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THE FARMER AND MECHANIC,

Devoted to Agricultural, Horticultural, Mechanical, and Domestic Subjects.

Vol. I.

TORONTO, CANADA WEST, DECEMBER, 1848.

No. 3.

CANADIAN AGRICULTURAL SOCIETIES.

Among the great variety of subjects that properly come under the notice and discussion of agricultural periodicals, none are of greater importance than that of the organization and management of associations that have for their object the encouragement of the agricultural and mechanical improvement of the country. At this season of the year the practical operations on the farm are of such a nature that it would scarcely be necessary for a public journalist to attempt giving directions, with a view of having them put into practice, for the obvious reason that the simple processes of thrashing, chopping, and delivering the produce of the farm to market, together with the various other details of labor required to be performed during the winter months, do not require much skill in their execution, and may be tolerably efficiently done by persons who, in other respects, would be ill calculated to take charge of the improved management of a well regulated farm. For this reason no attempt whatever will be made during the winter months, at writing upon those subjects that might, in a practical point of view, be termed *seasonable*; but rather a considerable space shall be occupied in the discussion of a class of subjects that will have for their object the preparation of the public mind for the due and better performance of those acts that devolve upon both statesmen and citizens, in order that the full development of the numerous resources of the country may be speedily and fully accomplished.

A little attention will be given at this time, to the consideration of what, in the judgment of the writer, may be considered the best method of organizing agricultural

societies in that portion of the province now styled Western Canada; and before the conclusion of the remarks, the beneficial influence that the proposed system will have upon the agricultural and mechanical classes of the country, shall be clearly pointed out, so that all who evince any interest whatever in favour of the welfare of the colony, may be induced to render all the aid in their power in consummating either such, or a very similar system of organization.

The agricultural societies of Western Canada are very properly divided into three distinct classes, viz.:—the Provincial, the District, and the Township Societies. For convenience sake, they will be taken up and discussed in the order of their importance, and as they are above presented to notice.

PROVINCIAL AGRICULTURAL ASSOCIATION OF UPPER CANADA.

This Association was organized on the 17th of August, in the year 1846, at the city of Hamilton. After three unsuccessful attempts in the city of Toronto, at obtaining an organization, it was deemed by the originators of the movement, a wise course to adjourn to the city of Hamilton, so that the friends of improvement in the districts lying east and west of the Home District, might have confidence in it; and accordingly, seventeen delegates reported themselves, and the institution was organized and established on the day and place mentioned above. Without five pounds in the Treasury, premiums to the amount of between five and six hundred pounds were announced by public advertisement, and in ten weeks from the period of the formation of the Association, the first public exhibition under its patronage was held in the city of Toronto, at the Old Government House, now the Provincial

Normal School. Many of the District and local Societies, on that occasion, contributed liberally towards the funds of the Association, and the individual subscriptions from various parts of the Province were of a character that stimulated its officers and managers in its future operations. Every department of the Show was creditably sustained, and the premiums, though large, were promptly paid. The second year the premium list was considerably increased, and business was done upon a scale that would require at least £1000 to meet the expenditure. The citizens of Hamilton, however, appeared quite able for the task, and engaged in the matter in a manner that would have been quite commensurate to meet all the engagements incurred by the Association and local Committee, had the weather proved even ordinarily favorable. The very elements conspired to thwart the Hamiltonians in the pleasures they had with so much reason, imagined would be enjoyed during the great festive week in which the Provincial Fair was to be held in their flourishing city. Hard months of toil that had been spent by the chairman, the secretary, and treasurer of the local committee, and in fact by most of the members of that Committee, did not produce the effect so earnestly anticipated; and instead of having a large gathering of kindred spirits, all joined in solid phalanx to promote the well being of the industrial interests of the Province, nothing but a continued period of rain, with its concomitants, a sea of mud and indescribable confusion and disorder, prevailed. Nevertheless, some 1700 articles were brought forward for exhibition, the most of which were highly creditable to the parties who entered them for competition; and the expense incurred by the Committee and the large premium list, being nearly all drawn in prizes, there having been but a comparatively few blanks on the list, thus the outlay on the part of the Association was quite as great as if 20,000 visit-

