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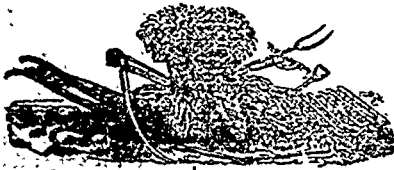
CULTIVATOR.

"AGRICULTURE NOT ONLY GIVES RICHES TO A NATION, BUT THE ONLY RICHES SHE CAN CALL HER OWN."—Dr. Johnson.

VOL. III.

TORONTO, APRIL, 1844.

NO. 4.



THE CULTIVATOR.

"Agriculture is the great art which every government ought to protect, every proprietor of lands to practice, and every inquirer into nature improve."—Dr. Johnson.

TORONTO, APRIL, 1844.

MONTHLY CALENDAR.

This month has ever been hailed as that in which Nature is re-animated. Whilst we are penning this article, we see, in our mind's eye, the provincial cultivator making every necessary preparation for the due performance of the various branches of his exalted and honourable profession, which are requisite to be carried into operation, at this important season of the year.

In this, as in all new countries, the agricultural population stand much in need of sound practical instruction. Whether the editor of this journal is competent to perform this important task, is a question for the reader to decide,—the sequel will, at all events, be known when the advice or recommendations have been honestly followed.

Much attention should be paid to the selection of good seed—every variety when practical should be pure, and quite free from all noxious seeds. If there be any mixture of seeds with the different varieties of grain which is intended to be sown, too much labour cannot easily be given in extracting every impurity. It should be remembered, that there is as much difference in the varieties of the

same species of grain as there is in the same species of fruit. This is a subject of great importance to the farmer. By selecting good varieties of grain, and making the ground in proper order, and sowing in season, in almost every instance, the cultivator will be liberally rewarded for his toil.

In purchasing new varieties of grain, roots, &c., those which are brought from northern to southern latitudes, are more likely to come to perfect maturity than those which are brought from a southern to a northern latitude. All seeds should be changed every few years from light lands to heavy ones, and *vice versa*, and only the richest and plumpest should be sown; and in this way great improvements have been made, and no doubt still greater will be effected, through the same means.

No operation on the farm is so essentially necessary to be executed with taste, and in a perfect manner as ploughing,—a good implement, a strong steady team, and a mechanical eye, are all requisites for the due performance of this branch of business. Nothing looks better in agriculture, than to see straight, deep, and well-proportioned furrows laid into ridges, resting one on another in an angle of inclination of about 45 degrees. The depth of the furrow, and the width of the ridges, will altogether depend upon the qualities of the soil and its situation,—on sandy soils, caution should be observed, as it is possible to plough so deep that the soil will become almost like a filtering apparatus; and on such soils the ridges may be made to a great width, and the furrows entirely tilled without any manifest injury to the crops. On mossy clays a contrary practice will be found to be very beneficial. In all cases where clay soils are very tenacious, the ridges must not only be made narrow, but the furrows must be cleaned out between the ridges, to the full depth to which the

and was ploughed. As much as we have recommended excessively deep ploughing for autumn ploughing; and for crossing fallow grounds for wheat, we would recommend our friends to be cautious and not to go too deep in their spring work,—the full depth of the natural or made soil, is a proper criterion for ploughing at this season.

If the soil be well tilled, and the seed be of the very best quality, and sown in proper season, still it does not follow that a farmer has any right to expect a full crop, less he sows a liberal quantity of seed upon the ground. Some varieties of the same species of grain require more seed per acre than others; but on all rich deep soils, the quantity necessary to ensure an early full crop, will be, in spring wheat, 2 bushels; in barley, 2½ from that to 3 bushels; in short haulm peas, 3 bushels; and in most varieties of oats, 3 bushels per acre. A very celebrated wheat grower used to remark, that he always made it a point to sow his seed so thick on the ground, that on an average, each plant would only produce three stools or straws. Those who are not decided on these points would do well to further experiment, both as to variety and the amount of seed necessary to be sown, to secure, in the common sense of the term, a full crop.

Look to your wheat fields; if there are any spots where the plants appear too thin, these spots should be ploughed and sown with spring wheat, as soon as the ground be dry enough to prevent the horses from poaching.

Let none suppose for a moment, that an average good crop of grain can be produced unless a sufficient amount of plants be on the ground,—this argument will especially apply to fall sown wheat. If the plants be far asunder, and the soil rich with vegetable matter, an average crop of straw might be produced, but the time required for the production of the numerous stools or stalks which spring forth, is so considerable that in nine cases out of ten the crop is blighted, and would scarcely pay for harvesting.—We would desire our friends whose crops of fall wheat appear unprosperous, to plough them up at once and sow an approved variety of spring wheat upon the ground, at the rate of two bushels per acre.

HOME DISTRICT AGRICULTURAL SOCIETY.

Through the want of an official report, we have neglected up to this period to give the particulars of what transpired at the annual meeting of the Home District Agricultural Society, which took place at the Court House on the 14th day of February last. The scheme for re-organizing Agricultural Societies, as contained in the *Cultivator* of December last, was read by the Chairman, Edward Thompson, Esq., and was so far approved of as the organization of Branch Societies in the Townships is concerned; but that clause which has reference to the organization of a Provincial Society was very properly postponed for further consideration.

A considerable discussion arose relative to the manner and amount of assistance that should be given to the Branch Societies; and the only feasible plan that was suggested, was that of giving a liberal amount to the Township Societies respectively, in proportion to the amount that each have in fund on the 15th day of May next, and that the members of the Township Societies shall have all the advantages that the District Society's exhibitions may afford. This suggestion was highly approved of, and accordingly adopted. It was also resolved that the Presidents of the Township Societies should be *ex officio* Directors to the District Society, and that the District Society should elect another Director from its members in each Township where a Branch Society is established; which was also agreed should be carried into effect to an extent as far as the infant state of the movement would allow.

The officers for the present year consist of—

President—W. B. Jarvis, Esq.

Vice Presidents—Wm. E. Thompson, Esq., and Captain Harris.

Secretary—George D. Wel's, Esq.

Treasurer—Wm. Atkinson,

Directors—Franklin Jackes, Esq., York; John Torrance, Scarborough; Dr Allison, Markham; J Scarlett, Esq., York; James Brown, Esq., Vaughan; Wm. Thompson, Esq., Toronto; Asa Baker, E. obicoke; John Cade, Whitby; David Smith, Toronto; Abram Furwell, Esq., Whitby; Peter P. Pearson, Whitchurch, and George Miller, Markham.

The noble stand which the officers of the Home District Agricultural Society have taken in the business of organizing Branch Societies will tend, in a very powerful manner, to cause the farmers in the townships to exert their influence in sustaining the character of the district exhibitions. The prospects of the District Society were never so favourable as at present. We have heard several farmers, who have never troubled themselves with these matters before, say that, if the scheme be adopted of having a general annual exhibition, on the grand scale contemplated by the projectors of the plan, they would become members of the District Society, and pay their ten shillings annual subscription ungrudgingly. Although the whole matter may almost be considered as yet in embryo, still so great an interest was never evinced before in Canada in regard to the success of an agricultural movement.

We confidently expect that the next autumn's show will be by far the largest and most splendid of the kind that ever took place in British America.

PROSPECTS OF THE WHEAT CROP, &c

It may be safely said that the wheat plants never looked better at this season of the year than they do at present. An unusual breadth of ground was sown with wheat last autumn, and a great proportion of the fallows were in a proper state of culture for the crops. But few summers, within our recollection, were more propitious than the past for the preparation of land for wheat—the plants also had time to get a healthy growth during autumn, and the past winter has been neither too cold nor too warm for the plants; so, on the whole, the husbandman should rejoice at his prospects, and take courage. There never was a period in the history of our country when such strong inducements for emulation were held forth for effecting improvements in the Agricultural and Mechanical branches, as at present; nor do we recollect of ever seeing such a determination displayed on the part of the producing classes, of purchasing less and producing more, than is evinced at present in every part of the country that we have lately visited. A degree of caution is now observed in almost every section of the country, in the purchase of even the common necessaries of life; very different from what has heretofore characterized our countrymen. They find it to be an uncertain business to purchase more than for which they are able to pay. Virtually, mortgaging their crops before they are sown. It is an undeniable fact, that there never was a period, since the first settlement of this country, in which so much industry, caution, and general knowledge of causes and effects were displayed in the various branches of business as at present. The opinion is now pretty general, that in order that the country should flourish and every branch of trade have a healthy appearance, that the exports of the country must be increased, and the imports lessened by every possible means, until the period arrives when the balance of trade will be in favour of the Colony. The moment that this point is gained, an entire revolution in our monetary condition will be effected. The real and fictitious capital of the country will then be employed in developing its resources; and instead of the farmer who may be unable to borrow one hundred pounds upon the security of freehold property to the value of five hundred, as now is the case, he will then be enabled to borrow upon the most easy terms. Without professing to have a knowledge of future events, we venture the opinion, that within three years the exports of this country will be equal to its imports. The producing powers of the country have only yet been partially tested. There are very many articles which might be grown, with great profits, to a considerable extent, that are now unknown in the country. And besides, our great staple, the wheat crop, may be quadrupled within a very short space of time, providing the proper methods be adopted in its culture. As a proof of the advance which Agriculture is making in Canada, we would mention that double the usual number of acres of fall wheat will be harvested this year; and, if the harvest be at all favorable, that the produce in spring wheat alone will be sufficient for a supply of bread stuffs for a twelve month.

Manufactures were never carried on with more spirit and certainty of profits than at present, and mercantile and general commercial operations have a very sound and healthy appearance. Our cities, towns, and villages are rapidly improving in appearance; and the growth and improvements of the towns can scarcely be said to equal the improvements which are taking place in the rural districts. There, the dwelling-houses and out-offices, fences, live and dead stock, and the routine of farm operations, are all being improved by the intelligent cultivators who are lords of the soil they cultivate. In fact we see no obstacle in the way to hinder this colony from being a most important and prosperous country, and one in which every advantage could be realized and enjoyed, that is possessed in the Mother Country. It is scarcely saying too much, that the people of this country are now nearly enjoying the same privileges as though they were living in England. From the circumstance that the produce of Canada, is now admitted at a mere nominal duty, into the English markets, the

Canadian farmer should exert all his powers in producing a large surplus of every description of produce, that can be successfully and profitably exported thither. It will be our constant and earnest desire to assist the producing classes of the country in every possible way, and we hope that all will be found willing to receive counsel upon matters of such great importance to general welfare of the country.

BRANCH AGRICULTURAL SOCIETIES.

Since the period that the scheme for organizing Branch Agricultural Societies in the several townships in the Home District was proposed, there appears to have been a very laudable spirit of rivalry at work among the most intelligent and wealthy farmers of the townships of Whitby, Markham, Vaughan, Toronto, York, and Scarborough, to ascertain which could add the greater number of subscribers to their subscription list. It was generally supposed that the township of Markham Society would outnumber any two Societies in the District; this opinion was confidently entertained by ourselves, owing to the circumstance, that it contained the largest population, the most wealth, and the greatest amount of practical Agricultural skill of any township in the Province of United Canada. Another circumstance which strengthened this opinion, and which had more influence than any other, was that the farmers in the south of Whitchurch, and corner of Uxbridge and Pickering, evinced a desire to become members of the Markham Society, rather than those which might probably be organized in the opposite extreme sections of their own townships. The Agricultural district, comprising the three sections of the above townships contains upwards of 300 farmers, most of whom, if not independent, are in very comfortable circumstances. The race of emulation has only fairly commenced, and in our opinion the chance for victory rests between the townships of Markham, Whitby, and Toronto. At the close of the year we purpose to publish a report of the actual number of Societies in the District, with the number of members to each, and those who have the greatest number of members on their list will unquestionably receive the greatest amount of credit by the readers of this journal who reside in other sections of the Province. So far as our humble ability and influence can possibly be exerted, in advancing the cause of Agricultural skill in every township in the Home District, as well as throughout every section of the Provinces, the yeomanry of all classes, without regard to party or sectional interest, may confidently rely upon our hearty co-operation, in furthering this great work. A commencement has now been made, and the results up to this period are most satisfactory. In many Districts of the Province, the plan of organizing township Branch Societies in unison with the scheme adopted in the Home District, is already extremely popular, and will, no doubt, be adopted in a number of Districts in the course of the present year. This laudable spirit, which is so fast gaining ground in the country, is a strong indication of the improvement, and friendly feeling which is taking place, in the minds of our mixed and heretofore divided population. To strengthen the bonds of union among all classes of our respected countrymen, and to develop the resources of the country, are the sole objects of our ambition in the management of this journal; and now, since those whose welfare we so ardently desire to advance, appear ready and willing to sustain our enterprise by their purse and their influence, we have an increased amount of confidence, in assiduously applying ourselves to the work.

TOWNSHIP OF WHITBY AGRICULTURAL SOCIETY.

By invitation, we attended a most spirited Ploughing Match, on the 15th inst., on the farm of Mr. Henry Hopkins, in the neighbourhood of Perry's Corner, East Windsor, which was managed by a Committee of Arrangement appointed by the Whitby Agricultural Society. The Committee deserve great credit for the masterly manner in which the whole performance came off. Twelve competitors entered the field, and each ploughed two roads in a most creditable manner. We have frequently had the pleasure of witnessing similar exhibitions in other parts of the Province, but in no instance do we recollect of seeing such a uniformity displayed in executing the work; and have seldom, if ever, seen better specimens of ploughing than those which were performed by the enterprising ploughmen of Whitby.

The number of spectators on the ground were both numerous and respectable, and apparently the greatest possible interest was felt by every individual present, in giving the ploughmen and judges a fair and equitable chance for the proper execution of the work allotted to each.

As soon as the ploughmen and spectators left the field, the judges entered, without previously knowing by whom the different specimens were executed; and the whole body of spectators retired a short distance, where they were addressed in a long, able, and practical speech by their worthy President, Peter Perry, Esq. Mr. P. pointed out to his intelligent audience, the great advantages that would result to the Agriculturists of Whitby if they would each come to the resolution to sustain, both by their purse and influence, their infant Institution. That they would thus establish a fit model for their neighbouring townships, and would very shortly increase the amount of intelligence and wealth of the township at least 100 per cent. He explained to them, in a very clear and forcible manner, the importance of cultivating a kindred feeling towards each other, and in no instance could it be so practically and efficiently done as on occasions such as they had met to celebrate that day. They had met for one common object, viz., the advancement of the Agriculture of their township. Every man, although hostile to his neighbour on party or sectional questions, should take him by the hand and cordially co-operate in this great movement, as though no difference of opinion existed on other questions which have no bearing on Agriculture. He could not allow this favourable opportunity to pass without complimenting his fellow-farmers and townsmen on the very friendly and cordial manner in which all parties co-operated, at the present period, in advancing the Agriculture of Whitby. In his humble opinion, it only required this feeling to be carefully and judiciously fostered to make their township the wealthiest, most populous, intelligent, and best cultivated in every particular in the Province. That the officers and members of the Whitby Agricultural Society would endeavour, by every possible means, to circulate all the information in their power among their neighbours, there can scarcely be a doubt; and that every farmer and operative, when fully made acquainted with the objects and advantages that will follow from the general diffusion of knowledge, as well as the laudable spirit of emulation that will be created in the breasts of every enterprising man in the township, would feel a pride in sustaining the character of their Institution, will, also, scarcely be questioned; with these prospects before them, he would recommend those who have influence in the township to cordially and energetically co-operate with each other in this truly great work.

In the course of the long and very eloquent speech, which, to do justice, would require a number of columns of our magazine, the worthy speaker pointed out, in a clear and comprehensive manner, the advantages that would result to the

Agriculturists of Whitby by deep ploughing—application of marl (carbonate of lime), of which an abundance of the richest description abounded in every concession of their township—and also a variety of other equally important Agricultural topics, of which time and space forbid us to report.

Before the assemblage dispersed, Abram Farewell, Esq., and our humble selves addressed a few congratulatory remarks, which were listened to, as throughout, with the profoundest attention. At the close of which three cheers were given "to the Ploughmen of Whitby," and the party retired to their homes well satisfied that the day was well spent.

The exports of Whitby, during the past year, equaled in value the sum of £45,000; and we have no doubt but that the amount will be increased fully 50 per cent. the present year. But few townships in the Province have greater advantages and more extensive resources, than the one under notice, and we are happy to add, that the people are abundantly intelligent to be aware that those resources and advantages are useless unless made available.

WEST GWILLIMBURY AGRICULTURAL SOCIETY.

On the 1st inst., we attended a meeting at the village of Bradford, in the above township, for the purpose of assisting in organising a Township Society, in connection with the District Agricultural Society, established at Barrie. Owing to the bad state of the roads, the meeting was not largely attended, but those who were present comprised a number of the most wealthy and intelligent inhabitants of the township. The officers for the present year are as follows:—Wm. Armon, Esq., President; Robert Hodgson, Esq., Treasurer; Adam Goodfellow, Esq., Secretary; Messrs. John Goodfellow and Isaac B. Rodgers, Vice-Presidents; and a large and respectable Board of Directors. The opinion is confidently entertained by a considerable number in the township, that, by a little extra exertion on the part of the officers of their Society, the two Societies collectively will be able to raise, by subscription, the £100, which will entitle them to the £300 of Government Bounty. There need be no doubt entertained on this score, if only the Directors feel a lively interest in establishing a creditable character to their infant Institution. A large proportion of the township of West Gwillimbury cannot be surpassed, in point of natural advantages. The land is beautifully undulating, and was originally covered with a dense forest of sugar maple, elm, white oak, and beech. The surface soil is a deep black vegetable mould, based upon a rich chocolate-coloured calcareous earth, which only requires to be brought to the surface to receive the action of the winter frosts, to constitute it the best wheat land in the world. The Society have resolved upon having quarterly meetings, to discuss Agricultural topics and to adopt plans for effecting the objects of the Institution most of which we hope to attend. Our readers may, therefore, expect to hear from the Gwillimbury Society at least quarterly.

