANT CASES.—Miss Maling in her interesting little work on this subject, recently published in England, has prominently before us a modified form of the case for plants, which is called the Improved Plant Case, “the original idea of which is of course taken from the Wardian case,” to which the chief addition seems to be the provision of a simple plan for heating, so arranged that the plants may either be cool if they are of the kind to bear a low temperature; or “at 10 degrees’s notice the heat can be raised to any temperature up to 90 degrees.” When we think of the effect of cold on plants and flowers that during summer are placed in our open drawing-room stands, it is admitted that something more is wanted. “I have, till quite lately,” writes Miss Maling, “been interesting myself in these cases, and trying to work them up to something like the Wardian case, without much noting the time they lasted; still the lamentations of friends and the time after time this flower and that and another flower lasting with me, while

theirs meanwhile had gone through many a change—all this made it quite evident that two months were long for primroses, and five weeks for hyacinths; while for geraniums and gloxinias, fuchsias and begonias, I venture not to speak. I may say, most truly, that I know no other means of keeping flowers anything like so long as two months, either in a drawing-room with its dry air, or in a green-house with its passing currents, and certainly not in a garden bed in the finest season. Yet, after all, the secret is a very simple one. It is merely the stillness around them which preserves the flowers so very long unchanged; while the peculiar arrangement by which the heat is supplied provides that soft, dewy atmosphere in which so many of the prettiest plants delight.”

UNLUCKY PEOPLE.—It is a part of the great fact of luck—the indubitable fact that there are men, women, ships, horses, railway engines, whole railways, which are unlucky. I do not believe in the common theory of luck, but no thoughtful or observant man can deny the fact of it. And in no fashion does it appear more certainly than in this, that in the case of some men cross-accidents are always marvelling them and the effect they would vainly produce. The system of things is against them.

They are not in every case unsuccessful, but whatever success they attain is gained by brave fighting against wind and tide.

At College they carried off many honors, but no such luck ever befel them as that some wealthy person should offer, during their days, some special medal for essay or examination, which they would have gained as of course. There was no extra harvest for them to reap; they could do no more than win all that was to be won. They go to the bar, and they gradually make their way; but the day never comes on which their leader is suddenly taken ill, and they have the opportunity of earning a brilliant reputation by conducting, in his absence, a case in which they are thoroughly prepared. They go into the church and earn a fair character as preachers; but the living they would like never becomes vacant, and when they are appointed to preach on some important occasion, it happens that the ground is a foot deep with snow.—*Frazer's Magazine.*

AMMONIA IN RAIN.—Any one may satisfy himself of the presence of ammonia in rain, by simply adding a little sulphuric or muriatic acid to a quantity of rain water, and by evaporating this nearly to dryness in a clean porcelain basin. The ammonia remains in the residue, in combination with the acid employed, and may be detected either by the addition of a little chloride of platinum, or more simply by a little powdered lime, which separates the ammonia, and thus renders sensible its peculiar pungent smell. The sensation perceived on moistening

the hand with rain water, so different from that produced by pure distilled water, and to which the term "softness" is vulgarly applied, is also due to the carbonate of ammonia contained in the former—*Liebig's Organic Chemistry*.

REMEDY FOR COLD FEET.—It is impossible to have vigorous health if the feet are habitually cold; no amount of external covering can keep them warm. Wearing pepper and other irritants in the stockings, is generally inefficient, is always hurtful in its tendencies, and never accomplishes a permanent radical good. One of the most uniformly efficient means of keeping the feet warm is to wash them in water at least as cold as the atmosphere of the room, night and morning; let it be done within a minute in very cold weather, then wipe and rub them rapidly and thoroughly with a very coarse towel, dress, and when practicable, take a walk or else dry them by the fire, rubbing them well with the hands.