ors had attended the meeting. The means of the Association for promptly meeting its liabilities, were not ample for the task, and there yet remains to be paid a considerable amount of premiums which doubtless will be liquidated at the very earliest possible opportunity. In the last number of this paper ample notice was taken of the third meeting held under the patronage of the Association at the town of Cobourg; and as the financial report of the local committee is not at hand, a correct statement cannot be made; but, from the economy that in every instance seemed to pervade the arrangements, and the few extra premiums awarded, the inference may be fairly drawn that the subscriptions and receipts at the show grounds were quite ample to meet the entire expenditure, so that now the only barrier in the way that appears to prevent the Association from exercising a highly salutary influence on the public mind, is the want of money to liquidate old debts, and for the carrying out of the original designs contemplated by its founders. When the Institution was first established, no one for a moment supposed that a session of Parliament would be allowed to elapse without a charter being granted, and a liberal annual grant made to be in some respect equal in point of magnitude, to the great objects for which it has been founded to encourage and promote. Unhappily, however, those hopes have been frustrated, and the last Parliament graciously condescended so far as to grant the charter; but when the supplies were granted, the bill for encouraging the laudable efforts made by a few spirited Canadians in founding a national institution, which, in point of importance, may, by a little nurturing care on the part of the people and Government of the country, be made equal to any chartered institution in the Province, WAS ENGROSSED, and allowed to be printed among the other acts of that Parliament or Government with the clause intended for the appropriation filled

up in BLANK POUNDS, SHILLINGS, AND PENCE.

The present Canadian Government have had no opportunity to develop their schemes and intentions regarding the great interest of agriculture, and therefore it would be rather premature to prejudge any features of the proposed bill they intend to pass into law the approaching session of Parliament. One thing, however, may be safely done by the press, viz:—suggestions may be made; and members of Parliament may or may not act upon them, as they choose. If no action whatever be taken upon the suggestions made by that portion of the Press whose opinions are supposed by good judges to be worthy of a favorable consideration, then it will be taken for granted that a better mode has been discovered by the friends of the measure, which will be embodied in a clear and comprehensive manner in the several clauses of the bill. Trifling with this important subject or interest, as has been heretofore the case, on the part of the legislators of Canada, will no longer be tolerated by the thinking portion of the community! The matter should be taken up and acted upon at once, in a manner that will satisfy the intelligent yeomanry of the colony, that the men they have chosen to represent their interests in Parliament, are prepared to go to any reasonable length in giving substantial encouragement to agricultural improvement, whereby the cultivators of the soil may confidently rely upon being able to successfully compete in the production of breadstuffs and other agricultural products for export to the markets of the mother country, with the United States and the grain-growing countries on the European continent.

To return to the Provincial Association. The wants of this important institution must not be overlooked. A grant of at least £300 is required to liquidate its present indebtedness, and an annual appropriation in its favor of at least £500 should be made from the consolidated revenue of the Province. It is

folly to expect that the District and other local societies will longer continue to give a portion of their funds to sustain the character of this, the only really national institution in Western Canada. District Societies, however, might be prevailed upon to do as has been so nobly done by the Canada Company, in awarding a large special premium for the encouragement of some specific object; and thus each district would receive any additional credit that might belong to the various respective portions of the exhibition, in the same manner that is due to the Canada Company, from the extra interest that is given to the show of wheat, through the influence of their large bounty. Patriotic individuals also may, when the objects of the institution become well understood by the great bulk of the people, be induced to award large premiums at the meetings of the Association, for such objects as may, in their judgement, require extra encouragement. The Governor-General's prize will also doubtless in future years accompany the premium list, and be ample to secure some improvement in agriculture, mechanics, or the arts. But although these marks of favor may, and doubtless will be meted out to the Association, together with a liberal patronage from a very large and respectable portion of the Canadian population, still it does not follow that a liberal annuity is not required from Government to aid the directors and managers of the Institution in accomplishing the great and patriotic end for which it has been established. With a liberal grant in its favor, public confidence will greatly be strengthened, and consequently a corresponding increase of revenue may be annually expected from subscriptions, receipts at gates, and other local means of raising funds, so that for the purposes of premiums, local expenses and a liberal salary to its secretary, the Association may be made, for the foregoing objects, entirely self-sustaining. The annual grant would there-

fore be principally required for special purposes; such as awarding liberal premiums for prize essays on a great variety of subjects, and the printing of the same, together with other important transactions of the Association; the establishment of an agricultural and mechanical museum, such as has been so successfully founded by the American Institute in the city of New York; the annual importation of some of the most important models of labour-saving machines invented and in use in other countries; and likewise of some of the choicest specimens of seeds and grains, of which this country is not yet in possession.

In addition to the foregoing objects that should be kept in view by the managers of the Institution, many others of equal importance will present themselves to notice from time to time, as the wants of the country, and the condition of the financial resources of the Association would seem to warrant. It must be clear to every reflective mind, that a public grant of at least £500 per annum is required, and that too before any steps are taken to make arrangements for another exhibition, and therefore every friend of the Institution should lose no time in urging upon their friends in Parliament the importance, and in fact, necessity, of granting, at the approaching session, at least the amount suggested in the foregoing remarks, and more, if a greater sum can be had.