TOWNSHIP OF ALBION AGRICULTURAL SOCIETY.

The Farmers in the township of Albion have organized themselves into a Branch Society, in unison with the scheme published in the December number of the *Cultivator*. The officers for the current year consist of James Johnson, Esq., Chairman; Mr. Daniel Switzer, Secretary; Mr. Charles Bolton, Treasurer; and the following Board of Directors:—James Monkman, Esq., Wm. Atchison, Thomas Spinks, Love Newlove, Seth Wilson, James Goodfellow, E. Q., Samuel B. Sterne, Esq., Thomas Bowes, H. Hudson, and Richard Bradley.

But few townships in the Province are better calculated for sheep husbandry, than Albion, and

as there is a certainty of a profitable market for wool being established in the District, we would advise our friends in that quarter to turn their attention largely to the improving their flocks of sheep, both for the wool and shambles. The Cheviot breed are well adapted to the climate and situation of this township.

TOWNSHIP OF YORK FAIR.

On the 22nd instant, we attended a fair and cattle show at York Mills, which came off with considerable spirit, and would have been very numerously attended if the notice had been more general. There were a number of very superior horses, cows, and swine on the ground, and the show on the whole was rather creditable, when the circumstance is taken into the account that the printed notices were only circulated four days in advance of the exhibition.

As soon as the judges awarded the prizes, the party retired to the hotel of Mr. Wm. Ross, where about 30 sat down to a well-served farmer's dinner. After the cloth was removed, a number of questions relating to the interests of the Institution were discussed, and the most active officers and members evinced a determination to persevere in their efforts, by exerting their influence with their neighbours until every respectable man in the township had his name enrolled on their list.

RUSSIAN SPRING WHEAT.

We would recommend those of our friends who are desirous of purchasing a superior sample of Spring Wheat, to call and examine a variety in the possession of J. M. Strange, Esq., Yonge-street, which has been recently imported direct from Russia. We have been to the trouble to test its germinating powers, and find it well adapted for seed, and have also weighed a bushel, the weight of which was exactly 61 lbs. net. The sample in question is of a very large bold berry; and by its general appearance, might be supposed, by competent judges, to be Winter Wheat.

THRASHING MACHINES.

We have received some enquiries relating to the subject of Thrashing Machines, from the town of Cayuga, Niagara District, and also from an agent in the Province of New Brunswick; and have instituted enquiries relative to the description of machines they require, in the several parts of the country that we have lately passed through, and have, as yet, been unable to meet with a machine in every respect suited to the wishes of our correspondents. They are desirous of purchasing a small simple cheap machine that may be worked with one or two horses and three or four hands, of a portable description. We know of no implement of husbandry that would take as well, through the provinces generally, as one that would cost about £15, and thrash about 60 or 80 bushels per day with the power just mentioned. Our machinists would do well to tax their ingenuity, and, if practicable, turn out a number of machines of the character described. We would almost be willing to guarantee an immediate sale for 100 provided they were built in a good style, and would execute their work in a proper manner. Such machines are in extensive use in the United States, and although patented, it would not extend to this country. We would, therefore, recommend those engaged in the business of manufacturing Thrashing Machines, to make a journey to Rochester or Buffalo, where they may at once see the machines we have described in complete operation.

HEMP AND FLAX CULTURE.

The cultivation of hemp and flax, has been frequently recommended to the Canadian farmers through the medium of our Journal, and we would fain hope that some action will be taken in the matter the coming season.

We feel very anxious, that the business of growing the above plants, both as an article for domestic manufacture and exportation, might be engaged in, simultaneously throughout the entire fertile regions of British America, on a scale sufficiently extensive to attract the attention of the British Government at once, by which means not only a profitable market for the articles would be opened and established, but a sure channel for investing a portion of the unemployed capital and skill which abounds in Britain, would thus be brought into favourable notice.

The great difficulty in inducing the farmers in British America, to engage in the cultivation of any particular crop, with which they have not been familiar with from infancy, is that they fancy the country is too new, or that the undertaking would not pay costs. No one would deprecate the principle of engaging in visionary schemes more than ourselves, but in the matter before us there is a moral certainty of the business of growing and preparing these crops for market, not only paying actual costs, but also paying from 40 to 50 per cent. for the money invested in the transaction, providing that a reasonable amount of skill be brought into requisition in the management of the crop.

All who are familiar with this subject, will not doubt the truth of the statement we have just made; but the question with us is, how shall the business be engaged in, on a scale sufficiently extensive to attract the attention of the powers that be, both in the Colony and Mother Country? As a reply to this question, we would suggest the propriety of establishing in each District or County of the Provinces, a joint stock institution, consisting of shares of one Pound each, the half of which to be paid down, and the other half in 3 or 6 months. The company should sow in a proper manner a certain number of acres of each of these plants, and procure machinery to be propelled by water or horse power, for the preparation of the fibre for market. The crop of seed and lint should be sold in the best market, and after all expenses were paid, an equitable dividend should be made to the stockholders, and the original investment, together with all the new stock that could be procured by the Board of Directors, should be again expended in the sowing of a still greater number of acres, from year to year. All the information on the subject that could be collected by the Managing Committee or Directors, should be published on behalf of the institution for the general benefit—and thus not only the business would be practically established, but a vast amount of information, on a subject now but little understood, would find its way to the fireside of the poorest settlers in the Colonies.

All this kind of reasoning may sound very well on paper, but the question again rises, how shall it be carried into practice? we would say, simply by engaging the honest, patriotic, and wealthy portion of the community in the cause, and trusting only those who have been long proved for their honesty, sound judgment and purity of purpose, with the keeping or controul of the funds and its mode of appropriation.

We shall not be satisfied, until the profits of the business before us, be fairly tested. It is our fixed opinion that no branch of agriculture would pay equal to it, and besides if these plants were grown extensively in this country, it would be a great saving in a national point of view. At present there are about £40 000 worth of cordage imported into Canada yearly, which might be manufactured at home with handsome profits—there are about a like quantity of bagging and canvass imported, which might be spun and wove

here by machinery if gentlemen with sufficient capital and a proper knowledge of that department of business could be induced to engage in the enterprise; and there is a vast amount of oil used, the manufactory of which has in all countries been a most profitable source of investment, which might be manufactured in these Colonies, so as to enable the manufacturer to compete successfully with those who now supply the market.

If hemp and flax be grown largely in the British American Colonies, and if the manufactory of cordages, bagging and oils, should be carried on to an extent equivalent to the home demand, of course the importation of those articles would thus cease. It does not follow from this, that we are to be any the worse customers to Britain.

We maintain that we are bad customers to the British manufacturers if we purchase more than for which we are able to pay. If the farmers grow hemp and flax, and the manufacturers convert the raw material into the articles above named, and all those departments of trade are carried on with wholesome profits, the results would most certainly be that both farmer and manufacturer would feel a pleasure in purchasing luxuries for their families, of British manufactory, which at present are denied them, in consequence of the extreme scarcity of capital in the country, caused from the great difference in the balance of trade, being against the Colonies. As soon as the growing of these plants become a regular business, and the farmers sow them in rotation through their farms in the same manner as is practised in Russia and in Flanders, the Canadian market will then, not only be stocked with the manufactured articles above enumerated, but immense quantities of the raw material will be shipped to Britain in exchange for manufactured goods. Tens of thousands of acres of the richest lands in the world, which are now unemployed in British America, could be cultivated with good profits with these plants, and in our humble opinion it only requires public opinion to be aroused to the importance of the enterprise, to secure a very general co-operation in the business.

The organization of hemp and flax societies should be entered into with spirit, and every encouragement should be given to the growth of these plants, by the Agricultural Societies now established; and in such localities where the cultivators are sufficiently spirited, a Joint Stock Company might be formed, by which means a practical example would be set the surrounding farmers, and the description of machinery used, and the mode of using the same, would be seen by all who would take the trouble to examine them, and the expenditures and receipts of the business, together with every branch of the management of the crops, would be published for the general benefit.

We earnestly recommend the influential farmers in the several Districts of the Provinces, to adopt some well concocted plan for engaging in the culture of these plants. If only five acres of each were sown in each county in the Provinces, and the results of the several experiments published, a beginning would thus be made which would ultimately tend to the general cultivation of these crops. We would however, rather prefer sowing 50 acres than 10, providing the Company were abundantly able; by having a large Capital, a proportionably large crop could be sowed in a proper manner, and on suitable ground, and also the most efficient machinery could be purchased for dressing and preparing the flax for market.

We have solicited Messrs. Hewson & Love, proprietors of an extensive rope walk in this city, to purchase 100 bushels of hemp seed, which will be sold in the Toronto market, at barely cost price, to any individuals who will engage in the culture of this plant. A quantity of flax seed will most likely be imported, by some of the seed merchants for a like purpose, and independent of this encouragement we are authorised to say that the Home District Agricultural Society, will award very liberal premiums for the best samples of the fibres from these plants. With a certainty of a profitable market for the produce, and the foregoing extra inducements, we would beg to urge upon our friends, to engage in the business though it be even on a very small scale,—the results will unquestionably be satisfactory if justice be done to the experiment.

In growing flax and hemp, the richest vegetable

grounds should be selected, and the soil should be ploughed deep so as to lessen the liability from injury from drouth—hemp requires richer ground than flax, and at the same time is a less exhausting crop. This is caused from the fact, that all broad leaf plants receive a considerable portion of their food from the atmosphere. A bushel and a half of flax, and two bushels of hemp seed may be considered a liberal seeding,—a less quantity per acre will suffice, when the crop is cultivated principally for the seed, but when the seed and fibre are of equal importance, the quantity of seed per acre should be equal, if not even more, than that recommended. The richest and best cultivated lands in Canada would average in flax, about 20 bushels of seed and 4 cwt weight of fibre per acre; and in hemp about 25 bushels of seed and 8 cwt weight of fibre per acre; this quantity however, would in many cases be doubled.

The best features connected with the growing of these crops are, that they will be a means of giving profitable employment to our labouring population during the long winter months, and will be an important item among the sum total of the farmers profits, and will also save some £50,000 or £100,000 to these Provinces annually, which would otherwise be sent out of the country for articles that could be produced at home with great profits.

A few words more on this subject, in the way of giving practical directions, may be found acceptable to many of our readers. The soil to which flax may be most appropriately sown is a rich alluvial or sandy loam, or a loose marl. Poor clays and gravelly soils are very unsuitable, and the flax on such soils will seldom cover the costs of cultivation or even come to maturity.

The best possible preparation for a flax crop is a newly broken up maiden sod or old pasture. If it were ploughed in the autumn, so much the better, but whether ploughed in the autumn or spring, it should be thoroughly harrowed before sowing, and the seed should be very lightly covered with finely pulverised earth. Another plan equally as good as the foregoing, is to sow a crop of oats on the inverted sod, and the following autumn, directly after seed time, plough deep and well for flax, and the following spring the ground should be thoroughly harrowed, and the seed sown without any further preparation. About 5 bushels of house ashes per acre, would strengthen the fibre, and very considerably increase the amount of crop. A good average crop might be expected from an inverted clover lay, which is better for the purpose, if it has lain two years. A friend of ours tried an experiment last spring on clover lay, although on a small scale fully tested the merits of the plan. He ploughed exactly one rood, with as much precision and care as though he were ploughing for a prize, after allowing the inverted sod to settle a few days, he harrowed thoroughly, then sowed two pecks of seed broadcast and harrowed it in lightly, and immediately rolled the ground, which gave it the appearance of garden culture. The produce in seed equaled $\frac{3}{4}$ bushels, and the fibre was superior to any thing of the kind grown in that part of the country. It was upwards of 3 feet in length, and of the brightest colour and strongest texture. The period of sowings, in this country, as soon as possible after the first week in May. The season will of course influence the time of sowing, but early is decidedly preferable to late, as it not only lessens the risk from drouth, but is considered advantageous to the quality of the fibre.

The seed to be of good quality, should be smooth, slippery to the feel, bright, plump and so heavy as to sink in water; it should taste sweet, and being broken, should appear of a green colour and oily.

The after management of this crop will be subject matter for some future number.

The difference in the management of the ground for flax and hemp is so very trifling, that they scarcely require to be treated separately. It should however be observed, that ground for hemp cannot be made too rich with vegetable manure, and that the produce will always be in ratio to the fertility of the ground upon which it has been sown. From 15 to 20 cwt of fibre have been frequently grown per acre, upon alluvial soils, such as is generally found bordering rivers. If this crop be sown upon up land, it must be borne in mind, that it delights in a rich soil.

PEASE.

The Pea crop is of great importance to the Canadian farmer—the climate of the country being remarkably well adapted for the growth of pease.

The soil to which pease are the most appropriate, are sandy loam mixed with calcareous particles, these soils are abundant throughout all British North America. It is a subject worthy of remark, that some variety of pease require one description of soil, and others require a soil of a very different character,—for instance, the grey species are best adapted to the strong soils, and the white to the drier and lighter ones. Wherever calcareous earths abound, large crops of the best qualities of pease are grown. A light dressing of shell marl or limo, is ever found to forward a crop. The best preparation for land for this crop, on those soils suitable for their culture, is thorough deep ploughing in autumn, and without any further labour, the seed should be sown the latter part of April, or first of May, at the rate of three bushels per acre, then harrowed in and rolled. No seed is more difficult to cover than pease; in all cases where it is doubtful that the seed could not be completely covered with the harrow and roller alone, we would recommend that they should be ploughed in lightly, and afterwards harrowed singly, and rolled. In most cases, where the land has been ploughed in the autumn, to a much greater depth than usual, that is to say, when two or three inches of the subsoil have been brought up to the surface and exposed to the action of the winter frosts and snows, the ploughing in of the seed will be found to pay 100 per cent. for the labour expended in the operation. On the land we cultivate, we would expect, in an average of cases, from the foregoing management, not less than 40 bushels of pease per acre.

If barn yard manure be applied to the soil in the spring of the year, it will occasion the crop to run to haulm, and proportionably lessen the product of grain.

We have much confidence in recommending the cultivation of pease on an extensive scale, it is the best possible food for stock, and is likely to be an extensive article for export. It is almost needless for us to state to our intelligent readers, that pease, like clover, draw their sustenance very largely from the atmosphere, and comparatively, even to a much greater extent, than from the soil.

In preparing ground for fall wheat, a much less objectionable plan than making naked summer-fallows, would be found to consist of sowing wheat after pease. This system has been practised from time immemorial, but the manner in which it has been generally performed, is equally as objectionable as the naked fallows. When wheat is intended to be sown after pease, the manure which is usually applied to naked summer-fallows, should be reserved for the pea crop, and should be spread on the ground in autumn, at the rate of about ten tons per acre, and should be ploughed in to the depth of, at least, nine inches,—the land should be made into six yard ridges, and completely cross-furrowed, so that the ground would be dry in the spring, at the earliest possible period.

The seed of some short-vined variety should be sown at the rate of three bushels per acre, ploughed in very lightly, harrowed and rolled, as recommended in the foregoing remarks. If the crop be large, say to the extent that the cultivator had

beer, in the habit of making his naked summer-fallow, it might be harvested with a horse and rake, similar to the plan usually practised in collecting hay with a horse. One man will pull four acres per day with all ease, although a portion of the crop might be thus left on the ground, still a provident cultivator would suffer no loss by this means, as his stock of fattening and store swine would gather them off the ground in time for sowing wheat.

In ploughing the ground for wheat, it should be done to the full depth that it was previously ploughed in the autumn, and the manure which had been ploughed to such a great depth, will be in a proper state for imparting strength and vigour to the young wheat plants, without entailing the disease of rust, which is generally brought about by the plan generally practised in this country, of heavily dressing naked fallows with unfermented barn-yard manure. If the furrow for wheat be ploughed to the full depth recommended, say nine inches, and the ground immediately harrowed and ribbed, and the seed of an approved variety be sown broadcast, at the rate of two bushels per acre, and harrowed in lengthwise singly, and the furrows and cross-furrows cleaned out with a plough to the full depth,—we would expect from such management a much greater crop, than from a naked fallow. Those of our readers who desire to grow an average crop of forty bushels per acre, throughout their entire wheat crop, would do well to try the plan we have recommended, or some other equally as good, and in the spring of the year, top-dress the young plants with fresh house ashes, at the rate of eight or ten bushels per acre, and which should be harrowed in with a pair of light seed harrows. If the harrow teeth be very long, or are likely to injure the plants, fine branches of trees, or brush may be interwoven in the harrow. The object to be gained by harrowing is, the pulverization of the crust that is formed on the surface, and this crust may be as readily broken by harrowing the ground to the depth of two inches as four.

We do not wish it to be understood that we would prefer the culture of pease to that of clover, as a preparative crop for wheat, but at the same time we are persuaded, that it requires less care than the latter in the management, and may be on strong clay lands much more efficacious, especially as the clover ley system requires the greatest nicety in the laying down the land with seeds, and also, in the ploughing of the sward, and depositing the seed wheat. It might, however, be observed, that so soon as the ridiculous notion of naked fallows can be exploded, both the sowing of wheat after pease, and on clover ley, may be introduced on the same farm, without interfering with a judicious system of rotation, or a well grounded method of farm management. For fear that it might be thought by some, that we were opposed to the plan of making naked summer-fallows in every instance, we would observe, that there are cases when the practice is absolutely necessary,—these cases, however, are rare. We shall endeavour at an early period, to point out the instances where naked fallows could be made with advantage, and the character and manner of the substitutes, which we would recommend in its stead.

To relieve the minds of our readers from any unnecessary suspense on this subject, we would at this time merely advert to the outlines of the system to be pursued. Without at all entering into detail,

we would, however, observe, that circumstances may be such as will enable us to make a few remarks on portions of this important subject in another column.