In addition, let half an inch of curled hair be basted to a piece of cloth and slipped in the stocking, the hair touching the soles of the feet to titillate the skin, and thus aid in drawing the blood thither to warm them. The hair conducts the moisture from the feet to the woolen cloth and thus keeps them dry. These hair-soles should be placed before the fire at night, so as to be thoroughly dried by the morning. Cork-soles absorb moisture from the shoe and the feet also, and require several days to be thoroughly dried. India-rubbers confine the dampness about the feet, hence they should be promptly removed as the wearer ceases walking nor should they be used except in muddy, slushy weather.—*Hulls' Journal of Health*.

HOW THE BIBLE WAS TRANSLATED:—We are indebted to King James for the excellent translation of the Bible now in use. This version was undertaken by him in performance of a promise made by the King at Hampton Court conference; and Dr. Reynolds, the great champion of the Puritans, by whom it was there suggested, was one of the divines engaged in its execution. Forty-seven of the best biblical scholars undertook the great labour of love, who divided themselves into six classes, each undertaking a portion of the Scriptures. Each member of a class translated the whole of the portion set apart to this class, then the class met, and revised as a body their separate versions. One general version was next agreed upon by the class, which was subsequently revised by each of the other classes. Two of the classes sat at Cambridge, two at Oxford, and two at Westminster. Three years were spent in the undertaking; viz., from 1607 to 1611. The new version was dedicated to the king, and printed by Robert Barker in the year of its completion. The excellence of the translation is universally acknowledged; and though in consequence of the changes which our forms of speech have

since undergone many expressions in it may no longer appear unrefined or homely, its general effect is far more impressive than that of a more polished translation. Up to the time of King James all Bibles were printed in German character, and black letter, but, after that date, the Roman letters (as now employed) were adopted, and soon superseded the old-fashioned manner of printing. The appearance of King James' Bible formed almost on the most important event in the history of the English language; it had the immediate effect of recommending to common use a very considerable number of words derived from the learned languages, for which the translators had been unable to find equivalents in the current English of the time. It at present performs a service of an opposite nature, and keeps in use, at least in remembrance, many valuable words and expressive idioms which would otherwise have been rejected and disdained by the fastidiousness of modern taste as homely and familiar.—*Englishwoman's Domestic Magazine*.

SMOKE-HOUSES—HOW SHOULD THEY BE BUILT?—A smoke-house should be square, its diameter varying from four to eight feet in diameter, according to the quantity of meat required to be smoked; the lower portion to the height of four feet should be of brick, with a door lined with sheet iron. This part may serve both as an ash-house and as the proper place for the fire to furnish the smoke. Fire should be placed in the middle and covered with the material to be burned, so that the mass being surrounded with ashes, may maintain the ignition for a long time, giving off the smoke with regularity. The upper part may be wood, and the separated from the lower part by joists, covered with scantling, so as to leave spaces averaging four inches in diameter for the ascent of the smoke. The height of this upper portion may be six feet, beside the ascent of the roof, and should be furnished with a door that may be locked, that the door of the lower portion will not be obliged to ingress to the meat-room. This separation between the two portions will catch any pieces of meat that may accidentally fall, while the lower portion need not be locked, so as to enable the frequent removal of ashes from the house, the proper attention to the fire to be readily performed. Saw-dust placed over ignited coals will furnish the necessary means for smoking the meat. The saw-dust should be from such wood as is most free from resinous matter. The pyroligneous acid separated is of a better flavour from hard woods, while the amount of acetic acid, which is the preservative property, is the same.—*Working Farmer*.