DISTRICT SOCIETIES.

These societies have doubtless done much good in promoting substantial improvements in agriculture, but the good that has been, is of a comparatively trifling amount to what yet remains to be done by them. Heretofore there has not been an uniform system of managing those societies observed, nor has the original intentions embodied in the Act of Parliament for their encouragement been enforced or carried out in practice in any instance. By reading the Act, the inference may be fairly

drawn, that those societies, with their branches in the townships, were intended to be ostensibly importing societies of live stock, improved grains, or any thing else that would conduce to promote agricultural improvement. How far this has been done will be left for those who have interested themselves in the management of agricultural societies to determine. One thing, however, appears now certain: the time has arrived when the farmers are sufficiently intelligent to manage those important institutions with greater ability than has yet been done; and in those respects where an improved system can be instituted with advantage, it will be seized upon and adopted with a laudable spirit, worthy of so great and important an interest as that of agricultural improvement.

The whole machinery constituting and governing district agricultural societies will require to undergo an important change before a great degree of benefit to the country can be expected. What those changes will be, remain yet to be seen; and as it is a matter that belongs to agricultural associations, it may be thought quite in character to here point out some features of amendment, which may form a guide for legislation upon the subject.

The Government grant in favor of agricultural societies as now given, appears quite unequal, as a district containing 15,000 souls receives as large an apportionment as one that contain three times that population. To divide it strictly upon the basis of population, would probably create much dissatisfaction among the agriculturists of the thinly populated districts, and rather than give discouragement to any district when so valuable an interest is at stake, it would be well to continue the grant to all as at present, and a few of the very largest and most populous districts might have an additional amount added to the present grant. For instance, the Home and Niagara Districts, with their twenty odd townships each, might be con-

sidered entitled to a grant of £500 each. The Gore, London, and Midland would, upon this basis, be pretty fairly entitled to an annual grant of £400. The Newcastle, Eastern, Johnstown, and probably the Western might, upon the same rule of computation, receive £300 per annum, and the remaining districts the £250 as at present. The above scale of course could be varied to suit the exigencies of the case; it is simply given to afford the basis for future discussion and action.

Heretofore there has been a great difficulty in interesting the common farmers in the cause of agricultural societies. To remedy this evil in some measure, the plan of furnishing each member with a cheap agricultural periodical has been practised with admirable success, whereby each member received for his subscription much more than value in the paper. By this means vast numbers have become members of societies, and taken an interest in the shows, who otherwise would not have given a farthing towards such an object. Periodicals of this kind, conducted with even ordinary ability, widely circulated through the country, and read by practical farmers, would soon become the instrument in effecting a much greater amount of real good to the country, than would be accomplished even through the medium of the largest premiums within the power of such associations awarding. By repeatedly reading carefully prepared papers on the various subjects connected with agriculture, and her kindred arts, the farmer will, in process of time, see the force of the arguments, and by degrees, the views advanced by the writer, so far as they are consonant with his practice or with common sense, will become his own, and as far as his means will admit, will be put into practice on his farm. A thousand arguments might be made use of, if required, to prove the mutual advantage that may be derived, both to agricultural societies and the publishers of agricultural periodicals, in favour

of the advancement of agricultural improvement, by the means of such societies furnishing each of their members with a cheap, and if possible, an ably conducted magazine, devoted to the advancement of the cause of agricultural and mechanical improvement. As this mode of promoting improvement has been in successful operation in nearly all the districts of Western Canada, during the past five years, and as the soundness and utility of the principle have become generally acknowledged by all those whose opinions upon such matters are worth anything, it is scarcely necessary to here employ an additional argument in favour of it.

As the great bulk of the farmers cannot even be prevailed upon to give five shillings per annum to advance the interests of agriculture, when they could obtain for their money five times its value in an agricultural paper, and, besides, have an opportunity of competing for the liberal prizes awarded by those societies, it would be well to adopt the course so successfully practised by many of the local societies in England, and by the national agricultural societies of every country where such institutions have been formed, of putting a small *poll-tax* on every non-subscriber who enters the show-ground. If this plan could be carried out by the district societies, and only one exhibition be held in the year, to come off in the early part of autumn, a large fund might be raised at the gate, which, with the Government bounty and entrance fees, would enable the societies to combine with those shows all the departments which receive encouragement at the hands of the Provincial Association. The mechanical and horticultural departments, and also that for the encouragement of domestic manufactures, should receive a very liberal amount of patronage by the district societies.