A more extensive culture of potatoes, turnips, mangel wurtzel, carrots, parsnips, and other roots as field crops, will follow as soon as the plan of making naked fallows give way to the improved system, which we hope soon to see generally established. These roots will, of course, require both a heavy dressing of manure and extra attention in cultivation, and both of which the farmer will be able to apply to these crops under the new system. A farmer who cultivates 100 acres of land, should have, at least, ten acres planted with roots, to be followed in rotation through the farm with spring wheat and the cultivated grasses. On such a farm, ten acres of wheat might be sown upon a clover ley, and ten upon a pea stubble, prepared in the style recommended. As it is desirable that as much spring wheat should be sown as autumn, five acres of vetches, and a like quantity of rape should be sown each and every year for summer soiling and for fattening sheep. The ground after these crops will only be required to be ploughed once in the autumn to fit it for spring wheat, as they thoroughly cleanse the ground from weeds if the seed be sown thick, as though it had been subjected to a fallowing operation.

A farmer cultivating 100 acres of arable land, might, each and every year, harvest 20 acres of fall, and a like quantity of spring wheat, without making a naked fallow once in 20 years; and, at the same time his soil would grow richer and deeper, until at length it would become in appearance to a rich garden mould.

To arrive at this supposed zenith in agriculture, the cultivator must possess a sound intellect, and must so happily combine the hand and head labour system of pursuing the various departments of his complicated and dignified profession, that his farming operations will advance at all seasons of the year, in a methodical and business-like manner. There are so many influences at work, that in order to carry out experiments successfully, and in order to carry into operation a system of farm management, such as would keep up the virginal qualities of our soil, and, at the same time, remunerate liberally for the expenditure, a vast amount of information is required, and such a farmer must be a close thinking, or far-seeing and sensible man. We occasionally meet with men of this character, and if we spend one moment of our time more happily or agreeably than another, it is when conversing on agricultural topics in such company. The sole object of our ambition is to foster a spirit for improvement among our agricultural friends, so that they may be enabled to successfully compete with foreigners in their own market, and also those in the markets of the Mother Country. By study and close application to business, the Canadian farmers may compete with the farmers of more genial climes in the raising of breadstuffs, and we fancy that if they study their own interests, they will make it a point to carry into practice, as far as practicable, the directions which we may give them monthly. Although we may have taken a wider latitude than legitimately belongs to the cultivation of the varieties of grain which stands at the head of these hurried remarks, still we hope they will prove acceptable and profitable to the generality of our readers. Before we close, we would remark that there are cases when it would pay the farmer to sow pease as a green crop to be ploughed under for wheat, and there are other times when it might be advisable to convert them into dried hay for the winter feeding of cattle; and there are other times when it might answer a very excellent purpose to sow a bushel of gypsum per acre on the pease, to give strength and luxuriance to the haulm, and at other times it might answer a profitable end to feed them on the ground to swine; but as each of these points would require a separate article of itself, we would for the present draw our remarks to a close, simply by requesting the sensible portion of our subscribers, to test the plans recommended on a scale sufficiently extensive to satisfy their own minds on the subject.

PLOUGHING MATCH.

By invitation, we attended the ploughing match which took place on the farm of Mr. David Smith, township of Toronto, on the 9th instant. Ten ploughs entered the field, and the work on the whole was executed in a most creditable manner. Indeed we were most agreeably disappointed with the performance, as we were under the impression that the common Canadian ploughs were still extensively used in the township in question, but upon enquiry we learned to the contrary, and were credibly informed that there are a number of mechanics in the township who manufacture Scotch wooden ploughs of as good a quality as could be purchased in any other section of the District.

The fund for the Ploughing Match was made up by private subscriptions and entrance money, so that none of the Society's funds would be required to cancel the awards, which arrangement was highly praiseworthy of the gentlemen who superintended the performance.

GORE DISTRICT AGRICULTURAL SOCIETY.

To the Editor of the Cultivator.

Nelson, 20th March, 1844.

Sir,—Will you allow me to notify the Members of the Gore District Agricultural Society, through the medium of your valuable paper, that a proposition will be made at the next annual meeting to change the Constitution of the Society, and to form Township Societies in connexion therewith, on a plan somewhat similar to that adopted in the Home District.

The reasons which have induced me to adopt this Resolution are,

1. That the Society has been generally supported with spirit in those Townships only in which the June shows have been held; that it is impossible to have these shows in every Township; that the adoption of Township Societies, as contemplated, will greatly increase the number of Subscribers, and thus enable the Parent Society to extend its usefulness incalculably.

2. That in Township Societies every Branch of Agriculture may be encouraged—whereas the District Society has been hitherto obliged to confine its operations almost exclusively to the encouragement of stock.

3. That the Funds of the Parent Society being increased, and the number of shows restricted to two in each year, (one for grain, implements domestic manufactures, &c. &c., and one for stock,) instead of six as at present, much higher premiums could be offered, thus ensuring greater competition; and funds would thus be also provided to enable the Society to offer liberal premiums for the best cultivated Farm, the best enclosed Farm, the best drained Farm, &c.

Other good and substantial reasons for infusing more vigor into our Agricultural Societies readily occur, and none more so perhaps than the great exertions made by influential bodies in Great Britain to induce the Imperial Authorities to throw open British Ports to the free introduction of Foreign grain, which renders it absolutely necessary for the Farmers of Canada to bestir themselves, and to consider what steps should be taken to guard against the further prostration of their interests, which will inevitably take place, whenever that day shall arrive.

In my humble opinion nothing can enable us to compete successfully with our European brethren, except the adoption of a system of Agriculture approaching in excellence to the improved systems pursued in Europe, and I know no means so well adapted to bring about this desirable end as the exertions of Agricultural Societies, whose transactions shall be published in some cheap periodical, and furnished to every member.

Let us ever remember, that the profit on any article does not depend upon its marketable price, but upon the excess of that price over the cost of production; and that as large fortunes have been

made by manufacturing calicoes at six-pence and nine-pence per yard, as when the same articles were worth from eighteen-pence to three shillings per yard.

Let us also ponder well on the fact that many thousand acres of land in Great Britain, which thirty years ago were not worth more than one or two shillings per acre per annum, have been improved until they have become worth fifteen to thirty shillings per acre or more; and that these improvements have been effected through the instrumentality of the Highland and other Agricultural Societies, assisted by the leading and influential men in the Kingdom.

Similar Societies are producing similar results in France, in the United States, and in every civilized part of the world; and I sincerely hope the day is at hand when the Societies in Canada will receive such assistance and encouragement from the magnates of the land as will cause its Agriculture to advance steadily to perfection, and render this Colony one of the best cultivated portions of America.

I am, Sir,

Your obedient servant,
JOHN WETENHALL.

To the Editor of the Cultivator.

Sir,—I think that none of your subscribers, will consider that I too highly appreciate your valuable work, when I assure them, that a single number is worth to me far more than the subscription price for a whole year. I trust that the valuable information contained in the columns of the Cultivator, is read with as much interest in other sections of the country as in this. It gives me great pleasure to see the noble stand, which the Home District Agricultural Society, and its Branches in the Townships, have taken, not only in support of the Cultivator, but in their zealous endeavours to remodel and establish their constitutions on a solid basis; which I feel confident will be a safe model for similar Associations in other Districts to follow. The conversational monthly meetings, which are about being held in several of the Townships of your old and wealthy District, together with the quarterly meetings of the District Society, which will be held at the period whilst the District Council is in Session, will no doubt prove highly interesting and useful to all who take part in the proceedings of those meetings, and I also trust that in this respect, the noble example set by the intelligent and wealthy farmers of the Home District, will be followed by the farmers of every Township and District of the Province.

If there ever was a time, more than any other, that the Canadian farmers should unitedly and energetically exert themselves in advancing their own and the country's welfare, it is this; and I flatter myself, that, the good work is already begun in such a laudible and spirited manner, that speedily an entire change for the better will be effected in every department of business, throughout the entire length and breadth of the land.

It appears to me, that by a spirited and general effort on the part of the Canadian farmers, they might not only be successful in organizing and establishing an Agricultural Society in each District, with branches in the Townships, and a Provincial Society to extend throughout every populated portion of the same, but might almost surpass our American neighbours in showing fine bred animals, and in the general routine of farm management—that such will shortly be the result is my most ardent desire.

Before I close this letter, I beg to give your readers, a brief outline of my success in breeding Berkshire Pigs the past year. I am fully convinced that if this or some other breed equally as good could supplant the long legged, long snouted, and otherwise ill shaped animals that abound in most parts of the Province, that thus thousands of pounds would be added to the exports of the country, and besides the profits to the farmer would be greatly increased.

On the 23d December last, I killed a pig, 20 months old, being a cross of a pure Berkshire boar and Woburn sow, which weighed 437 lbs. I have seen greater statements than this on paper, but am of opinion, for a pig of this age, in any country,

have exceeded the weight of the one I killed; and I assure you that no extraordinary care either in keeping or feeding was bestowed to this animal. The quality of the pork will not suffer in comparison, with that made from any other description of swine in the country. Indeed, I am so convinced of the superiority of the full bred Berkshire swine, over that of any other breed with which I am acquainted, that I have at considerable expense and trouble, imported the best animals that I could purchase in the neighbouring States, and have constantly on hand, pigs of various ages, which I will dispose of on reasonable terms. You will shortly hear from me again.

I remain, yours, &c.

J. W. ROSE.

Williamsburg, West, April 9, 1844.

PROVINCIAL AGRICULTURAL SOCIETY.

To the Editor of the Cultivator.

The Briars, Glanford, March 16, 1844.

Sir,—I have considered the plans mentioned in your journal of forming a Provincial and District Agricultural Societies, combined with Township ones, and my opinion is that the best and simplest plan is, first to get a good, sound Provincial Society leaving for the consideration of its members all future details and recommendations for District and Township Societies, &c. &c. It is therefore proposed, that a Provincial Society be at once formed; that each District send two or more members to be chosen by their Agricultural Societies, their expenses to be paid out of the funds of the said Societies; that they meet at Toronto, on the day of —; that the board thus formed determine upon and recommend a plan of proceedings for the protection of our Agricultural productions, the improvement of the soil, and all such matters. A Secretary to be chosen who ought to be a resident in Toronto, the President, &c. to be chosen out of the members sent. The regular formation to take place in 1845.

Yours truly,

JAMES S. WETENHALL.

INDIAN CORN.

1. The soil intended for corn must be dry; all experience proves that moist soils are unfit for the culture of this grain.

2. It should be made rich, and deep. Corn will bear heavier manuring than any other cultivated plant, and the soil should be deep to permit the roots to descend beyond all danger of drought.

3. Preparation of the seed is useful; but no seed ever soaked or swelled for planting or sowing should be allowed to become dry, as that injures its vitality.

4. The use of top dressing, such as mixtures of ashes, lime, plaster, &c. is established beyond a doubt. Perhaps there are few ways in which labor is better expended, than in placing such composts about corn.

5. The uselessness of hilling corn is demonstrated. Not a great crop of corn has been grown for years, in which this practice has been followed.

6. It is proved that corn too thick will not ear; but that in some seasons it will bear to be thicker than others.

7. The impolicy of throwing all the corn put in a hill, when planted, together, is forcibly shown by the success of planting in drills of single kernel.—*Cult.*

CURE FOR SPAVIN.—Mr. E. D. Worbasse of New Jersey, writing to the editor of the Cultivator, says, "The following I have found would cure a bone spavin in its first stages, if properly applied. Add to two table spoonfuls of melted lard, one of cantharides, made fine or pulverised, and a lump of corrosive sublimate, as large as a pea—all melted up together, and applied once a day till used up, confining it to the callous. This quantity is for one leg, and may be relied on a cure. It will make a sore and the joint will be much weakened while applying the medicine. No need of alarm; it will all be right when healed up."

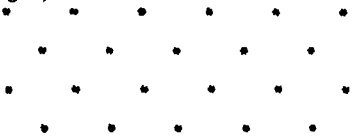
CULTURE OF FRUIT TREES.

THE APPLE.

In raising young apple trees, the stocks should be seedlings, and not suckers, as the latter furnish less perfect roots; and as those varieties which produce suckers most freely are chosen, they are apt to prove troublesome from the abundance which they yield.

Transplanting apple trees is generally performed with far too little care; though their hardiness will enable them to endure bad management, the thriftiness from good treatment far more than compensates all additional labour. The mode of proper transplanting has been described in a former number. Where the quantity of land is small, such care is especially necessary.

It is now satisfactorily determined that apples are a most profitable crop for feeding domestic animals; hence larger orchards are becoming desirable. Those on good land will occupy less if placed in the hexagonal form, or in equilateral triangles, thus:



For several years after young trees are transplanted, the ground should be constantly cultivated. This is easily performed so long as the trees remain small. When they become large, an occasional cultivation, with intervening crops of grass, may be sufficient for extensive orchards.

It is a common practice to neglect not only cultivation but pruning. Irregular and stunted trees, and small and inferior fruit, are the consequence. These may be prevented by moderate, frequent, and judicious pruning, if the trees are not already old. The object is to diminish the thick growth, to increase the vigour of the branches, and to admit light and air. The best and most thrifty branches should be left, the distance asunder being as nearly equal as possible, and forming a well shaped top. The branches should be cut closely in pruning, but not so much as to occasion too broad a wound. If the wounds are an inch or more in diameter, they should be protected by a thick coat of paint, or better by a mixture of brick-dust or whiting with warm tar. This prevents cracking, admission of moisture, and the consequent rotting of the branches. Pruning should never be done, in spring when the sap is flowing, but may be performed either in winter or in the summer. A sharp saw is the best tool for removing large limbs.

There are many orchards of ungrafted and comparatively worthless fruit, which might be greatly improved by converting the tops of good varieties. This is usually done by grafting into limbs two or three inches in diameter, but it is more difficult to perform, and the young shoots are much more liable to be broken off by wind, than when grafted into small branches. A sufficient number of young and thrifty shoots may be obtained in one season for grafting, by cutting off a few of the most central and larger limbs, when fresh ones will spring up vigorously in their place. As the grafted branches increase in size, the old ones are to be gradually removed.

It would be difficult, even for one extensively acquainted with the varieties of the apple, to give a complete selected list; the difficulty is increased by the great uncertainty of names among cultivators, and the multiplicity of synonyms for the same fruit. Lindley says, with much truth,—

“In apples, a greater profusion exists in this respect, than in any other description of fruit. This arises not so much from the great number of varieties grown, as from the number of growers, some of whom seek to profit by their crops alone, regarding but little their nomenclature. Nurserymen, who are more anxious to grow a large stock for sale, than to be careful as to its character, are led into error by taking it for granted that the name of the fruit they propagate is its correct one, and no other; hence arises the frequency of so many fruits being sold under wrong names. Gardeners, who purchase trees, become deceived by this proceduro, and do not discover the error,

unless they have been imposed upon by the substitution of something worthless, and obviously at variance with the character of the fruit sold them. This is a serious evil, to say nothing of the disappointment of the purchaser; for unless the mistake be detected at first the longer the tree grows before it is discovered, the more time will have been lost by its cultivation, and be it remembered, this time is irrecoverable.”

It is care alone that can correct this evil; nurserymen should propagate for sale a smaller number of varieties on the one hand, and examine thoroughly a larger number on the other, that they may prevent confusion and mistake by the former, and improve their selection by the latter. Purchasers must be careful to obtain them from those sources most to be depended on; or if they raise their own trees, they should, if possible, obtain their grafts from trees, whose genuineness has been proved by actual bearing.

In giving a short list of apples, it is to be remembered that there are many good varieties, and that some must therefore be omitted; and to some, such a list may seem badly selected, in consequence of the many inferior fruits falsely called by the name of excellent varieties. The following list may assist the cultivator in selection:—

SUMMER FRUIT.

- Yellow Harvest,
- Early Sweet Bough,
- Early Red Juncating,
- Summer Pearmain,
- Sine Qua Non,
- Buffington's Early.

AUTUMN FRUIT.

- Belle-bonne,
- Strawberry Apple,
- Summer Queen,
- Kambo,
- Autumnal Swaar,
- Gravenstein,
- Fall Pippin.

WINTER FRUIT.

- Baldwin,
- Swaar,
- Peck's Pleasant,
- Jonathan Spitzenberg,
- Jonath,
- Orley,
- Baldwin,
- Rhodo Island Greening,
- Ribston Pippin,
- Newtown Pippin,
- Roxbury Russet,
- Tatman Sweeting,
- Northern Spy.

All these are, in a greater or less degree, suitable for table fruit; and some of them are also peculiarly adapted to culinary purposes. As the day for the manufacture of cider has passed away, and a far more profitable use is made of apples in feeding domestic animals, no varieties expressly for cider are given.

To those who have but small gardens, the following are more particularly recommended:—

- Yellow Harvest,
- Bough,
- Sine Qua Non,
- Strawberry Apple,*
- Gravenstein,

- Fall Pippin,
- Swaar, Baldwin,
- Spitzenberg,
- Jonathan,
- Northern Spy.

The uses of apples are becoming yearly better understood, and their value constantly increasing to the farmer. It is now not only satisfactorily proved that they are not only excellent for fattening hogs, but are equally so for feeding milch cows during winter. Horses may also be advantageously fed on sweet apples. For cows and hogs, the difference between sweet and sour apples is found to be far less than generally supposed. A moderate estimate of the expense of one acre of orchard, (remembering that the ground may be cultivated with crops while the orchard is young,) will show the cost at from one to three cents per bushel; their value for feeding hogs has been proved to be much greater than the same quantity of potatoes.

THE DISEASES AND ENEMIES to which the apple tree is subject, are generally not formidable. It has, however, sometimes serious ones to contend with. Among the chief are—1. The Caterpillar. 2. The Borer. 3. The Canker. 4. The American Blight. 5. The Canker Worm.