DIFFERENT MODES OF WALKING.—We have little difficulty in recognizing three chief kinds among pedestrians. First, there are those

with a pompous strut, or a mincing gait, or some style or other. We are naturally little inclined in favour of such persons; indeed, we have usually to make an effort not to be decidedly prejudiced against them. Secondly, there are those who pay too little attention to their movements, who do not seem to be sufficiently alive to the responsibility attaching to the possessors of so noble a structure as the human frame, and who do not give themselves the trouble to exert the powers of the various mechanism with which they are charged. They slouch, or dawdle along in a listless manner. Instinct tells us rightly to beware of such persons with the conduct of affairs, or with any office of responsibility. We feel that the lack of energy manifested in the guidance of their limbs is, too probably, a sure sign of character which unfits them for the duties of life; and we know that such persons are not usually successful in their calling. Thirdly, there are those who show, by the want of precision of their step, and by the irregularity in the succession of their movements, that the step is made, that they are conscious of the dignity of their species, of the responsibility attendant on that dignity, and of the respect due to themselves. Such men, we are likely to pursue their avocations energetically, and methodically, as well as with punctuality. Many points of character peep out in the way men walk. Our poet tells us that in

“rascals in the motions of his back,
and scoundrels in the supple sliding knee.”

There is a halting, shuffling, undecided gait; a third walks in a bold, determined, straightforward, erect and independent manner. There is a cautious, parisonous step, as if of shoe leather, or afraid to trust the ground; he has, however, probably trusted the ground with considerable investments. Some walk with long pretentious strides; others make quick, insignificant steps. Some, again, are hurried, fussy, noisy; while others glide in a quiet, shrinking, unpretending—it is a timid manner.—*The Human Foot.*

SOUTHERN PLANTER'S HOME.—It is quite a suburb, near the second Bayou; a great less road, ankle deep in white dust, lies along it, fringed by those loathsome open drains, the curse of New Orleans and the chief sources of the yellow fever. In this road the children roll and scramble, and pigs rout about. Before Mr. Quackenboss's house is a row of huge magnolia trees, at this covered with tufts of pink and scarlet flowers which contract beautifully with the small bright green leaves. My hospitable friend opened a wicket gate, and we pass up a walk and enter the cool verandah'd house. Mrs. Quackenboss and the little Quackens are on a visit to Cuba, so we are alone.

My friend claps his hands and a negro boy appears, receives an order, and returns in a few minutes with two bottles of German wine, a bowl of sparkling ice, a box of cigars, and some tumblers. My friend gave a sigh of satisfaction, took up with an air of reflection a feather fan of Mrs. B's that lay on the table, spat three times at a special knot on the floor, and throwing his feet over the back of a very high chair, began to open the conversation on the subject of the cotton supplies of England,—*Dickens's "All the Year Round"*

EXISTENCE.—It is an unquestionable fact that those who are equally acquainted with, and equally capable of appreciating and enjoying both, do give a most marked preference to the manner of existence which employs their higher faculties. Few human creatures would consent to be changed into any other animals for a promise of the fullest allowance of a beast's pleasures; no intelligent human being would consent to be a fool, no instructed person would be an ignoramus, no person of feeling and conscience would be selfish and base, even though they should be persuaded that the fool, the dunce, or the rascal is better satisfied with his lot than they are with theirs. They would not resign what they possess more than he for the most complete satisfaction of all the desires which they have in common with him. If they ever fancy they would, it is only in cases of unhappiness so extreme, that to escape from it they would exchange their lot or almost any other, however desirable in their own eyes. A being of higher faculties requires more to make him happy, is capable of more acute suffering, and certainly accessible to it at more points than one of an inferior type; but in spite of these liabilities, he can never really wish to sink into what he feels to be a lower grade of existence.—*"Utilitarianism" in Frazer's Magazine.*

THE PUBLIC HEALTH.—INFLUENCE OF THE SEASONS ON THE HUMAN SYSTEM.—Dr. Edward Smith, F. R. S., delivered, at the meeting of the British Association at Manchester, a lecture upon this subject. The observations he made were to show the variation of the vital action in the human system, and his two principal inquiries referred, the one to the respiratory functions, and the other to the elimination of nitrogen. In reference to respiration, the amount of carbonic acid evolved varied from day to day, with the cycle of the seasons. He had found that there was a definite variation in the amount of vital action proceeding within the body at the different periods of the year, and this showed a well marked course. Thus, at the beginning of June a fall commenced, and this continued and progressively increased through June, July and August, until the commencement of September, when the lowest point was attained. After this period, in October an upward tendency was manifested, and it continued