TOWNSHIP SOCIETIES.

These societies are considered by many to be, when compared to the larger societies, what the branches are to the trunk of the tree; in the opinion, however of the writer,

they are rather to the other societies, what the roots are to the tree. Without township societies it would be a difficult matter to get up an interest in favour of agricultural and mechanical improvement in those portions of the district that are situated a considerable distance from the county town. There are at this time, in the Home District, at least twelve township societies, each of which act independent of each other, and also of the district society. Many of the societies obtain as large an annual contribution to their funds by private subscription, as does the district society. The average annual subscription to the district society does not exceed £30, whereas, the township of Whitby, on one occasion, received the very large subscription of £105. Many of these societies exult considerably at the idea of their being able to obtain as large a collection of choice products as the Parent Society can do at their meetings. Rivalry among township societies is highly laudable, but when it exists between a branch and the parent society, it shows on the face of it that a radical defect exists somewhere in the mode of organizing those societies. The whole matter is susceptible of an easy explanation, and the evil must be speedily corrected. The township societies draw a proportion of the Government bounty, from the district societies, in proportion to their several subscriptions. This is a plain construction of the law, but it has never been acted upon, for the obvious reason that if it were, the branch societies would absorb nearly the entire grant: and hence a spirit of animosity and jealousy has all along been allowed to exist between those useful institutions, whereas, by a slight attention on the part of the Legislature, in amending the Agricultural Societies Bill, all of the difficulty might have been obviated, and the cause of agricultural improvement might thereby have been very considerably advanced. Those societies should have a certain proportion of the grant, and the district society

the remaining portion. Independent of this, the district society should be governed and controlled by the Presidents and Secretaries of the township societies, who should be made responsible for every act of the general society, and who should likewise be styled the Board of Agriculture for the district. Let this principle be fairly carried out, and the results will very shortly be shown in the improved management and interest displayed at the agricultural exhibitions of the country. Township societies have, in many instances, set a noble example in patronizing the agricultural press, and indeed without patronage from this quarter, it is very doubtful whether an agricultural periodical in Western Canada could have been sustained a few years ago. Then, on the other hand, periodicals of this kind have been equally efficacious in building up and sustaining those local societies. They have both materially aided each other, and have rendered nearly equal service to the country in favoring the cause of agriculture. In every instance where township societies have adopted the plan of appointing an efficient committee to manage the affairs of the society, and that Committee have made it a part of their duty to canvass the entire township for members, such societies have flourished, and the farmers within the sphere of its operations have become celebrated for their active cooperation in moving forward the great cause of improvement. Where the matter is taken up with spirit, and the periodical patronized by the society is also spiritedly conducted, the effect will assuredly follow that a spirited action will pervade all the transactions of the Society. The larger the support given to periodicals devoted to agriculture, the better will such papers be conducted; and on the other hand, the more numerous the subscription list, the better able will the Society be to award liberal premiums at their shows.

Since writing the above, a correspondent has sent us the following communication, on the subject of Agricultural Societies; which:

without holding ourselves responsible for the views of the writer, we insert:—

TOWNSHIP SOCIETIES.

Each township society to consist of a President, Secretary, Treasurer, and not less than ten Directors, to be chosen annually, when practicable the oldest district councillor to be President, and the other Secretary; all matters to be wholly managed by the Directors, of which the President and Secretary are to be considered part. The greatest drawback township societies have hitherto had to contend with has, in our opinion, been caused by leaving their management to the whole of their members, thus causing dissensions to arise from difference of opinion on matters in themselves of trifling importance, unhappily, in many cases, much increased by matters of a personal nature, and as many persons perfectly competent to make a judicious choice of Directors, would of themselves be utterly unfit, and as leaving the management, as has hitherto been the case, to a general meeting, thus in effect constituting each individual member a Director, has been found detrimental to their well-being, we think the plan of leaving their whole management to the Directors would be a great improvement, the importance of having the Directors scattered through the township, will, we think, be apparent, both for the purposes of canvassing for members, and of doing away with sectional interests. From the District Councillors being unwilling to act, our plan may be impracticable; but let the farmers, in their selection of them, keep in mind that such parties should and would, from this fact *alone*, be utterly unworthy of the high honor conferred on them by their election. But of their so doing, at least to any extent, we have no fears, especially as their duties would not be likely to cause much extra travel, and none in their management of the District Societies, as they would necessarily have to meet for the transaction of the business relating to the

District. As a participation in the Government grant to the District by each township, is, in our opinion, indispensable to their well-being, and for the reasons stated in a former part of this article, the mode presented by the present act for the encouragement of agriculture is utterly impracticable, we would suggest the plan now pursued of leaving the apportioning wholly in the hands of the District Societies, subject to such restrictions as may be necessarily introduced into the act granting a portion of the provincial funds for their support, a synopsis of which will be found at the end of this article.