1. THE CATERPILLAR.—This was formerly the most formidable evil the apple had to contend with in Western New York, and, in fact, the only one of any importance. There are several species; but the only one which proves seriously injurious appears in the spring as soon as the leaf buds begin to open, at which time it is not the worth of

* This variety appears to be known only in western New York, and appears to be greatly superior to any other variety of that name. Nearly the only nursery which has furnished it is that of Thomas & Smith, of Macedon.

an inch long, nor so large as a cambric needle; it increases constantly in size for a few weeks till it is two inches long and a quarter of an inch in diameter. It then spins a cocoon and passes to the pupa state. In the latter part of the summer it changes to a brown miller, and deposits its eggs in cylindrical rings of several hundred each round the smaller branches. Every ring of eggs destroyed in fall or winter, which may be easily done by cutting off the small shoots which hold the eggs and burning them, will prevent a nest of Caterpillars next season. If left till they hatch, they are easily killed when they first appear, by a caustic or poisonous solution, as of lime, ley, or of tobacco, applied to them with a cylindrical brush on a pole. The later the operation is deferred, the more difficult the work becomes. They have been much diminished of late years, but need watching to prevent increase.

2. THE BORER.—This is an insect which enters and perforates the wood of the tree at or a little below the surface of the earth. In Western New York they rarely prove destructive to the apple tree. They may be taken out by introducing into the hole they have made, a flexible bared wire, or punched to death in their holes by a flexible twig.

3. THE CANKER.—This is sometimes termed *bitter rot*. It is ascribed to various causes. By some it is considered as arising from neglected culture—poorness or wetness of soil, or exposed situation. But the most probable, or the immediate cause, appears to be injudicious pruning and bruises. Decay generally commences at the wounds thus caused, and extends till the tree dies. To prevent this never prune in spring while the sap is in active motion, and protect all wounds of much size from air and moisture by a coat of paint, or of tar and brick dust. The only way to cure trees already diseased, is to cut away all affected parts and apply a suitable covering to the wound. It rarely proves a serious evil in this country.

4. THE AMERICAN BLIGHT, (so called,) is caused by the *Aphis lacanta*, a small insect so thickly covered with fine white hair as to appear enveloped in fine cotton. It is furnished with a fine bristle like beak, with which it perforates the bark of the branches. Excesses rise, the limb grows sickly, and perishes. Branch after branch is assailed in turn, and the whole tree ultimately dies. It is easily destroyed on young trees, and older ones if recently attacked, by brushing over the affected parts a mixture of equal parts of fish oil and rosin melted together and applied warm. The operation should be performed as early in the season as possible, or when the insect is first perceived. In England, many trees have been greatly injured, and some destroyed by it. Although introduced into nurseries in this country, it has hitherto proved of little injury, and, if carefully watched, probably be kept from spreading.

5. THE CANKER WORM, where it has appeared, is perhaps the most destructive to apple trees of any insect in America, but it has hitherto been confined in its ravages to certain parts of the country, particularly of New England. Its habits are thus described by Kenrick:

“The canker worm, after it has finished its work of destruction in spring, descends to the earth, which it enters to the depth of from one to five inches. After the first frosts of October, or from the 15th or 20th, those nearest the surface usually begin to rise, transformed to grubs or millers. They usually rise in the night, and invariably direct their course to the tree, which they ascend, and deposit their eggs on the branches, which are hatched in April or May. They frequently rise during moderate weather in winter, when the ground is not frozen, and in March, and till towards the end of May. When the ground in spring has been bound by a long continuance of frost, and a thaw suddenly takes place they are said sometimes to ascend in incredible numbers.”

They destroy all the leaves of the tree and thus eventually cause its death. The only effectual remedy yet devised is to prevent their ascent, which is effected by means of circular lead troughs filled with fish oil, encircling the tree.

J. J. F.

* If applied early, lime white-wash will do it off easily.

BUTTER MAKING.

Through matter of curiosity, we lately called upon the principal dealer in firkin butter in this city, to whose politeness we were indebted for a careful inspection of a considerable number of lots, which he assured us was the very best samples brought to the Toronto market. To say the least of the matter, there was not a single firkin we inspected, but what would be condemned in the British market. We are sorry to say that the dairy in Canada is not considered a branch of business of much importance to the farmer. With present prices of the produce, it is unquestionably a money-making business, and that large fortunes might be amassed from manufacturing both butter and cheese for home consumption, and the surplus for exportation, none will pretend to deny, who are well informed on the subject; but the great want of capital, and a still greater scarcity of skill and thorough knowledge of this branch of husbandry, are most powerful barriers to the immediate general introduction of an improved system of management being pursued by the Canadian farmers.

In the second volume of the *Cultivator*, we gave our readers a very comprehensive method of making butter and cheese as practiced in England. In our present volume we purpose to give insertion to as much valuable information as can be gleaned on this subject from our American cotemporaries. The plain matter-of-fact style in which most of the American writers on Agriculture couch their ideas, will inevitably strike home conviction to the minds of all who read them, and thus a practical good will result from their perusal.

We copy the two following ably written articles from the *American Agriculturist and Farmer's Cabinet*, which may differ a little in their details, but at the same time must be read with much profit by all who are engaged in butter-making.

We hope shortly to see the business become more respectable than it is at present. We could point out a single merchant, within a few miles of this city, who would contract with the farmers for £10,000 worth of a superior quality of butter, for exportation to England, for which he would pay the very liberal price of 6d. currency per lb.; but with the present imperfect knowledge of the manufacture, together with the very trifling amount of public spirit, which is too generally manifested in matters of this description, it would be unreasonable to expect that one half of the above quantity could be purchased, and but a trifling portion of what would come to market, would most likely be of such an inferior quality, that it would not make a profitable article for export.

In the hope that the cultivators of the Canadian soil will improve in the management of their dairies, as well as every other department of their noble profession, we shall feel a great pleasure in treating them monthly with plain practical directions on almost every branch of Agriculture

BUTTER MAKING IN ORANGE CO., N. Y.

From the *American Agriculturist*.

I have delayed until now a compliance with your request, to furnish to you a statement of the progress of butter-making, as pursued in our county, with a view to obtain from a number of our best butter-makers, the details of their process. As the statements received do not materially differ from each other, or from my own mode of proceeding, I shall give you that.

The Milk Room.—It is all-important that this should be cool, dry, and moderately light, with

a free circulation of air. Mine is in the cellar of my farm-house, ventilated by means of two windows about two feet square, on the north side, and a like window, and a lattice-door on the south side, all covered on the outside, with wire-gauze, fine enough to exclude the flies. The floor is formed by a layer of small stones, six inches deep, well grouted—that is, a mortar of lime and sand, thin enough to run freely, is poured upon the stones until they are entirely covered with it—and when dry, a thin covering of water-lime cement is put upon it, and made smooth with the trowel. This costs little, if any more than a plank floor, and effectually keeps out both rats and mice; and as water does not injure it, it is easily kept perfectly clean and sweet. The milk-pans stand upon marble slabs, raised upon brick-work, about two feet from the floor, and the butter is worked upon a marble table. A pump is placed at one end of the room, bringing the water through a lead pipe, from the bottom of the well, and the water discharged, runs the whole length of the cellar in a channel prepared for the purpose, when the floor was cemented, and escapes through a fine iron grate, cemented into the floor, over the mouth of the drain. The churn stands in the milk room, and is worked by a dog-power machine, on the outside of the building. The milk-room should be used exclusively for dairy purposes.

Dairy Utensils.—The cows are milked into wooden pails, not painted on the inside, and kept perfectly neat and sweet. They must be thoroughly cleansed, dried, and aired, morning and evening, and never be used for any other purpose. The pans should be shallow, with the sides much more slanting than the usual pattern of pans which we see at the tin shops, and be kept as bright as silver; they must also be well aired in the sun.

The Milk.—This must stand in the pans undisturbed, until the whole of the cream has risen;—some of our best dairy-women say, until it is "lapped," or thick,—both milk and cream are then put into the churn together, at a temperature of about fifty-five of Fahrenheit; the churn is then worked with a rapid stroke, say from 60 to 75 per minute, until the butter "begins to come," when the brake is put upon the wheel, and the churn is worked more and more moderately, until the butter is entirely separated from the butter-milk. Upon taking the butter from the churn, it is washed with cold water, salted, and thoroughly worked with a wooden ladle, upon the marble table. It must never be worked with the hand, as the warmth of the hand will injure it. It is then set aside in a cool place, until the next day, when it is again, in like manner, worked until every drop of the butter-milk is extracted. It is then fit for packing away, or for use. The butter must at no time be allowed to get soft.

FREDERICK J. BETTS.

Newburg, Dec 12, 1843.

From the *Farmer's Cabinet*.

Now what we want, it is just what is greatly to the interest of the farmer to supply, an article produced from grass during the summer and fall months, well cured, and well packed in new tubs or kegs—for glazed vessels are never safe, and stone-ware is too expensive for common use.

The production of good butter depends something on the breed, more on the keeping of the cow, but chiefly on the mode of curing and putting down; and I think it would be easy to prove the saying true, that "good butter is more easily—i. e. cheaply, made than poor." Of two cows designed for the dairy, the one having no very bad qualities, and some good ones, valued at \$10—the other, quite a superior animal, though not the very best, priced at \$50—be sure to take the latter—if you have not money enough don't buy either till you can pay for the best; to begin with the poor one would be to enter on the road to poverty—the other leads to wealth.

Clean Cultivation and good seed, will, on most soils, secure a good pasture. Having thus a good cow, good grass, and good hay, a warm stable for winter, and kind treatment in every respect, will ensure the greatest product at the least possible expense.

So much has been said of the necessity of cleanliness in the dairy, that it would seem unnecessary to add another line or another precept—there is a

single item however, on which I would say a word to all, but to the milk men supplying the city, especially:—much of the milk exposed for sale has, after standing a few hours, a dark sediment; I know of a few exceptions to this—doubtless there are many—and these men may be found asking and obtaining a higher price for their milk than their less cleanly neighbours. I suppose every dairyman knows where this black precipitate comes from; if not, I can tell him—it is from the udder and belly of the cow—in the process of milking, it has been disturbed by the hands and sleeves of the milker, and fallen into the pail in the form of dust, or sometimes in larger portions, and these have been thoroughly divided and intimately mingled with the other contents of the vessel, by the quick streams poured upon them. If the animals be well bedded, a hard-brush freely used upon these parts, before the pail is brought near, will generally sufficiently cleanse them; not unfrequently, however, a resort to water is found essential to purity.

With cleanliness, good butter, possessing the quality of keeping a twelvemonth, may always be made by regarding a few essentials; *thoroughly* expel the butter-milk, season with the best fine salt, pack closely in new clean casks: this will secure good butter; but there are degrees of excellence, depending on the greater or less completeness with which the two great conditions, freedom from butter-milk and exclusion from air, by careful packing are complied with. The manner of accomplishing the first might be left to the option of the dairyman, provided it be *certainly* done; but certainly it is not usually done, though all make some attempts to do it. The hand is better than a ladle or wooden spatula, for this purpose; but a better mode, one that lessens the labour and renders it more efficient, is to clothe the hand with a piece of linen, the cloth readily absorbing the fluid it comes in contact with; this method, I am assured, is pursued in making the Goshen butter, and I know it to be practised by some others noted for their success in this manufacture. But there is another mode more effectual still, and which, I apprehend, should be adopted by all, in putting down butter for future use; it consists in washing or kneading in cold spring water, using successive portions of water, till it comes away perfectly limpid. A sponge having fallen into a dirty pool, we may by compression, especially if a cloth be used beneath the hand, get rid of most of the water it contains, and the filth with it; but no one, I am sure, would think of saying it was quite clean, till it had been washed. I know there is a prejudice against bringing cold water in contact with butter, a sort of hydrophobia; and the practice has received, too hastily, I think, the unqualified condemnation of others; for instance, J. P. Kirtland, of Rockport, in an able article on "Butter Making," published in the *Cleveland Herald*, and copied into the *Cabinet* some months since, says:—"Some persons destroy its richness and sweetness by washing out the butter-milk by means of cold water, a practice always to be avoided." Another writer, over the signature "Old Dutchess," says:—"Butter should be cured without the aid of water."

On the other hand, some of the most noted dairies in the vicinity of Dublin, supplying that city with fresh butter, practise washing it, I am assured, with spring-water. A writer in the *New England Farmer* says:—"In the large towns of Holland, of Flanders, and of Switzerland, where they make a great quantity of butter, they knead it in whey; when it is well consolidated, and has no lumps, and appears quite rich, they wash it in several waters, until the last pours off quite clear." Doubtless some of the colouring matter, and a portion of its sweet milky taste are lost by this process, especially if continued too long a time, and hence the propriety of kneading it in its own whey till consolidated, as practised in Holland and elsewhere. The Massachusetts Agricultural Society's highest premium for butter, \$100 was awarded some time since, to six tubs, the manufacture of William Buchop, of Vermont; twenty-seven lots were offered for premiums on this occasion, and the second award, of \$50, was to L. Chamberlain, of Massachusetts, for six tubs also—Chamberlain had long been noted for producing good butter, and did not wash with water; the committee of awards admit that they had some hesitation in choosing between the two lots, but

say "they based their final decision on the fact that *Mr. Duchop's butter was equal at least to Mr. Chamberlain's, and from the manner it was put down, appeared more likely to keep.*" This was his manner of making: "The milk is kept in tin pans and churned every morning, if the weather is warm, the butter milk is removed by frequent washing in water, and four pounds of salt and one pound of sugar used for each hundred weight of butter, packed in wooden vessels, and set in a cool place." The merits and demerits of washing butter appear to be nicely appreciated by a practical French writer, in the following sentence taken from the journal before quoted:—"Fresh butter is distinguished by a mild and agreeable flavour, the less it is washed the more delicate and fine it is. But in this case its delicacy exists no longer than from one day to the next, particularly during great heat. This delicacy is owing to the milk which remains with it, and it is that which prevents the butter from keeping, by communicating to it a sharp sour taste. Thus you cannot dispense with freeing the butter from milk, excepting when it is to be used immediately. That which is intended for keeping cannot be too carefully attended to in this respect. To procure butter of an exquisite flavour and extreme delicacy it must be washed finally with new milk; the cream of this new milk is incorporated with the butter, and communicates to it its sweetness and delicacy. Like butter that has some of the butter-milk remaining in it, however, this will not keep well."

On the whole, then, though good butter, that will keep for at least a year, may be put down without washing during any part of the grass season, yet we have sufficient evidence that most farmers of the interior fail to do so; and surely a great good would be effected, could they be induced, by observing the two cardinal conditions, to effect a change in this respect. In making, *except the butter-milk*; in packing, *exclude the air*. The first is accomplished most certainly by cold water; the second by packing close in new casks, containing 50 to 100 lbs each, and made of white oak—the salt should be fine and of the best quality; ladies who are particularly nice in this matter, make it still finer by the rolling pin before using; the butter should always stand twelve to twenty-four hours after salting, and then be worked over, using the *linen cloth* under the hand, till all the salt-water, now collected in small drops, is absorbed; now pack, and when the cask is full, add an inch of dry salt, and head up; or, if pickle be preferred to cover the surface, boil and skim it first, and apply it when cold; keep in a cool place; it seems not material to the keeping of butter, whether sugar be added or not—salt-petre should never be used. Though to make butter of the highest flavour, cream should stand in summer but twenty-four hours, it is generally considered sufficiently often, if kept in a cool place, to collect at three times a week.

As evidence that neither our climate nor soil is defective, it may be remarked, no market, perhaps, can furnish more delicate or richer specimens of fresh butter, than that presented during the grass season in our own; and it may not be too much to say, that the summer and fall butter is generally good, *very good* when it finds its way to market within a day or two of the time it is made; but unless kept in a place cooler than most cellars, it loses its sweetness about as soon as new milk would if kept in the same temperature: this serious defect can proceed, I think, but from one of two causes; the presence of butter-milk, or from the excellent flavour and creamy sweetness of much of it when quite new, there is reason to apprehend that the practice prevails to some extent, of washing with new milk: this, as we have seen, is utterly incompatible with its preservation, and no dairyman should hazard the experiment who cannot, by attending market daily, sell his produce within twenty-hours of the time it is made.

An extensive demand exists for a sweet grass-made butter for winter use, and the interior counties of this State must supply it, or it will be imported from elsewhere—a process already carried on to some extent, and which, under existing circumstances, must rapidly increase. For the greasy rancid material that now abounds in every grocery store, under the cognomen of "roll butter," we should see substituted a rich sweet article,

retaining its good qualities through the year in all climates. For the misshapen masses of particular-coloured stuff that now encumber cart-tails, or barrel-heads at store doors, and which is, much of it, dear at the price asked,—about that of lard—we would see the new firkin with its golden contents,—the joint product of the labour and skill of the thrifty husbandman and his accomplished slaughter—meeting ready sale in this and foreign markets at double the price of the present article. Philadelphia, 2nd mo., 1844.

WORN OUT LANDS.

For the Farmers' Cabinet.

In the *American Farmer* of December 27th, appeared an extract from a communication by John Jones, of Wheatland, to the *Farmers' Cabinet*, in which he makes allusion to the astonishing effects brought about in the renovation of worn-out lands in Delaware, by Dr. Noble, of Philadelphia. On land which cost but \$15 per acre, and produced but five bushels of wheat three years ago, by the application of eight loads of manure, costing—freight included—less than \$1.50 per load; the Doctor has raised forty-seven bushels of wheat from one acre, and from the remainder rather less, the average being an enormous increase over the produce of former years. The editor of the *A. Farmer* expresses an "intense desire" to learn the secret by which the Doctor has been enabled, at the small expense of less than \$12 dollars per acre, to effect such astonishing results.

We would inform him, there is no secret whatever in the method pursued, but such as any farmer might discover for himself, if he would but take the trouble to read some of the numerous works upon the application of Chemistry to Agriculture, lately published. Knowing by chemical analysis or examination, the composition of the grain and straw of wheat, and that of the soil, it was an easy matter to apply those materials which were needed, in order to produce a healthy and vigorous growth. He prescribed for his wheat and soil as he would for a patient, and with equal success, health and strength have been restored to the suffering subject.

Now, as to the sources of the manure which he has made use of, we will say a word; it is in the power of every farmer, near large cities, to procure the materials which are needed to enrich the soil.