through October, November, and December, until January, when a point was attained from which there was little variation in January, and March. In April and May the amount of carbonic acid evolved was yet further increased until the point was reached whence he started. The extreme amount of change observed was a loss of three grains of carbonic acid gas per hour from the commencement of June to Sept.; and the extreme quantities recorded were in May 10.26 grains, and at the lowest period between six and seven grains. The rate of respiration, the quantity of air inspired, and the quantity of carbonic acid exhaled, followed the rule he had explained. It had been proved by several series of experiments that the rate of pulsation was increased by heat—the rapidity of pulsation was the converse of the rate of respiration. With reference to the evolution of nitrogen the conditions were the opposite of those of the elimination of carbonic acid. The general results he had arrived at were, that there was a greater amount of fluid evolved in the summer months than in the winter. The carbonic acid evolved decreased with the increase of temperature. On a sudden increase of temperature there was a large decrease of vital action, and on a fall of temperature there was an increase of vital action. The greatest growth of animals would occur at the period of the year when there was the largest amount of vital action; and in this respect they had connected the animal with the vegetable kingdom. He believed that this was the fact with regard to the growth of children—that they grew at a greater rate in spring than in winter. From facilities which the Registrar-General had afforded him, he had ascertained that a much larger number of those children born at the latter part of summer died within a year of birth than took place amongst those born at other periods of the year. The children born in the winter and spring period were less subject to disease, and in a probability, had stronger constitutions than those born in the summer season. These variations in the increase and decrease of the vital power of the system seemed to him to be the origin of diseases, especially those that were chronic. All epidemics, to a large extent, in whatever part of the world they occurred, took place at the period when the human system was decreasing in vital action. This rule applied to cholera especially, which generally attained its greatest height in June, in October diminished, and in November disappeared."

ADULTERATION OF ARTICLES LIABLE TO DUTY.

—The report of Mr. Phillips, the head of the laboratory department of the Inland Revenue, has just been published for the year ending the 31st of March. He states that the analyses made during the 12 months amounted to nearly 11,000, and that the officers have become so efficient that although some of these analyses had

to be sustained in courts of justice, not a single instance has occurred of any one of them having been shown to be wrong. The articles of which Mr. Phillips specially reports are tobacco, snuff, pepper, coffee, beer and hops, and malt. With regard to tobacco, it is stated, that although it would be absurd to suppose that the smuggling and adulteration of an article subject to a duty of about 700 per cent. upon its cost can be entirely prevented, there is reason to believe that frauds are rare, and that the revenue from this article is comparatively well secured. An inspection of most of the tobacco manufactories in Ireland, and of many of those in England, during the year, has taken place with the discovery of a single practice that could be deemed illicit. Of five adulterated samples purchased, it is to be presumed, of retail dealers, the illicit materials consisting of burdock, clover, and cabbage leaves, sugar, common salt, and oil. Of snuff it is stated that owing to great diminution which has taken place during the last four or five years in the adulteration of this article, it has been found necessary to examine only ten samples. Of these, three, which all came from Ireland, proved to have been sophisticated with peat-moss and ground Pineapple Pepper, it is believed, is still extensively sold, that the prevalence of the fraud is mainly due to the adulterated state, and Mr. Phillips considers the practices of some wholesale dealers and grinders of the commodity. "The skillful, almost scientific manner in which the pepper was so adulterated," he says, "and the means which is taken to render detection difficult, conviction doubtful, are alone sufficient to prevent the source, as it is always easy on analysis to distinguish between the highly-finished article of the wholesale delinquent, and the cheap production of the unscrupulous retailer." The illicit materials detected in the samples examined during the past year were rice, husks of, and white mustard, sago starch, and the husks of cereals. Coffee also continues to be extensively adulterated, and it is to this that the decrease of the consumption not having increased during the last 14 years, in face of a reduction of duty is supposed to be attributable. Chicory is a material almost universally employed, and in the past 12 months numerous samples which had been purchased as pure coffee have been analysed in the laboratory, and found to contain from 30 to 86 per cent. of chicory. From Glasgow and some other towns in Scotland samples which were bought at the rate of 1s. per lb. having been found to contain from 70 per cent., and in one instance 84 per cent. chicory. In samples sold at 1s. 4d. above as mixtures of coffee and chicory, there is, it is said, no limit to the proportion of the adulterant, and instances occur in localities chiefly inhabited by the very poor, where the adulterant prove to be composed of it entirely. (L)