The Doctor formed a compost obtained from various sources, consisting of the refuse of tanners, soap boiling establishments, &c; in short, of such animal and vegetable substances as contain soluble salts, or which can be made subservient to the growth of plants. In the selection of these substances he was guided by their composition as made known by chemical analysis. "Give," says the rational agriculturist, "to one plant such substances as are necessary for its development, but spare those which are not requisite, for the production of other plants which require them."

"An empirical," or quack system "of agriculture, has administered the same kind of manures to all plants, or where a selection has been made, it has not been based upon a knowledge of their peculiar composition." The phosphate of soda or lime, the silicate of potash, and sulphate of ammonia, or other salts containing these in other combinations, are necessary for the production of wheat; these have been supplied by the Doctor, and why should we be astonished at the results which have followed their application? He has adopted the scientific method of manuring, and if his knowledge of the composition of the soil and wants of the crop was exact, and his conclusions correctly drawn, he could not err in the application of his manures. His is indeed a triumph of science over the old fashioned, uncertain, and empirical mode of farming; here is an example worthy the attention of every farmer, and especially should it be considered by those whom prejudice has so blinded that they cannot perceive the vast benefits arising from the judicious application of scientific knowledge to agriculture. It is indeed "creditable to the Doctor as a scientific farmer;" we hail him as a benefactor, and desire that he may persevere in that path of usefulness in which he has found both pleasure and profit.

J. S. L.

Philadelphia, Second month 6th, 1844.

GORE DISTRICT AGRICULTURAL SOCIETY.

Copies of the following Petition have been forwarded to both Houses of the Imperial Parliament:—

To our Gracious Sovereign Queen Victoria, Queen of Great Britain and Ireland and by the Grace of God, Defender of the Faith:

The Petition of John Wettenhall, Esq., President, and James Sodgwick Wettenhall, Esq., Secretary, in the name and in behalf of the President, Vice-President, Directors, Secretary, and subscribers of the Gore District Agricultural Society in Public Meeting assembled:—

Your Petitioners approach Your Majesty with loyal and dutifully attached subjects, and in common with the great body of the Agricultural community of the Province of Canada, with sincere gratitude for your Majesty's solicitude in our welfare as evinced by the enactments of the Imperial and Colonial Parliaments, by the recommendations of your Majesty's Ministers in favour of a protection, and encouragement to agriculture in Canada, now graciously recognised as an integral part of the British Empire.

Your Petitioners humbly beg to state that although deeply impressed with the benefits thus conferred upon this Province, they are led to view with alarm and apprehension the progress now making in England by a large body of individuals, known as the Anti Corn-Law League, whose avowed object is not only the entire abolition of the existing Corn laws, but free admission of grain into the Ports of Great Britain from all parts of the world.

We, your Petitioners, humbly desire to represent to your Majesty, that such a measure, if accomplished, would be in its effects undoubtedly ruinous to the Agriculturists in this rapidly growing colony, and ultimately to every other class and interest connected with it.

The heavy charges of freight and insurance compared with the expenses of transit from the Continent of Europe, would amount to the exclusion of our produce unless protected against foreign competition by adequate duties.

Your Petitioners, therefore, humbly pray that your Majesty will favourably consider the welfare of your subjects in Canada, and that it will please your Majesty to continue such a rate of duty on the admission of grain, as will protect so valuable a colony from so serious a misfortune, which would likewise, although in a less degree, fall upon the manufacturing classes of Great Britain, as the Colony mainly depends upon the proceeds of its Agricultural productions for its supplies of manufactured goods.

And that the Almighty God, the Disposer of all events, may ever bless and protect you, our Gracious and beloved Queen, is our fervent prayer.

JOHN WETTENHALL,
President G. D. A. S.
JAMES WETTENHALL,
Secretary G. D. A. S.

CHEVROT SHEEP.—Count de Gourcey saw a splendid flock of these sheep, on a poor and rough mountain pasture in Sutherland. He was much surprised to see these "horrible mountains and miserable pastures, stocked with such fine animals, yielding on an average 5 lbs. of long beautiful wool—wethers at three and a half years old, without having eaten any other thing but what is to be found in these wilds, weighing alive 200 lbs." "What I have seen in this journey, makes me more convinced than ever that the Chevrot breed is one of the highest merit, since they live and fatten on such land, and that, too, without adding any other food besides what these wilds produce."

SUB-SOIL PLOWING.—At a late meeting of the Cornwall Agricultural Association, Mr. Hiley stated that he had practiced sub-soil plowing for four years, and that all his crops had been greatly benefited. His carrots had doubled in quantity, his turnips had greatly increased, his man gold wurzel was nearly doubled.

AN EASY METHOD OF MANAGING BEES, IN THE MOST PROFITABLE MANNER TO THEIR OWNER.

The above is the title of a neatly printed manual, which was lately presented to us by Mr. David Kellar, of Churchville, Home District. Mr. L. informs us that he has followed out in detail the directions of the author, and his efforts have been crowned with success.

If the Canadian farmers would turn their attention largely to the management of Bees, the article of honey would very shortly become a considerable item on our list of exports to England. Immense quantities of honey is imported yearly into the Mother Country from Holland and other continental countries, all of which might be supplied from this country if the people would only turn their attention to the business.

In the hope that the management of Bees will receive more attention than formerly by the Canadian population, we shall publish the manual before us in the present and four subsequent numbers of the Cultivator.

RULE I.

On the Construction of a Bee Hive.

A Bee-Hive should be made of sound boards, free from shakes and cracks; it should also be planed smooth, inside and out, made in a workmanlike manner, and painted white on its outside.

REMARKS.—That a Bee-Hive should be made perfect, so as to exclude light and air, is obvious from the fact, that the bees will finish what the workman has neglected, by plastering up all such cracks and crevices, or bad joints, as are left open by the joiner. The substance they use for this purpose is neither honey nor wax, but a kind of glue, or cement of their own manufacturing, and is used by the bees, to fill up all imperfect joints and exclude all light, and air. This cement, or glue, is very congenial to the growth of the Moth, in the first stages of its existence.

The moth-miller, enters the hive, generally, in the night—makes an incision into the glue, or cement, with her sting, and leaves her eggs deposited in the glue, where it remains secure from the bees; it being guarded by the timber on its sides. Thus, while a maggot, (*larva*.) the moth uses the cement for food until it arrives so far towards a state of maturity as to be able to spin a web, which is more fully explained in remarks on Rule 10.

The size of a hive should be in accordance with the strictest rules of economy, and adapted to the peculiar nature and economy of the honey-bee, in order to make them profitable to their owner.

The lower apartment of the hive, where they store their food, raise their young bees, and perform their ordinary labors, should hold as much as a box of thirteen inches and one-half or fourteen inches square, or one bushel.

Nature has fixed certain principles in the peculiar instinct of the honey-bee, which are unalterable by human wisdom.—(See General Observations.)

If the hive is much larger than the one already described, the bees cannot work to advantage, and will not be likely to fill the drawers in several years if they swarm, and their prosperity depends principally on swarming, for it is their nature to do so, and any management which counteracts their natural habits, impedes them in their labors, and renders them of little profit to their owner; and they finally run out, or come to an end in a few years.

Bees in large hives never swarm; and those in hives much less than the one already described do but little else than raise young bees, and lay up a sufficient quantity of food to supply them through the coming winter, and are more liable to be robbed.

All hives of bees that swarm, are liable to swarm too much, and reduce their colonies so low in numbers as to materially injure them, and is

frequently the cause of their destruction by the moth, which is more particularly explained in remarks on Rules 2 and 10.

The chamber of the hive should hold about two-thirds as much as the lower apartment, and be made perfectly tight, so as to exclude all light from the windows of the drawer, and also to protect them from the chilly night-air:—otherwise, the cold air of night so alters the condition of the animal in the drawer, that the bees are compelled to lie in idleness until an equilibrium can be formed in the box the following day. Bees make comb in the night, and fill up the cells with honey in the day-time. Comb is made of honey, ruminated in the stomachs of the working bees: it exudes from the interior of its abdomen, and forms in little flakes betwixt its folds, and is taken by the bees in their mouth from thence, and weaved on to enlarge the cells and fill up their tenement with comb. Now, as it requires an exact uniformity of heat in all cases to make comb and enlarge the cells of a colony, we are able to account for the fact that bees will store much more honey in drawers than *caps*, which are more exposed to the cold and damp air of night.

Drawers should be small, like No. 2, 4, and 8, for all purposes except such as are used for multiplying colonies and transferring swarms, which should always be large, like No. 1.

Hives should have cleats on their sides, so as to suspend them in the air, some distance from the floor of the apiary, the better to secure the bees from destruction by mice, reptiles, and other vermin.

The back side, or rear of the lower apartment of the hive, should slant forward so as to render the same smaller at the bottom, the better to secure the combs from falling when cracked by frost, or nearly melted in hot weather.

No timbers or boards should be placed very near the lower edge of the hive, because it facilitates the entrance of *depredators*. That the back side should slant forward, is obvious from the fact, that bees generally rest one edge of their combs on that side, and build towards the front in such a manner as to enter upon the same sheet where they intend to deposit their stores, when they first enter the hive, without being compelled to take any unnecessary steps.

The bottom of the hive should slant downward from the front, so as to afford the greater facility to the bees to clear their tenement of all offensive substances, and let the water, which is occasioned by the breath and vapor of the bees, run off in cold weather. It also aids the bees very much in preventing the entrance of robbers.

The bottom board should be suspended by staples and hooks near each corner of the hive, in such a manner as to afford a free entrance and egress to the bees on all its sides, which will better enable them to keep their tenement clear of the moths.

There should be a button attached to the lower edge of the rear of the hive, so as to enable the apiarian to govern the bottom board in such a manner as to give all the air they need, or close the hive at pleasure.

The hive should have two sticks placed at equal distances, extending from front to rear, resting on the rear, with a screw driven through the front into the end of the stick, which holds it fast in its place, and a ventilator near the top of the lower apartment of the hive, to let off the vapor which frequently causes the death of the bees in the winter by freezing.

The door to the chamber should be made to fit in the rabbings of the same against the jams, in such a manner as to exclude the light from the windows of the drawers, and also to prevent the entrance of the little ants. It should also be hung by butts, or fastened by a bar, running vertically across the centre of the door, and confined by staples at each end. The under side of the chamber floor should be planed smooth, then scratched with a sharp scratch, so as to raise little ridges, to enable the bees to hold fast, otherwise they may fall suddenly upon the bottom board, which may induce them to leave the hive and flee to the woods. That the inside of the hive should be made smooth is evident, from the fact that comb

adheres much more firmly to a smooth board than it does to the small fibres, or splinters which are left by the saw, and the comb is less likely to drop.

Some good managers of bees, have recommended rubbing the inside of the sides of the hive with bees-wax, to enable the bees to hold fast until they had secured the comb at the top of the hive, where they always commence their labors. The old custom of washing the hives with salt and water, sweet herbs, and other substances, to give them a pleasant effluvia, should be speedily abolished.

When bees die, the hive should be cleared of its contents, and scraped out, and the chamber rubbed with a cloth wet in clear water, then set in its place in the apiary, and there let it stand until wanted for use. An old hive thus prepared, is better than a new one for the reception of a swarm of bees. The task, which is arduous and difficult in attaching the comb to the new wood, in this case, has been accomplished by the previous swarm.

Note.—It is found by experiment that the combs in all hives, under two years old, that are robbed, die of starvation, or otherwise, may be preserved for a new swarm, which forwards the labors of a new colony, nearly half, if the combs remain in a good state of preservation. The apiarian should examine before using, to see that the hive is clear from spiders and cobwebs.

There should be three sheet-iron slides, which answers for a whole establishment. One of which should be nearly as wide as the chamber, and one or two inches longer than the length of the chamber. The other two should be the same length of the first, and half its width only.

All hives, and all their appenlages, should be made exactly of a size, and shape, in the same apiary. The trouble of equalizing colonies is far less than it is to accommodate hives to swarms. Much perplexity, and sometimes serious difficulties occur, where the apiarian uses different sized hives, and drawers. But this part of the subject will be more fully discussed under its proper rule.

A perfect snow-white is the best color for a bee-hive. All shades of colors are conductors of heat and cold, in proportion to their proximity towards a perfect black. It is better to let the hive remain the color of the wood than paint any shade of color, which may be the cause of melting the combs in summer, or freezing the bees in winter. To preserve the greatest uniformity of temperature in the hive, both summer and winter, the apiarian will find it for his interest to make all his hives of plank at least one and a half inch thick, or boards three-fourths of an inch thick, doubled in such a manner as to exclude insects from the joints.

RULE II.

On Swarming and Hiving.

The apiarian, or bee-owner, should have his hives in readiness, and in their places in the apiary, with the drawers in their chambers, bottom up, so as to prevent entrance.

When a swarm comes forth, and has alighted, cut off the limb, if convenient, (unless the hive is used)—shake it gently, so as to disengage the bees, and let them fall gently on to the table, board or ground, (as the case may be.)—place the hive over them before many rise into the air, taking care at the same time to lay one or more sticks in such a manner as to raise the hive so as to give the bees rapid ingress and egress. If the bees act reluctantly in taking possession of their new habitation, disturb them by brushing them with a goose-quill or some other instrument not harsh, and they will soon enter. In case it is found necessary to invert the hive to receive the bees, (which is frequent from their manner of alighting,) then first secure the drawers down to the floor, by inserting a handkerchief or something above them: now invert the hive and shake or brush the bees into it: now turn it gently right end up to the table, or other place, observing the rule aforesaid.

REMARKS.—Bees swarm from 9 o'clock in the morning to 3 o'clock in the afternoon on a fair day, differing in the season according to the climate. In Vermont, they generally swarm from the middle of May to the 15th of July: in late seasons come later. I have known them to swarm as early as 7

in the morning, and as late as 4 in the afternoon I have also known them to come forth when it rained so hard as nearly to defeat them by beating down many to the ground which were probably lost from their colony; and I once had a swarm come forth on the 16th day of August.

Two reasons, and two only can be assigned for the swarming of bees. The first is want of room and the second, to avoid the conflict of the Queens. It may be possible that a swarm may come forth before the hive is full of comb, but from more than forty years observation, I have never seen an instance of it, when the hive was not full of bees at the first swarming. This is always the cause of their first swarming, unless the stock had lost their Queen previous to swarming, in which case, the colony assume the condition of a hive that has once swarmed, and may come out before the hive is full of comb or bees.

The Old Queen goes out with the new colony, and leaves the remaining stock without a head, (or female.) But nature has supplied them with the instinct, and they commonly have the means of repairing the loss, which a new colony, unaccompanied by a Queen, could not obtain. They have the larvæ or grub of the common worker, and the power to convert it to a Queen. They soon discover their loss, and immediately set themselves to work to fill the vacancy, in constructing several royal cells into which they remove the young grubs which would have become workers, and by feeding them on royal jelly, in a few days they have a Queen. The eggs are commonly laid in liters, about five times a week, during the breeding season; and the bees, to be more sure of succeeding in their experiments, divide themselves into two squadrons, and undertake to make more than one, by taking them from different liters, and I also avoid the confusion of having a number of Queens hatch at the same time. This fact accounts for hearing more than one Queen at the same time. Two Queens cannot exist together long in the same hive. Nature has implanted an implacable hatred betwixt them, and as soon as the notes of the first-hatched Queen are heard, they are answered by tones of defiance by the nymph Queen younger, which is yet in her cell, and has not seen the light; and if not prevented by the workers, her elder sister tears her from her cell, and immolates her to her love of undisputed sway. But if the bees should be sufficiently numerous to protect their Queen of their own making, for whom, as the work of their own hands, they seem to have a blind attachment, the elder Queen collects her followers sallies forth, and seeks a new habitation. This is the cause of second and third swarmings which take place, and which frequently so weaken the hive as to cause many of the evils to which bees are subjected, for which I think I have discovered the remedy. See remarks on Rule 10.

If the second swarm does not come out before the 17th day, there is reason to believe that the Queen has disposed of all her competitors, and there will be no further swarming that season. The first Queen is usually heard the 8th day after the first swarming.

I know of no rule by which the exact day of their first swarming can be known with certainty. The apiarian will estimate near the time by the numbers of bees in and about the hive, as it will become very much crowded.

The day of second swarming, and all after that during the same season, may be most certainly predicted, as follows: Listen near the entrance of the hive in the evening. If a swarm is coming forth the next day, or in a short time the Queen will be heard giving an alarm at short intervals. The same alarm may be heard until swarming takes place, or one Queen is destroyed by the other. The observer will generally hear two Queens at a time in the same hive—the one much louder than the other. The one making the least noise, is yet in her cell, and in her minority. The sound emitted by the Queens is peculiar, differing materially from that of any other bee. It consists of a number of monotonous notes in rapid succession, similar to those emitted by the mud-wasp when working her mortar, and joining it to her coils, to raise mud-wasps. If, after all, the weather is unfavourable to their swarming several days while in this peculiar stage, they will not likely to swarm again the same season.

Bees are very tenacious to preserve the lives of their sovereigns, particularly those of their own raising; and when they find they have more than one in the hive, they will guard each so strong as to prevent, if possible, their coming within reach of each other. They being thus strongly guarded to prevent the fight, is unquestionably the cause of their giving the alarm, as described in the foregoing article. The knowledge of the existence of another Queen in the same hive, inspires them with the greatest uneasiness and rage. And when the oldest one finds herself defeated in gaining access to her competitor, she sallies forth with as many as see fit to follow her, and seeks a new habitation.

Before the bees sally forth, they fill their sacks with honey, and some of them carry bread on their legs, which supplies their wants, till they have found a new residence, and laid the foundation of their cells. In a very crowded state of the hive, many bees are sometimes compelled to lie out before the Queen leaves, and in the confusion of swarming, not being apprised of her intention to depart, leave without filling their sacks, and this is one cause of the irritability they manifest. This difficulty is obviated in the Vermont Hive. Its drawers furnish them room for their labours till the Queen and her followers have finished their arrangements, and are not compelled to leave empty-handed.