any thousand analyses, it has been found that on an average, more than 29 per cent. of samples held as pure coffee were adulterated with chicory, while of those sold as "mixtures of coffee and chicory," the proportion of chicory was more than 39 per cent. This is greater than in previous years, and Mr. Phillips remarks that it at once gives the clue to the causes which are operation in keeping down the importation of coffee."

SUNSET IN THE NORTH-WEST HIGHLANDS.—Among the many contrasts which geology delights to conjure up to the imagination, few are more striking than that which comes before us in the wilds of Stye, or the glens of Mull. Sit in the light of an autumn evening, as we were often done, and mark the sinking beams as they strike along the sides of those truncated rounded hills, revealing terrace over terrace in alternate bars of dark crag and green slope—forests that are but faintly seen in the glare of the day; to cast the eye to the right hand and the left over the wild heathy uplands that stretch around in utter solitude and stillness, to watch how hill-top after hill-top loses its gleam of sunset, and how the chill shadows creep upward from dark and lonely glens, when, as the sun dips under the Atlantic, all the landscape around is suffused with a grey hue, and the night begins to descend, to think how these hills arose, and in what distant era; how they were heaved out as rising rocks from subterranean abysses, and led over river and sea; how sheet after sheet piled upon submerged estuaries, with their banks and fringing forests; how, again, on cooled and hardened lava, as it sank beneath waters, animal life flourished as abundantly before, and new forests sprang up as luxuriant as those which had preceded them; to reflect how different were the forms both of animal and vegetable life from those which characterize the world now; and then letting our imagination descend down the long cycle of ages and mutations, to succeed to those of the oolite, to find ourselves once more among the heathy hills of our Hebrides, as the dark night-dews begin to fall—this is a train of reverie which, in itself, is to some minds as natural as it is pleasant, and useful, for it gives life to the dead by linking it in with the living present; expands our appreciation of the existing world, by showing us how the features of that world have arisen; and by thus uniting us with the past and present, with the immeasurably ancient and the comparatively new, it enlarges our views of nature, and makes us feel in a novel, but not in an impressive manner, that there is a unity of nature—a sympathy which, in a way we cannot express, binds all things to each other, and to which we are at once their author and their end.

British Review.

Farming in Devonshire.

[From Maxwell's *Sighs, Smiles, and Sketches.*]

A. D. 1861.

Come, wife, 'tis time for we to rise,
The clock is striking five :
Be quick and get the tatees fried ;
Now do, lass, look alive.
I've got to put my barley in.
And now the first of May's come ;
I don't know how us shall get on,
If many rainy days come,
I've got to cart out all my dung
And lime to till the tatees ;

The land's as wet as wet can be.
How bothered my poor pate is !
There's Brisk and Boxer cruel galled,
And Tidy Mare is gripy ;
And oats are down, and wh at's a'valled,
And Roger's always swipy ;
And all the sheep have got the scab,
And wool's a going down ;
And I've to draw my produce in,
Vul vourteen miles to town.

And Lady-day's a'come and gone,
And I've not paid my reat yet ;
And Bill, and Jan, and little Joe
Ha' ne'er to school been sent yet.
Us can't get on if times don't mend—
'Tis raly quite alarming :
I only wish my lease was out,
I'm zure I'd give up farming.