Another reason why bees are sometimes irritable, and are disposed to sting when they swarm, is, the air is forbidding to them, by being cold, windy, damp, extremely hot, or otherwise, so as to impede them in their determined emigration. In such cases, the apiarian should be furnished with a veil, made of millinet, or some light covering which may be thrown over his hat, and let down so low as to cover his face and bosom, and fixed in such a manner as to prevent their stinging. He should also put on a pair of thick woollen gloves or stockings over his hands, thus managing them without the least danger.

Experience and observation have taught that the Queen leaves the old stock first, and her colony rapidly follow. They fly about a few minutes, apparently in the greatest confusion, until the swarm is principally out of the hive. They then alight, generally on the limb of some tree, shrub or bush, or some other place convenient for them to cluster in a bunch not far from the old stock, and make their arrangements for a journey to a new habitation. Perhaps not one swarm in a thousand know where they are going, until after they have left the old stock, alighted, and formed into a compact body, or cluster; and not then, until they have sent off an embassy to search out a place for their future residence. Now, if the bees are hived immediately after they have alighted, before they send off their embassy to seek a new tenement, they will never fly away, admitting they have sufficient room, (for it is want of room that makes them swarm in the first place,) and their hive is clear of every thing that is offensive to them.

It is proper then that bees should be hived immediately after they have clustered in a body. If this is not done before they have had time to send off an embassy to select a proper habitation, they should be immediately moved to the apiary, or to some place several rods from the spot where they alighted, in order that they may not be found by their messengers at their return. That bees do send forth messengers to seek out a new residence after they have swarmed, and clustered in a body, is evident from the fact that many swarms have been known to enter and take up their abode where a few bees were seen a short time previous. They likewise have been known in frequent instances to remain over night, and even several days and nights, before they left for the woods; and furthermore, when the bees go direct from the old stock, the bee-hunter takes their course, by setting his compass, and fixing the old stock as his starting point; for bees always take a direct and straight course towards their new residence, when they first start. Now if the hunter takes the old stock as his starting-point, in connexion with the place where the bees clustered in a body, he will run as far from his bees as east is from any other point of the compass.

Although bees have several thousand eyes, yet they are fixed in their places in their head, like so many suns, and as they do not turn in their sockets, like the eyes of men and quadrupeds,

they are unable to traverse a crooked path without extreme difficulty: and when their sight is entirely obstructed for any length of time, they are compelled to alight.

When bees leave for a new residence that is unknown to their owner, several miles distant, (and it is believed that bees even see the tree they have selected for their residence, among many others,) and if the wind blows so strong as to vary them from their course, if their observation is not impeded, they will go direct to it: but if a bill intervenes so as to entirely obstruct their sight, they may be usually found clustered in a body not far from the direct line, before they descend the hills on its opposite side. It is believed that the wind, in such cases, usually puts them out of their course; and although it may be but a few steps, yet the bees get so confused that they are compelled to re-organize before they can proceed on their journey.

Experience has taught it is best to remove the new swarm to the place where it is intended to stand during the season, immediately after hiving. They are creatures of habit, and very soon become associated with the objects and places about them, and if their hive and companions are not found in the usual place, they have no means of finding them. More or less bees are lost by every removal, and the longer they remain in the place where they are hived, the more will be lost when removed.

No confusion or noise which is uncommon to the bees should ever be made during their swarming or hiving. The only effect of noise, ringing of bells, &c., that I could ever discover, was, to render them the more hostile and unmanageable.

A clear hive is all that is needed for a swarm of bees, with careful and humane treatment.

A cluster of bees should never be shook, or jarred any more than merely to disengage them from the limb or place where they are collected, nor should they fall any great distance, because their sacks are full when they swarm, which render them clumsy and harmless, and harsh treatment makes them irritable and unmanageable.

When bees go from the old stock direct to the woods, without alighting, it is when they lie out of the hive before swarming. It is believed that they, being clustered in a body on the outside of the hive, assume the organization of a regular swarm, and their embassy is sent forth to search out a new residence before the swarm leaves the old stock. This difficulty is obviated in the Vermont Hive. Instead of lying out before swarming in idleness as in the old box, they go up into the drawers, and are constantly employed in depositing the fruits of their labours, and are less liable to organize in a body before swarming. It is indeed true that bees have been known to leave and go directly to the woods when they did not lie out before swarming. But, in all such cases with whom I am conversant, an attempt to swarming had been made previous, and the bees had returned to the old stock.

Bees become associated with the human family, and will not often flee to the woods, unless they are neglected by their owner, or driven way by bad management. One of the principal causes of fugitive swarms is, want of vital air in the hive. The heat of the sun exhorts the air in the hive of its vitality in a few minutes, in a very hot day, and the bees are compelled to leave it. In 1833, many swarms were known to leave green trees where they were not well shaded by their own branches, and that of other trees. Special care should be exercised by the apiarian that the rays of the sun are excluded from the hive. Animal heat in the hive is absolutely necessary to enable the bees to make comb; but *pent* heat is fatal, both to the lives of the bees, and their work. An umbrella should be held over the hive during hiving the bees in a hot day, unless it can be otherwise shaded.

No inconvenience will result from letting the bees into the drawers, in first hiving them, if the colony is so large that a majority of them cannot occupy one of them.

Bees commence making their comb where the largest proportion of the colony have sufficient room to work. Now, if a majority of the bees

WATER ON FARMS—CEMENT PIPES.

(From the Albany Cultivator.)

Those only who are deprived of the advantages of good watering places on their farms, can fully appreciate the privilege they confer, or the amount of suffering they prevent, when the farm stock have no drink except such as is dealt out to them once or twice a day from a well, or are obliged to be driven a distance to a pond or a stream. It is surprising how little attention is paid to this subject of water, when so much is depending upon it, and when so little expense would, in most cases, provide a remedy for the evil. Wells, artificial ponds, &c. may be resorted to, when nothing better can be provided; but experience proves that running water, such as is furnished by springs, or streams, and which can be conducted to the points where it is most wanted, is not only the best for stock, but far the most economical in the end. There are few, very few farms, on which water works of this kind may not be constructed, and the water conveyed in pipes wherever desired; still we have known men bring their water for domestic use, year after year, in barrels or in hogsheads, when nothing but a little energy or skill was required to bring an abundant supply of pure spring water to their doors.

For the purpose of conveying water from a distance, pipes of various kinds have been resorted to, of which the most common are lead, wood and cement. Of these we give a decided preference to cement, unless used in circumstances where a great pressure is unavoidable, when perhaps wood or lead might be substituted. That a cement pipe properly constructed will not resist any ordinary pressure, is effectually disproved by one we have in use for conveying water to our buildings, and on which a perpendicular pressure of forty-five has not the slightest effect. We dislike lead as a conductor of water for domestic purposes, because there are few springs that do not contain salts, of some kind sufficient to have a decided corrosive action on the lead, as such pipes on examination almost invariably show, and lead is too active and dangerous poison to be trusted in the human system in any form. Wood is free from the objection attached to lead, but its want of durability is a serious obstacle to its use. In passing through orchards, or meadows, roots will insinuate themselves through the minutest crevices, and once entered will spread and ramify, so as to speedily fill the pipe and obstruct the passage of the water. Clover is, if possible, more injurious to wood pipes than the roots of trees, and we have known an aqueduct ruined, and taken up, from the obstruction caused by the roots of this plant. Observation and experience both concur in inducing us to prefer a pipe made of cement or water lime and sand, to any other material for conveying water. There are several reasons for this preference. The first is the purity and sweetness of the water so conveyed. If the water is good at the source, it is good at its delivery; no poisonous metal, or disagreeable wood taste have been added. A well-made cement pipe, is in fact, a calcareous sand stone, and preserves water as pure as would a pipe of that stone. In the second place a cement pipe is durable. Lead usually soon fails from corrosion, and wood from decay; a cement pipe does neither. If well bedded, and at such a depth as not to be disturbed from the surface, there seems no reason why they should not last forever. Indeed, the cement aqueducts of Rome and Jerusalem, after the lapse of some two or three thousand years, furnish pretty good evidence on this point. In the third place, cement pipe is the cheapest. It is the cheapest, because the first outlay in most cases is less than that of any other pipe, and because when once done well, it is done for all the time, accidents excepted.

We have had some inquiries as to the best materials, and the best methods of making cement, both for cisterns and for water pipes, and all such we propose to answer here. The best material for cement is the water lime of Ulster or Onondaga; but it should be of undoubted quality, fresh, or packed in air tight barrels, or it will be little better than ordinary good quick lime. As few are aware of the extent to which the manufacture of water lime is carried in this state, we will remark here, that the researches connected with the geological survey of New York, showed, that in 1839, six hundred thousand bushels were manufactured in

Ulster county, and an immense quantity is annually manufactured in Onondaga and Madison counties. To prepare the cement, two bushels of very coarse sand or even fine gravel, sharp and clean from all dirt or loam, is mixed with one bushel of lime. The cleaner and sharper the sand, the firmer and better the cement; great attention should therefore be paid to this part of the operation, as well as to the quality of the lime. For cisterns, or other purposes where water lime is used, the same precautions will be found essential, and if observed failures can scarcely occur.

There are several methods of laying down cement pipe, but all so simple and easy, that any one may perform the operation; although practice enables one to work water lime pipe so much more perfectly and readily, than an experienced hand should be obtained when practicable. The first thing is to provide the water to be conducted. If a single spring, or a stream, it may be considered ready for use; if from several springs, they must be conducted to a common reservoir; and if the water is to be derived from wet grounds, deep covered drains centreing at some convenient point will be required. From this point, or reservoir, the water is to be conducted in cement pipes to the places where it is wanted. The ditch for a water pipe should be not less than two feet deep, and if intended to convey water for the use of a family, should be still deeper; for, if laid shallow, the heat of the earth when the water flows any distance from the spring, renders it disagreeably warm in summer. The width of the ditch may be eighteen inches or two feet, a deep trench requiring more width than a shallow one. Where intended for the use of stock only, pipes so low as to be beyond the reach of frost, the plough, or pressure from passing bodies, are sufficient for every purpose. The bottom of the trench should be level, free from holes or soft places, as such would permit unequal pressure on the pipe, and endanger its breaking.

We have known two kinds of implements used for laying the pipe. In one of these cases, firm but flexible harness leather was sewed into a tube four or five feet in length, of the diameter it was intended to give the pipe, and then rammed full of bran. A covering of cement an inch thick was placed on the bottom of the trench, this cylinder placed on the middle of that, and a covering of cement well worked over it with a trowel, or by hand, for twenty to twenty-four inches. The cylinder was then drawn forward, while the cement was held back by the other hand, and thus the pipe was rapidly and perfectly formed. Two narrow boards served to confine the cement placed on the ground for the bed to the proper width of four or six inches, according to the bore of the pipe, and thus left the completed aqueduct of a square form on its exterior surface. In the other instance the implement for forming the pipe was a round rod turned perfectly true, some two feet in length, and perforated from end to end to allow the passage of a strong cord. To this cord is attached a piece of wood ten inches long, of the same size as the rod, turned perfectly smooth, and tapering to each end. The cement is laid over the long rod, well worked down by a trowel, and when sufficiently covered is drawn forward, leaving the short rod attached to the cord a short distance in the rear. As the work advances, and the cement sets, which, if good, is very quickly done, the short rod is drawn forward with the effect of rendering the bore of the pipe uniform in its size, perfectly smooth, and free from every thing to interrupt the flow of the water. Either of these methods, with good materials, will produce an aqueduct sound, free, and which, in a few weeks, will become almost as hard as sandstone. Much, however, is depending on the thoroughness with which the mortar, or cement, is worked round the rods that form the bore. Care must be taken not to allow the rods to remain too long before they are drawn forward, as the cement, when partially set, may in that way be cracked and injured. Should such cracks occur, the work may be made safe by immediately covering the place with fresh cement.

The cement should be used as fast as prepared, or a firm pipe need not be expected. If kept dry during the construction, the work will be the better, for though such cement will in time harden under water, dryness greatly facilitates that process. If

necessary, water may be allowed to flow through the pipe as fast as constructed; but it is best to avoid it if possible, and in no event must any pressure be allowed, as that would certainly destroy the work. The pipe should remain from six weeks to two months before it is filled with water, or pressure permitted to take place. A piece of led pipe, of suitable bore, should be used to connect the cement pipe with the hydrant or penstock, as without such precaution frost or accidental concussion might fracture the cement. If it be necessary for any part of the pipe to sustain a greater pressure than another, that part should receive a second layer of cement, well worked upon the first.

When the pipe is laid, it should be uncovered a few days to set, and then fine earth should be thrown upon it, with water to dampen it, so as to have it pack close about the pipe. At first the filling of the trench should proceed carefully; but the whole should be packed close, so as to prevent all danger of breaking. As to the expense of cement pipe, we have the authority of a man well acquainted with the business, for saying that of one inch bore aqueduct he can lay 10 rods per day, and 13 of three-fourths inch per day. Lime of good quality can be procured for 16 cents per bushel at the mills, and allowing 6 cents per bushel for the sand, if the work was charged at \$1.50 per day, it would be about 12 cents per rod, and the expense of the material and laying the pipe some 37 cents per rod. The cost of the trench would depend on the size and depth, and of that each can judge for himself. One dollar a rod for the whole expense would be a liberal estimate. Lead pipe would cost from \$1.50 to \$1.75, according to size, and wood could not be afforded as low as cement. We think no farmer who wishes to construct an aqueduct, will regret that he has made choice of water lime instead of lead or wood; and every man who has not water convenient on his farm will do well to see whether he cannot obtain it in this way, at an expense bearing no comparison with the benefits that would accrue.

GRAFTING.

The principle fault to be discovered in the various descriptions we have of grafting, is, their not sufficiently describing the parts of the business. A first rate hand will set from three to four hundred per day, and not lose more than ten out of a hundred.

Cutting Scions.—Scions may be cut from the fall of the leaf in autumn, till the buds begin to open in the spring. Cut your scions from trees you are acquainted with, or obtain them from persons who can be depended upon. Much time and money is expended in cultivating fruit of an inferior quality, which discourages the owner from continuing the business of grafting. The whole fault consists in an improper selection of scions. It should always be remembered, that it costs no more to raise the best fruits than the worst. For example, it costs no more to raise apples that will fetch seventy-five cents per bushel and get them to market, than it does those that will fetch but twelve cents. The latter would not pay even for transportation any distance.

In cutting scions, select thrifty shoots of the last growth, cut them off about three-fourths of an inch below the circle where the last year's growth commenced. Do not take scions that have been much shaded, or from the interior of a tree-top, however thrifty they may look; neither the wood nor the buds are sufficiently matured to render them safe for use. Tie each sort in a bunch by itself, and mark them. Make the same mark in a book and annex the name of the fruit. If you graft in an orchard mark in the bark of the tree, if in a nursery, put a stake with the name at the end of the row, or by the tree grafted. By this means you can always obtain the name of the fruit.

To keep Scions.—Select a dry piece of ground and dig a square pit about two feet deep, of sufficient size to contain your scions; line it with boards at the bottom and the sides to prevent them from coming in contact with the earth; lay a board over the top and cover the whole with earth about a foot deep; lay boards over the mound to turn off the rain, for should the wet penetrate, the scions will be spoiled. Remember that these scions cut

after the circulating of the sap, cannot be transplanted or so safely kept as those cut earlier.

Setting the Scions.—In a nursery you may safely graft all the trees that are half an inch in diameter at the surface of the ground. Those of a larger size graft at such a distance above the ground as will give a stump of about three-fourths of an inch in diameter.

The best time to graft in an orchard is the second or third year after the trees are transplanted. If they are less than an inch in diameter, cut from five to six feet from the ground, cut off the whole top and set the scions in the stump. If they both live cut away one the second year.

In grafting large trees, select the leading and finest branches, and cut them off where they are from three-fourths of an inch to three inches in diameter. Your tools must be a saw, a pruning knife, and a soft iron wedge about six inches long for opening the cleft in the stump. Saw off the branch where it can be split, and smooth the top with your knife, then split it by laying your knife across the centre and driving it down with the wedge the width of the blade, then with draw the knife and insert the wedge to open the cleft enough to admit the scions. If the stump or branch is three-fourths of an inch in diameter, always set in two scions, one on each side. If they both live, one may be cut away the second year, but if in the top of a large tree, both might be left.

To prepare the Scion.—Cut the lower end in the form of a wedge about three-fourths of an inch in length, and the side to be placed next the centre of the stump to be thinner than the other, in order that the bark of both stump and scion may come in complete contact when the wedge is withdrawn. Cut the wedge of your first scion at the circle where the last year's growth commenced, and at such length as will leave not less than two nor more than three good buds above the top of the stump. Cut the wedge of your next scion at the first good bud above where you cut off the first, in a manner not to injure the bud. The scion will receive nutriment from the stump only at such points where the coats of the bark of the stump and scion come in actual contact. In setting the scion, place the lower point a little within the outer surface of the bark of the stump, which will generally bring the minor coats of the bark in contact in three out of four places. If they agree but in one place, the scion will probably live.

Wax for Grafting.—Melt three parts of resin, two of beeswax, and one of tallow, together. Pour this, when melted, into cold water, a pound at a time. Having rubbed your hands with lard, work the wax in them till it is pliable, and when the water is forced out of it, it is ready for use, and will remain on the trees, protecting the stump from the weather, for three years. Use the wax with the fingers (having rubbed them with lard to prevent adhesion) sufficiently warm to spread easily; cover the top of the stump about the thickness of a cent, and the split as far as it extends, somewhat thinner.

The time for grafting depends much upon the season; but the best is when the buds first begin to open. Scions will live set any time after the sap freely circulates, and till the apples are as large as musket balls.