A. D. 1900.

Matilda ! order chocolate ;
It's nearly ten o'clock ;
And getting up at half-past eight
Is really quite a shock.
I worked so hard till nine last night,
To prove that last analysis,
That, should my brain be further tried,
I really fear paralysis.

Well, I'll just take a quiet ride ;
James, bring my locomotive—
That half-horse power, with trotting springs
Of health 'twill be promotive.
And, James, do fetch a gallon of
Concentrated Thames water ;
I'll just top-dress my cucumbers—
Five acres and a quarter.

Well, here I'm back ; I've been all round :
The farm is looking splendid
What fools they were, some years ago,
To work as hard as men did !
I've heard my grandsire say, his dad
Met with some dreadful losses :
No wonder, when they used to work
With those great horrid hosses.

And, James, just touch the telegraph,
 And bid my engineer
 Turn out six dozen ploughs next week,
 To get the breaches clear;
 And tell professor Faraday,
 And my sub-chemist, Jones,
 To forward, by next Monday's post,
 Their last extract of bones.

'Tis time I got my turnips in;
 I should not like to mess it;
 And as I've only one square mile,
 There'll be enough to dress it,
 And, James, do turn the battery on,
 The wheat is just in flower,
 And give it one galvanic shock;
 It wants a gentle shower.

And syringe all the cabbage plants
 With essence of guano;
 And ask Miss Jane to milk the cows
 With the new "vaccine piano."
 And, James, fetch down my last balloon,
 With speed-retarding crupper,
 I'm going to Barnet fair to-day,
 And shan't be back till supper.

An Interesting Sheep Experiment.

In Scotland as well as England it is well known there is great attention paid to sheep-breeding, both for the wool and flesh; indeed, there is no country in the world where success has been so great and gratifying. Our best breeds of sheep are obtained there; but we have found that the mixed breeds do better with us in the long run than the pure imported stock. The following experiments, undertaken by the Parlington Tenant's Club of Scotland, as we find it reported in the *Scottish Farmer*, to prove the fattening qualities of certain breeds, will be read with interest. A stone is 14 lbs.)

There was eight different kinds of sheep, and each lot were turned into a two-acre plot of a 16 acre field, each plot being of equal grazing value. The lot consist of—1st, ten crosses from the Teeswater with the Leicester; 2nd, twelve crosses from the Cheviot with the Leicester; 3d, ten Lincolns; 4th, ten South-Downs; 5th, ten Shropshire Downs; 6th, twelve Leicesters; 7th, ten Cotswolds; and 8th, seven odd sheep, one from each of the above classes—all hogs. The fairness of the above trial would thus appear to be somewhat vitiated by the difference in the numbers. The cross Cheviots and the Leicesters would have a sixth less grass than five of the other is, and five-twelfths less than the odd sheep.

The lots were all turned into grass on the 23d of May. A fortnight after this they weighed. The weight of the Teeswater crosses were 106 stones 3 lbs.; of the Cheviot crosses, 124 stone 13 lbs.; of the Lincolns, 125 stone 9 lbs.;

of the South-downs, 95 stone 10 lbs.; Shropshire-Downs, 101 stone 6 lbs.; odd sheep, stone 7 lbs.; Leicesters, 116 stone 3 lbs.; and Cotswolds, 90 stone 9 lbs. Between this date and the fourth of October the Sheep were weighed four times. After four months' grazing, supplemented by 3 lbs. of linseed cake per day, from 17th June to 1st August, and then forward with 6 lbs. per day of the same material it was found that the Teeswater crosses had added 18 stone 1 lb., or nearly one-sixth to the original weight; that the Cheviot crosses had added 18 stone 9 lbs., or little more than one-seventh; the Lincolns 6 stone 7 lbs.; or about one-twentieth; the South-Downs, 13 stone 2 lb. or less than one-seventh; the Shropshire-Downs, 20 stone 8 lbs., or about one-fifth; the odd sheep, 11 stone 10 lbs.; or almost one-sixth; the Leicesters, 24 stone 7 lb., or nearly one-fourth; and the Cotswolds, 19 stone 6 lbs., or more than one fifth of the original weight. The advantage is thus in favor of the Leicesters and Cotswolds. The Cheviot crosses, however, do not seem to have had enough of grass, having decreased instead of gaining in weight during the last month.

One sheep of each kind was tried on grass without any artificial food. Under these conditions, the Cheviot and Leicester cross greatly surpassed all the rest, making three stones four months.

The grass eaten is, of course, an item of profit comes to be calculated, and the Cheviot crosses appear to be the greatest consumer. Next to them the Lincolns and Shropshire Downs bared their pasture most, and after that the pure Leicesters and Cotswolds. The fact that the sheep were not all in the same condition when procured, must also affect the experiment to some extent, but it is to be commended as a step in the right direction.

REMEDY FOR SLEEPINESS IN CHURCH.—The art of balancing has become quite popular, and has been deemed worthy of explanation in form of a lecture by the scientific Mr. Peppercorn, who is smart and learned at the same time. We must extract one of the little jokes which he peppered his lecture and made the most acceptable fare: he said the old seats in Westminster Abbey, in Henry VIII's Chapel, were placed on an axis which passed through the centre. As long as they remained awake nothing happened, but directly they began to sleep the seat upset and they were thrown out. This unclerical merriment was alluded to at the church at Bishop's Stortford where the seats were similarly constructed. The idea is worthy of introduction into some of our modern "sensation" churches.—*Court J.*

ANTLERS OF THE STAG.—There is no occasion, as regards size, to be made between antlers of the present and of former centuries; greatly inferior are those which we find

use which have been; and it is quite natural should be so. Not only did the deer formerly reach a greater age, but they had better and more abundant pasturage than now, when the woods are cut down, and the land is highly cultivated. A abundance of nutritious food produces generally a surplus of large growth.—*For- of Creatures*

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of these Books can be sent by Post to any part of Canada, upon remitting the price at the rate of 20 cents on the Dollar for

to Feb. 28, 1862.

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BOARD OF AGRICULTURE.

THE Office of the Board of Agriculture has been removed to 188 King Street West, a few doors from the late location adjoining the Government House. Agriculturists and any others who may be so disposed are invited to call and examine the Library, &c., when convenient.
HUGH C. THOMSON,
Toronto, 1861. Secretary.

Notice of Co-Partnership.

THE Undersigned have entered into Partnership as Seedsmen and dealers in all kinds of Agricultural and Horticultural Implements, under the firm of James Fleming & Co.

JAMES FLEMING,
GEORGE W. BUCKLAND.

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JAMES FLEMING & CO., Seedsmen to the Agricultural Association of Upper Canada will carry on the above business, wholesale and Retail, at 126 Yonge-st., 4 doors North of Adelaide-street, until next July, when they will remove to the new Agricultural Hall, at the corner of Queen and Yonge-streets.

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Toronto, January 1st, 1861.

FOR SALE.

AT

WOODHILL, WATERDOWN P. O.

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N. B.—First come, first served.

Waterdown, Nov. 14, 1861. 4-t.

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January 1, 1862.

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ANDREW SMITH, Licentiate of the Edinburgh Veterinary College, and by appointment, Veterinary Surgeon to the Board of Agriculture of Upper Canada, respectfully announces that he has obtained those stables and part of the premises heretofore occupied by John Worthington, Esq., situated corner of Bay and Temperance streets, and which are being fitted up as a *Veterinary Infirmary*.

Medicines for Horses and Cattle always on hand. Horses examined as to soundness, &c.

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Toronto, January 22nd, 1862.

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JOHN SPENCER,
Brooklin, Post Office,
Ontario County C. W.

Oct. 12th, 1861.

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JAMES COWAN.

Clochmhor, Galt P. O., Oct. 19, 1861.

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