Pruning.—In grafting most trees, the whole top may be safely removed, but it is bad policy to remove the top of a large tree in one year. Young sprouts should all be taken off yearly, especially those near the scions.—*Farmer, and Gardner's Almanac.*

CULTURE OF LUCERNE.

We apprehend that this valuable grass has not received that attention from our farmers that it deserves. The luxuriance and rapidity of its growth, the avidity with which it is eaten by all domestic animals, and the ease with which it is in general cultivated, would seem to point out as one of the best of grasses, especially where soiling is desirable or practicable. In our last *Cultivator*, we gave an account furnished by David Thomas of its success in the culture of this plant, and the following which appeared in the *American Traveller*, is strong additional testimony in its favour.

Mr. Pinney is not the man to waste his money on his land in the culture of valueless plants.

"On a visit to Mr. Pinney's farm in Lexington, Mass., about the middle of June, we saw a piece of lucerne or French clover, as it is often called, which had been cut three times for the purpose of soiling. Soiling is a term applied to the practice of cutting herbage crops green, for feeding live stock; and for this purpose, lucerne is considered admirably adapted. One acre is sufficient for five or six cows, during the soiling season. It is fit for the scythe in congenial soils, about the 10th of May—may be cut every twenty or twenty-five days, and is said to yield from five to eight tons per acre. Mr. Pinney's lucerne was sown in drills, and looked well. A very deep, rich, friable, sandy loam, is the soil in which it grows best. It should be sown early in May, and be subject to frequent and careful culture. Mr. Pinney appeared to be well satisfied with it."—*Albany Cultivator.*

LEICESTERS AND SOUTH DOWNS.—At the meeting of the Smithfield Club in London, in December last, Mr. Hayard, a noted farmer and stock breeder, made some interesting remarks about sheep. He said the Leicester breed, founded by Bakewell, had been the means of improving every other long wooled breed in the kingdom. He was an extensive breeder of this sort of sheep, and the only fault with them was, they had too much fat meat in proportion to the lean. On this account they had not latterly sold as well in Smithfield market, as the "blackfaced sheep," (the Scotch breeds, South Downs, &c.) For this reason he had last season crossed many of his Leicester ewes with a South Down buck, by which he hoped to get more lean meat in proportion to the fat. He said the world could not produce sheep of such beautiful symmetry as the pure Leicesters, and that it was certain they had "one great recommendation over the South Downs, for a greater weight of meat per acre, could be produced with the Leicesters." We observe that several farmers in England are crossing the Leicesters with the South Downs; but in general they do not breed from the cross—they keep both breeds pure, and kill the cross-breed stock. The object is to suit the quality of the meat to the market.

TO YOUNG MEN.—TRUTH WELL SPOKEN.

It is a sore evil that labor, so essential to health, vigor, and virtue, is generally regarded with aversion. Even those who boast that they live by straight-forward hard work are almost uniformly seeking to escape from their condition. Even the substantial, thrifty farmer, whose life is or might be among the happiest, is apt to train his darling son for a profession or put him in a store. He laudably wishes to put him forward in the world, but he does not think that half the time and expense bestowed in making him an average lawyer or doctor, would suffice to make him an eminently intelligent and scientific farmer—a model and blessing to the whole country. Why will not our thrifty farmers think of this? The world is sufficed with middling lawyers and doctors—the gorge even of Iowa rises at the prospect of a new batch of either; of tolerable clergymen there is certainly no lack, as the multitude without societies bears witness, and yet here is the oldest, the most essential and noblest of employments, on which the full blaze of science has hardly yet poured, and which is to-day making more rapid strides, and affords a more promising field for intellectual power than any other, comparatively shunned and neglected. Of good, thoroughly educated, at once scientific and practical farmers, there is nowhere a super-abundance. Everywhere there is a need of this class, to introduce new processes and improve old ones, to naturalize and bring to perfection the plants, grains, fruit &c. we all import from abroad when we might better produce them at home—to introduce a proper rotation and diversification of crops—to prove and teach how to produce profitably the most grain to the acre—in short to make agriculture the pleasing, attractive, ennobling pursuit it was originally intended to be. There is no broader field of usefulness—no surer road to honorable eminence—the time will come when, of the men of the last

generation, Arthur Young will be more widely honored than Napoleon. But while the true farmer should be the most thoroughly educated and best informed man in the country, there are many of our old farmers, even, who will cheerfully spend a thousand dollars to qualify one son for a profession, yet grudge a hundred each to educate the three or four less favored who are to be farmers. There are farmers who cultivate hundreds of acres and never look into a book on agriculture, though they would not countenance a doctor or clergyman who studied no works on medicine or theology. What a world of mistakes and inconsistencies is displayed all around us!

There are thousands in all our cities who are well employed and in good circumstances; we say, I t these continue, if they are content, and feel certain that the world is better in their daily doings. There are other tens of thousands who must stay here, as things are; having no means to get elsewhere, no skill in any arts but those peculiar to city life, and a very limited knowledge; these must stay, unless something should transpire out of the common course of events. There are other tens of thousands annually arriving from Europe, who, however valuable acquisitions to the country, must contribute to glut the market and depress the price of labor of all kinds in our city—some of these must remain here till they can obtain means and knowledge to go elsewhere. But for young men of our own happier agricultural districts to crowd into the great cities or into villages, in search of clerkships and that like, is madness—inhumanity to the desolate—moral suicide.—Who can think of states are a waste wilderness, and all our markets of trade overflow with eager seekers for employment, let all escape from cities who can, and all who have opportunities to labor and live in the country, resolve to stay there.—*Genesee Farmer.*

ALUM AND CHILDREN vs. FIRE.—We commend the following to the attention of parents just now, when we scarcely open a paper but a melancholy statement of "a child burnt," attracts our observation:

"The danger and difficulty can very easily be avoided by the use of alum.

When clothes are washed they should be rinsed out of alum water—the solution should be tolerably strong. If the clothing, which has been newly washed, should require starch, the alum may be put in the starch water.

"Alum should be used on all occasions, it renders the clothing fire proof. All clothing about a house or steamboat made of cotton should be impregnated with alum. For instance, bed and window curtains, &c., such articles generally having much fringing about them.

"This hint if attended to, will prove a perfect safety to clothing from fire."

WATER-PROOF GLUE.—Melt common glue in the smallest possible quantity of water, and add, by drops, linseed oil that has been rendered *drying* by having a small portion of litharge boiled in it, the glue being briskly stirred when the oil is added.

Glue will resist water, to a considerable extent, by being dissolved in skimmed milk.

The addition of a finely levigated chalk, to a solution of common glue in water, strengthens it, and renders it suitable for signs, or other work that is exposed to the weather.

A glue, (or cement) that will hold against fire or water, may be made by mixing and boiling together linseed oil and quicklime. This mixture must be reduced to the consistency of soft putty, and then spread on tin plates and dried in the shade, where it will dry very hard. This may afterwards be melted like common glue, and must be used while hot.—*Am. Mechanic.*

EASY METHOD OF MANAGING BEES.

(Continued from page 59.)

can get into one of the drawers, they will begin to make comb there, (for they always commence at the top and work down,) of course they will raise young bees and deposit bread in the drawers. If the swarm is so large as to be unable to work in the drawer, there is no danger of letting them in; and yet, if the swarm is very large, there may be danger, if the bees are prevented from entering the drawer, because they sometimes go off for want of room in the lower apartment. I therefore recommend letting the bees into the drawers at the time of hiving them, in all cases, except when the swarms are small—then, the rule should be strictly adhered to: notwithstanding I have hived hundreds of swarms for seventeen years last past, and have not lost a single swarm by flight to the woods, yet I hear of some losses of this kind, which render these remarks necessary. My practice in hiving is, to get the bees into the shade hive them as soon as possible, hang on the bottom board, fasten the same forward by means of the button so as to prevent the escape of any of the bees except through the mouth of the hive, place the same immediately where I intend it to stand through the season. Let the bottom board down three eights of an inch on the third day after swarming, and turn the drawers four days after hiving, (unless they are turned at hiving.)

Occurrences have been heard of where there would seem to have been variations from the foregoing rules concerning swarming, to wit: Bees have been known to swarm before the hive is full of bees or comb, and then, swarm again two or three days after. Now, there is reason to believe that the old stock lost their Queen before swarming, and the bees assumed the condition of a hive that had once swarmed, and sent forth another to avoid the conflict of the Queens. Very large colonies have been known to swarm out several bushels of bees under such circumstances. Variations from the common rules of making Queens, more frequently occur as follows, to wit: When the old Queen goes out with a swarm, she leaves without providing more than one class of grubs, (*larva*), which are capable of being converted to Queens; and as the bees always make a plurality of them, they will all be of an age; and in the confusion of swarming, all that are hatched will sally out, and the hive left destitute of the means of repairing their loss. This accounts for seeing more than one Queen in some small swarms, or there may be more than one class of grubs in the hive after first swarming, and the bees make some Queens from each class. There more than one Queen may be seen with a swarm; for all the Queens leave, that are hatched. The swarming season usually closes in about seventeen days after its commencement, and the bees seem to possess a peculiar instinct in their nature, which teaches them that the season is too far advanced at this time for them to form new colonies with safety; and they will not permit any of their Queens to depart. I have observed in repeated instances, very compact bunches of bees on the bottom board, some larger than a hen's egg, about the hour of swarming. On examining them, by separating of the bees in my hand, I always found the Queen in the centre, unhurt, yet nearly smothered. The bees will commit no violence upon her person, other than pile on, and cluster around her in such a manner as to exclude from her all the vital air, and she dies of suffocation.

MURRAIN.—John Grant, in a communication to the *Mark Lane Express*, gives the following as "an almost infallible" cure for Murrain, if applied on the first appearance of the disease:—

Sal prunelle, - - -	2 oz.
Stiptic Powder, - - -	2 "
Balsam Copavia, - - -	2 "
Nitre, - - -	1 "
Glauber Salts, - - -	4 "

Dissolve the whole in half a gallon of table beer, with half a pound of soft sugar added, and give as a drench; the good effects of which may be visible in twenty-four hours; after which, let the sick cattle be put in a field where there is plenty of water, as a desire to drink is one of the first symptoms of convalescence.

(From the Farmers' Cabinet.)

FOOD FOR CATTLE.

At this time, when the correct principles of farming and feeding, as ascertained by chemical analysis, are a subject of general inquiry, I have thought the following article on "Food for Cattle" would be interesting to the readers of the Cabinet. It appears to me that a far greater value has been attached to some esculents containing a very large portion of water, such as turnips, beets, carrots, potatoes, &c., than they deserve; whilst others, in which the proportions of organic matter are very great, such as peas, beans, oats, barley, wheat bran, &c., have been too much neglected. It is quite contrary to the received opinion, that 100 lbs. of the skin of wheat-bran—is as valuable for cattle food, as 100 lbs. of almost any article that can be given to them. But this may account for the observation that we have often heard made, that "millers' horses and hogs are always fat," as they are generally fed liberally on wheat offal.

Milverton, First mo., 12th, 1844.

Extracted from Dr. Playfair's Lecture, delivered to the members of the Royal Agricultural Society, in December last.

The food of cattle is of two kinds, as sized and unazotized—with and without nitrogen. The following table gives the analysis of various kinds of food of cattle in their fresh state:—

	Water.	Organic matters.	Ashes
100lbs. Peas,	16	80½	3½
" Beans,	14	82½	3½
" Lentils,	16	81	3
" Oats,	18	79	3
" Oat-meal,	9	89	2
" Barley-meal,	15½	82½	2
" Hay,	16	76½	7
" Wheat-straw,	18	70	3
" Turnips,	89	10	1
" Swedes,	85	14	1
" Mangold-wurtzel,	89	10	1
" White carrot,	87	12	1
" Potatoes,	72	27	1
" Red Beet,	79	10	1
" Linseed cake,	14	75½	7½
" Bran,	14½	80½	5

A glance at this table would enable a person to estimate the value of the articles as diet. Thus every 100 tons of turnips contained 90 tons of water. But the value of inorganic and organic matters which these foods contained, differed. Thus Mr. Rham states, that 100 lbs of hay were equal to 339 lbs. of mangold-wurtzel. It would be seen that that quantity of hay contained 76 lbs. of organic matter, whilst the mangold-wurtzel contained only 34 lbs.

One result on feeding animals on foods containing much water is, that the water abstracts from the animal a large quantity of heat, for the purpose of bringing it up to the temperature of the body, and in this way a loss of material took place. The mode proposed by Sir Humphrey Davy, to ascertain the nutritive properties of plants, by mechanically separating the gluten, is unsusceptible of accuracy. The more accurate way is, to ascertain the quantity of nitrogen, which being multiplied by 6.2, will give the quantity of albumen contained in any given specimen of food.

The following table shows the equivalent value of several kinds of food, with reference to the formation of muscle and fat, the albumen indicating the muscle-forming principle:—

	Albumen.	Unazotized matter.
100lbs. Flesh,	25	0
" Blood,	20	0
" Peas,	22	51½
" Beans,	31	52
" Lentils,	33	36
" Potatoes,	2	24½
" Oats,	10½	68
" Barley-meal,	14	68
" Hay,	8	98
" Turnips,	1	9
" Carrots,	2	10
" Red beet,	1½	2½

The analysis in this table are partly the result

of Dr. Playfair's, and Boussingault's analysis. The albumen series indicates the flesh-forming principles, and the unazotized series indicates the fat-forming principles. By comparing this table with the former, it will be at once seen which foods contain not only the greatest quantity of organic matter, but what proportion of this organic matter is nutritive, and which is fattening, or that which furnishes combustible material. In cold weather, those foods should be given which contain the larger proportion of unazotized matters, in order to sustain the heat of the body. Thus it will be seen, that potatoes are good for fattening, but bad for shewing. Linseed cake contains a great deal of fattening matter, and but little nutritive matter; hence barley-meal, which contains a good deal of albumen, may be advantageously mixed with it.

Dumas, a French chemist, states that the principles of fat exist in vegetables, as in hay and maize; and that, like albumen, it is deposited in the tissues unchanged. But Leibig regards fat as transformed sugar, starch, gum, &c., which has undergone a change in the process of digestion. This is why linseed cake is fattening; all the oil is squeezed out of the seed, but the seed coat—which contains a great deal of gum and the starch of the seed—is left, and these are fattening principles.

The oxygen, introduced by respiration into the lungs, is destined for the destruction of carbonaceous matter; but there is a provision made for taking it into the stomach with the food, and this is done by the saliva. The saliva is always full of bubbles, which are air bubbles, and carry the oxygen of the atmosphere into the stomach with the food. The object of remination in animals is the more perfect mixing of the food with the oxygen of the air. This is why chaff should not be cut so short for ruminating, as for non-ruminating animals, as the shorter the chaff is, the less it is ruminated, and the less oxygen it gets.—*Mark Lane Express*.

GOOD EFFECTS OF DRAINING.

At the late annual meeting of the Liverpool Agricultural Society, the president, Lord Stanley, said that he would state one instance of the practical returns which might be expected from thorough scientific draining.

In 1841, his father was about to enclose in the park of Knowsly, a tract of about 80 acres. Of this about 20 acres were strong clay land, with a very retentive subsoil, and the remaining 60 he remembered from his boyhood, as the favoured haunt of snipes and wild-ducks, and never saw there any thing else. In the course of the first year, the 60 acres maintained—but very poorly—during the summer, six horses; and on the 20 acres there was a very small crop of very poor hay. It was impossible for land to be in a poorer condition; and in breaking it up they had some two or three times to dig the plough-horses out of the bog.

In 1842, the whole of this land was thoroughly subsoiled and drained, and in 1842, what was not worth 10s. an acre per annum, the year before, was in turnips, and on that land they fed off, in five months, and fattened for the butcher, 80 beasts and 300 sheep, and afterwards carted into the farm yard 350 tons of turnips. In the present year they had a very fair crop of barley and oats, which his friend, Mr. Henry, would be very glad to show to any gentleman who felt any curiosity on the subject. Now he did not hesitate to say that that land was, at that moment, worth 30s. an acre. The outlay upon it for pulling up old fences, thoroughly draining, tilling, and breaking it up, amounted just to £7 10s. per acre, giving just 20s. for every 150s. of outlay, and giving to the landlord a permanent interest of 14 per cent. on the money laid out on that unpromising ground. It happened that in the same year they took into their own hands land which had been abandoned by the tenant as perfectly worthless. It was a large field of 22 acres of very poor sandy soil. It was drained at an expense of £2 per statute acre, and in the first year they fed off on that land 120 sheep, the remaining part of the turnips being carried to the farm yard; and he ventured to say, that at the expense of £2 per acre, the land was increased in value 10s. per acre to the landlord, and as much to the tenant.—*New England Farmer*

REARING CALVES.

(To the Editors of the Albany Cultivator.)

Messrs. EDITORS—I would beg leave to drop a few remarks on the subject of rearing calves, having had considerable experience in that branch of rural economy. When I first commenced farming I had to pay heavy *crow rates* every year (as the term was). I never could get my calves through the first winter without losing one or more. They would grow poor towards spring—their backs would assume the appearance of an arch—the scouers would set in, and they would die in despite of all my care and attention. Experience and observation have convinced me that lice was the primary cause of all the difficulty; and for several years past I have adopted the practice of destroying them in the fall, or forepart of the winter, since which time I have not lost a calf. I have tried many remedies, but the best thing I have ever tried is sulphur. I take two parts of lard and one of sulphur, melt the lard, and when nearly cold mix in the sulphur, and rub it thoroughly on the parts most frequented by these troublesome vermin, and they will soon disappear. It sticks close to the hide and hair, and continues to scent until they shed their coat, and prevents any more from getting on them from other animals with which they may chance to come in contact. I keep my calves by themselves, and have a warm shelter for them to go in when they choose, in addition to as much good hay as they can eat. I give them each half-a pint of oats or corn meal ground in the ear, every night and morning, and I never was troubled with having my calves get so fat in winter as to do with the black leg as your correspondent in the January number of the Cultivator complains of.

JASON SMITH.

Tyre, N. Y., January, 1844.

TOBACCO IN CONNECTICUT.

(To the Editors of the Albany Cultivator.)

Messrs. GAYLORD & TUCKER—East Windsor has for a long time been celebrated for its distilleries and tobacco as Weathersfield for its state prison and onion, and manufactures daily as many bushels of the staff of life into the seal and body destroying poison, gin, as the states prison numbers convicts. We grow in this town annually about three hundred tons of tobacco, and in the Valley of the Connecticut about five hundred tons are grown annually. The yield, the last year, was less than usual, 1,500 pounds being about the average per acre. The price of tobacco the last season of a fair growth was 7 cts. a pound, and most of the crop was sold before housed and cured. We have two varieties of the weed, the broad leaf and the narrow leaf—the latter is about two weeks the earliest.

It seems our tobacco is of a peculiar species, or our soil and climate are peculiarly adapted for the production of a superior article

The soil which produces our best tobacco is a light sandy loam. We prepare our beds for the seed as early in April as possible—select the richest or best land in the garden or on the farm, moist but not wet—manure and prepare it as we do for the cultivation of cabbage or any delicate plant for transplanting—pulverize, and make the bed as fine and smooth as possible; then sow the seed broad cast about as thick as we do cabbage seed; then roll or tread down the bed thoroughly, that the seed may be pressed into the soil. The bed is kept clean of weeds. In a common season the plants will be large enough for transplanting by the 10th of June. The land for the crop should be well manured and plowed at least twice before the time of transplanting, and harrowed and rolled, or bushed, and left as smooth as possible. We mark the rows three feet apart and straight; on the rows we make small hills for the reception of the plants, 2 ft. to 2 ft. 6 in. apart. We have our land all prepared by the time the plants are large enough for transplanting. If raining at the time, we take the advantage of it and get all our plants out; if not, we set and water. After this, the field is examined several times, and where plants are dry or injured by worms, others are set in. As soon as they stand well they are carefully bowed and vacant places filled with new plants—after this the cultivator is used between the rows,

and the crop kept clean with the hoe. The plants are frequently and thoroughly examined for the tobacco worms, and they must be destroyed; if not, the crop is sure to be. When in blossom, and before the formation of seed, it is topped about 32 inches from the ground, leaving from 16 to 20 leaves on each stalk. After this, the suckers at each leaf are broken off, and the plants kept clean till cut. When ripe, the time of cutting, the leaf is spotted, thick, and will crack when pressed between thumb and finger. It is cut any time in the day after the dew is off, left in the row till wilted, then turned, and if there is a hot sun it is often turned to prevent burning; after wilted it is put into small heaps of 6 or 8 plants, then carted to the tobacco sheds for hanging. We usually use poles or rails about 12 feet long; hang with twine about 40 plants on each rail—20 each side, by crossing the twine from the plants one side to the plants the other, the rails about 12 inches apart. It hangs from six to ten weeks to get perfectly cured, which is known by the stem of the leaf being thoroughly dried. It is then, in a damp time, when the leaves will not crumble, taken from the poles and placed in large piles by letting the tops of the plants lap each other, leaving the butts of the plant out. It remains in these heaps from 3 to 10 days before it is stripped, depending on the state of the weather, but must not be allowed to heat. When stripped it is made into small hands; the small and broken leaves should be kept by themselves. It is then by the purchaser packed in boxes of about 400 lbs., and marked *seed leaf tobacco*. The most of our last crop has been shipped to Bremen.

I think we can cultivate one acre of tobacco with the same labour and expense that we can two acres of corn that produces 60 bushels to the acre, and the manure required is about the same as for the corn crop, and I do not think it exhausts the land as much as the corn crop, for it is not allowed to seed.

HENRY WATSON.

East Windsor, Jan. 22, 1844.

LIME.

The analysis of soils in a certain sense, and with a view to certain special objects, is far from worthless or deserving of neglect. One soil, by an easy examination, is found to be deficient in organic matter, and the advice may be—try the ploughing-in of a green crop; another may contain much vegetable matter in what is called an inert state—try upon that a dressing of hot lime; a third may contain sulphate of iron or alumina—drain, deep plough, lime, or marl, and summer fallow such land, and you take the shortest road towards a cure. Again, one may ask, why does lime not benefit my land? An easy analysis will reply, because it abounds in lime already, and must have a season of rest from liming; or because it is poor in organic matter and requires more liberal supplies of manure, or, if neither of these is the case, because your land requires draining. So the subsoil may be yellow and noxious when brought to the surface, or it may kill the roots of plants when they descend to it. Then a simple examination may prescribe draining and subsoiling, that the noxious matter may be washed out by the rains, and the whole mellowed by the admission of air. Or it may be rich in lime, which has sunk from the surface, and after frequent limings has produced a real marl bed beneath; and here the chemist may say, plough your land deep, and bring up the marl, and thus save the cost of lime for a season at least.—*Journal of Agriculture.*

TRANSPLANTING ONIONS.—An Aberdeen paper, published a few months since, says: "In the gardens at Gordon Castle, at present, may be seen the good effects resulting from the transplanting of onions, by which their growth is materially improved. Mr. Saunders, the gardener, had a bed sown in March, and since transplanted, which presents a truly gigantic appearance. Twenty-four of the onions were taken up on Saturday, and weighed 16 lbs. One of them, now before us, measures twelve and a quarter inches in circumference, and weighs ten ounces. The quality of the onions is as fine as their size is remarkable."

Home District Ploughing Match.—

The Home District Ploughing Match, which was advertised to come off on the 15th of May next, will take place on the 7th of that month, on the ground occupied as the Union Race Course, near the Don Bridge, a short distance East of this city. The members of the District Society, also of its Branches in the several Townships in the District, will be allowed to compete for the prizes, which are arranged in three classes, without any entrance money. A prize will be made up by private subscription, on the ground, for which the successful competitors will plough. It is confidently expected that there will be a large gathering of spectators from the city and surrounding country. We would recommend the officers of the Township Branch Societies to make the necessary arrangement for inducing the best ploughmen in their respective townships to attend the performance, which will take place on the 7th day of May next, as above mentioned. The District Society will award in all nine prizes, equalling the very handsome sum of sixty dollars; and we anticipate that thirty dollars more will be made up on the ground.

TORONTO HORTICULTURAL SOCIETY.

THE Toronto Horticultural Society will hold its first Prize Exhibition on Wednesday, the 15th day of May next, at the hour of 11 o'clock, at the CITY HALL, which, by the permission of his Worship the Mayor, has been placed at their disposal for that day. Admittance to Members and their families, Free.

The following prizes will be awarded, viz.:

Articles to be exhibited for prizes.	Cultivators.	Amateurs.	tears.
	1st 2d.	1st 2d.	1st 2d.
	1st.	2d.	1st.
Best Green-House Exotic,	20	10	20
Best 12 Green House Plants in flower, (named)	20	10	20
Best collection of Geraniums (named)	10	5	10
Best 24 Geraniums in flower, (named)	10	5	10
Best collection of China Roses, ..	10	5	10
Best 6 Tea Roses,	10	5	10
Best 6 Carnations,	10	5	10
Best Picotees,	10	5	10
Best Auriculas,	10	5	10
Best collection of Pansies,	10	5	10

	1st.	2d.
Best pint of Strawberries,	20	10
Best 12 Table Apples,	10	5
Best 12 Cooking Apples,	10	5
Best brace of Cucumbers,	10	5
Best 50 heads of Asparagus,	10	5
Best dish of Sea-Kale,	10	5
Best 12 Stalks of Rhubarb,	10	5
Best 25 Radishes,	10	5
Best 12 heads of Lettuce,	10	5
Best peck of Spinach,	10	5
Best 3 heads of Cauliflower,	10	5
Best 3 heads of Cabbages,	10	5
Best half-peck of Kidney Beans,	10	5
Best quarter peck of New Potatoes,	20	5
Best dish of Mushrooms,	10	5

Members of the Society only can compete at this exhibition.

A subscription of 5s. constitutes a member.

Toronto, March 17, 1844.

GARDEN AND AGRICULTURAL SEEDS FOR 1844.

J. F. WESTLAND begs to call the attention of his friends and the public, to his STOCK OF SEEDS, imported this season from England, and warranted genuine. It comprises an excellent assortment of Turnip Seeds, Mangel Wurzel, Clover, Timothy, Rye Grass, Orchard Grass, Lawn Grass, &c. &c. All of which will be sold on the lowest possible terms.

168, King Street, Toronto, 20th February, 1844.

LLOYD'S CANADIAN PATENT PLOUGH.—No. 4.

THE Subscriber begs to inform the Canadian Farmer's in general, that he has constantly on hand an extensive stock of LLOYD'S CANADIAN IMPROVED PATENT PLOUGHS, which are manufactured under the immediate inspection of the inventor, Mr. Lloyd; and which have given general satisfaction in every portion of the Province, where they have been used. It is the opinion of a number of the best ploughmen in the Home District, that Lloyd's Improved Ploughs will ultimately supersede the Scotch Wooden Ploughs, on account of their cheapness and durability. In every section of the Province where the various patterns of the common Patent Plough are in use, the agriculturists in those localities, will find it tend greatly to their interests to purchase "Lloyd's No. 4, Patent Plough," as it is acknowledged on all hands to be an admirable implement for ploughing a ward, or any other description of work. The mould board, wrought iron, and wood work, are very similar to the most approved Scotch Plough, and the shears are hardened in such a manner, that they will wear much longer than wrought-iron laid with steel.

The above Ploughs will be supplied to order, at either wholesale or retail, on very reasonable terms.

CHRISTOPHER ELLIOT.

PHOENIX FOUNDRY, YONGE STREET,
Toronto, March 15, 1844.

HENRY E. NICOLLS,

NOTARY PUBLIC, CONVEYANCER AND
LAND AGENT, &c.,

No. 4, Victoria Row, King Street, Toronto

DEEDS, MEMORIALS, AND PETITIONS drawn with neatness and despatch. Titles to land searched and proved.

Mr. Nicolls having more good land than the Government, requests all Emigrants and others who intend buying either Wild Lands or improved Farms to give him a call. Lands purchased for persons at the Government Sales, located and money paid on the Deeds procured at a moderate charge.

Lands claimed and prosecuted under the Heir at d. Devisee Act, and Deeds taken out.

Mutua Claims and U. E. Loyalists Rights procured and bought. Bank Stock and Government Debentures bought and sold. Petitions to the Governor and Council for pensions or lands prepared and prosecuted. Money advanced on letters of credit upon Great Britain, mortgage or personal security.

N. B.—On all Government Land business or mortgage, a fee of five shillings will be required before the business is taken in hand.

LAND SCRIP, AND BANK STOCK FOR SALE.

☞ All Letters must be Post-paid.

Toronto, March, 1844.

IMPORTANT AGRICULTURAL WORKS ON SALE, by P. L. SIMMONDS, Agricultural Agency and Commission Office, 18 Cornhill, London.

1. Johnson on Fertilizers, published at 12s., reduced to 8s. (One of the most important and popular works on Manures extant)
2. The Implements of Agricul ure, illustrated by numerous highly finished Cuts, by Mr. J. A. Ransome. Price 9s.
3. The Farmers' Almanac, 200 pages, for 1842, 1843, 1844. Price 1s. each. (Full of sound practical information, and useful for Farmers at all times and in all places)
4. Agricultural Chemistry for Young Farmers, by C. W. Johnson, F. R. S. Price 1s.
5. A Calendar for Young Farmers, by C. W. Johnson, Esq. Price 1s.
6. The Farmers' Magazine, Monthly. Price 1s. 6d

1,000 SUGAR KETTLES FOR SALE BY—

JOHN HARRINGTON.

King-street, Toronto, 10.h Feb. 1844.

YONGE STREET NURSERY AND FLOWER GARDEN.—JAMES FLEMING, Seedsman and Florist, offers for sale his usual and well-assorted Stock of GARDEN, FIELD, and FLOWER SEEDS; all of which he can recommend as fresh and genuine in their sorts. Country dealers and Gardeners supplied on the most reasonable terms. Also—a large Stock of Green House Plants, Double Dahlias, Flower Roots, Fruit and Ornamental Trees, &c. &c. Cabbage, Caul flower, and Celery Plants in their season, carefully packed and sent to any part of the Country, according to order.

Cash for Timothy, Grass, and Clover Seeds.
Toronto, 11th Feb. 1844.

IMPROVED DURHAM CATTLE FOR SALE—The Subscriber begs to acquaint his friends and the public generally, that he has for sale two thorough-bred Du Rom BULLS, one year old, three thorough bred Durham COWS, in calf, one of which was imported direct from England, and several grade HEIFERS of the above breed,—all choice animals, and very superior of their kind. He has also a number of well bred SHEEP, of the Leicester and South Down cross.

THOMAS MAIRS,

Township of Vespra.

February 15, 1844.

SMOKY CHIMNEYS.—No Cure, no Pay. The Subscriber begs leave to offer his services to all persons troubled with this dreadful calamity, upon the above terms; and, after thirty-five years' practice, feels confident of success.

Prices fixed before the work is begun.
All letters (post-paid) addressed to
G. BROWN, BUILDER, &c.,
Yonge Street, near York Mills.

will be attended to.
N. B.—Persons about to build would do well to avail themselves of his superior method of constructing Chimneys.
March 1, 1844.

FRESH SEEDS.

THE Subscriber has for sale a very choice assortment of GARDEN, FLOWER, and FIELD SEEDS, which he will sell on moderate terms, at No. 14, Yonge Street, immediately opposite Ross, Mitchell & Co.

GEORGE LESLIE.

N. B.—Country Storekeepers supplied with Seeds, neatly put up in boxes. Cash paid, at all times, for CLOVER, TIMOTHY, and FLAX SEEDS.
G. L.

Toronto, Feb. 12, 1844.

REVOLVING DRYING KILN.

THE Subscriber begs to inform the Millers, Merchants, and the Public generally, that he has, at considerable labor and expense, invented and completed a Machine for DRYING Wheat, Oats, Barley, Indian Corn, or any other Grain necessary to be dried before being manufactured: and he assures them, that it is the cheapest and most expeditious mode of Kiln Drying Grain now in use. This Machine will dry from thirty to sixty bushels of grain per hour in a most perfect manner. It is so constructed, that the grain passes through the machine, from thence to the rolling screen, where it is cooled, in a fit state for manufacturing. This machine requires very little power to keep it in motion, and may be driven by a small strap from any wheel in the mill. A quarter of a cord of hardwood will produce heat sufficient for drying a thousand bushels of grain.

The Subscriber begs to inform the public, that he has obtained a Patent for his Machine, which extends through the United Province of Canada, and that he is prepared to manufacture the above Machines to order, or dispose of the right to persons desirous of manufacturing or using the same.

Any further information on the subject may be had, by addressing the Subscriber. All communications (post-paid) will be immediately replied to.

HIRAM BIGELOW.

Tecumeth, Bond Head. P. O. }
February 15, 1844. }

SEED WHEAT.—J. M. STRANGE offers, at private sale, Ten Barrels Russia Seed Wheat, a very superior article.
Toronto, 20th January, 1844.

PROTESTANT HILL STORE, PORT MORA. The Subscriber has now on hand, at the Protestant Hill Store, as well as at Cayaville and Williamstown, a general assortment of Dry Goods, Groceries, Hardware, Crockery, &c., which he offers on reasonable terms.

☞ CASH paid for good clean Wheat.

JOHN KNOWLSON.

January 1, 1844.

GARDEN AND FLOWER SEEDS—A large assortment of the choicest varieties of Flower Seeds, and a small collection of the best Garden Seeds, on sale till the 30th of March, when the Store will close, at Messrs. BADDON'S, 7, City Buildings, King Street, Toronto.
March 1, 1844.

EDWARD LITTLE, BRUSH MANUFACTURER, Newgate Street, (three doors East of Yonge Street,) pays CASH for HORSE HAIR and HOG'S BRISTLES.
Toronto, January, 1844.

CARDING MACHINES.

THE SUBSCRIBER begs leave to acquaint his friends and the public in general, that in addition to his Foundry and French Burr Mill Stone Factory, he has engaged Archelaus Tupper, who is an experienced Mechanist, to make all kinds of CARDING MACHINES, of the latest and most approved construction; he has been engaged for twenty years in the United States, and also in Canada, and has a thorough knowledge of all kinds of Machinery, namely:—Double and Single Carding Machines, Pickers, Condenser, Jacks, Billeys and Jinney. Also, Broad and Narrow Looms, Shearing Machines, and Gigs, Napping and Teazling; Stoves for heating Press Plates; Press Screws. Also, Grinding Shearing Machine Blades; Felling Mill Cranks, &c., and all kinds of Grist and Saw Mill Castings made to order; Wrought and Cast Iron Cooking and Plate Stoves; Fancy Stoves of all kinds: Also, Ploughs of different patterns; Mill Screws of all kinds; and Damself Irons, Bolting Cloths, of the best Dutch Anker Brand, warranted of the best quality; Mill Stones of all sizes, always on hand and to order. Also, all the other herein-mentioned articles always on hand and for sale by the Subscriber, at his FOUNDRY, on Yonge Street, as cheap as they can be obtained at any other place.

CHRISTOPHER ELLIOT.

Toronto, August 7, 1843.

NURSERY AND SEED STORE.

THE SUBSCRIBER feels grateful for the patronage extended to him since he commenced business, and would respectfully inform his friends and the public, that he has removed from King Street to Yonge Street, immediately opposite the Stores of ROSS MITCHELL & Co., where he will carry on the business of NURSERY and SEEDSMAN. Having twenty Acres in the liberties of the city, in course of breaking in, as a Nursery and Seed Garden, he can now supply the public with Fruit and Ornamental Trees, Shrubs, Roses, Herbaceous Flowering Plants, &c., at a cheaper rate than they can be got from New-York or Rochester.

Trees and Seeds packed carefully to order, and sent to any part of the country.

GEO. LESLIE.

Toronto, September, 1843.

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