DISTRICT SOCIETIES.

Each district society should be composed of the members of the various township societies and other parties who are willing to pay an annual subscription, to be fixed by the Directors, who are to consist of the Presidents and Secretaries of the township societies, and who are to have the entire management of its affairs, and we would suggest the importance of the clerks of the several District Councils being Secretaries, making them a reasonable compensation for their trouble. The advantages of this arrangement will present themselves to every reflecting person.

PROVINCIAL ASSOCIATION.

The present mode of the Presidents of the District Societies being *ex officio* Directors is in exact accordance with our plan; indeed the great satisfaction given at the recent show in Cobourg, goes far to prove that its organization is, on the whole, all that can be desired. As our readers may not all be conversant with its constitution, we here insert it:—

1. That the Association be called the 'Provincial Agricultural Association and Board of Agriculture for Canada West.'
2. That the Members of the Association be composed of persons subscribing annually to the amount of Five Shillings and upwards.
3. That those persons who shall subscribe to the amount of Two Pounds Ten

Shillings and upwards, shall be constituted Life Members of the Association.

4. That the Association shall be governed by the several District Agricultural Societies, who shall meet annually for the election of officers, and the transaction of the business of the Association; and in case no such Delegates are appointed, then the Presidents and Secretaries of such Societies to be *ex officio* Delegates.
5. That the Delegates shall elect their President, two Vice Presidents, Secretary, and Treasurer, at their meetings, who shall hold office until the election of their successors at the Annual Meeting, which shall be held on the day preceding the Show, at Ten o'clock a. m., when the said officers shall be eligible for re-election.
6. That the Funds of the Association be raised by subscriptions of the Members of the Association, voluntary subscriptions, and such funds from the various Agricultural Societies as by them may be appropriated, and any grant which may hereafter be obtained from the Government, by application through Parliament.
7. That the objects of the Association shall be improvement of Farm Stock and Produce; the improvement of Tillage, Agricultural Implements, &c., and the encouragement of Domestic Manufactures, of useful inventions, and, generally, of every branch of rural and domestic economy.

Synopsis of an Act for the support and encouragement of Agriculture and Agricultural Societies:—

That an Annual Grant of £500, to the most populous Districts, graduating down to £250 to the least, be granted for the support and encouragement of Agricultural Societies, upon the following conditions:—

- 1st. That not less than the half of the amount of the grant should be distributed among the various Township Societies, in proportion to the number of members in each.
- 2nd. That the members of the various Township Societies should be allowed to compete for all premiums offered by the District Society, upon their paying

a small entrance fee on each article, merely enough to pay the incidental expenses of the show.

The above are, in our opinion, the only two essential conditions required compliance with by the Government. The present absurd condition of requiring the inhabitants of each district to raise among themselves a certain sum before being able to obtain any grant, having been the means of preventing societies being formed in the thinly populated districts, where they are most required, let the Government put sufficient means into the hands of the District Societies to enable them to offer such premiums as to induce the whole population to take an interest in them, and also to give some support and encouragement to such Township Societies as may be formed in each District, and we venture to predict that within a very short time, few townships in Canada West will be found without having a society in successful operation, without, however, being able to boast of better shows than the District ones, and for this reason, a participation in the grant to the District will induce their establishment, and be the means of enabling them to offer such premiums as will cause the inhabitants generally to take an interest in their prosperity.

We shall in future numbers of our magazine give some suggestions as to the most useful objects for the consideration of the various Societies, and shall with much pleasure, give insertion to any communication we may be favored with on such or any other subjects in keeping with the character of our publication.

CAN NAKED SUMMER FALLOWS BE PROFITABLY DISPENSED WITH ON A WELL-MANAGED FARM.

The discussion of the above question in all probability will require to be extended through five or six numbers of the *Farmer and Mechanic*; and therefore, in order to turn the views of the writer to any practical account during the next summer's operations on the farm, it has been begun at this early period, so that our readers may have the full benefit before they make their arrangements for the cropping of their land the incoming season. When this subject becomes once well understood by Canadian farmers, and when they have learned

the system of adapting *bastard fallows* to the particular soils they severally cultivate, it will be found that a much larger yield may be produced from their land at a considerably less expense, than was done under the old system of making naked summer fallows. Besides obtaining greater crops at less expense than from the practice at present in general favour, the land may be yearly improved in texture and cleanliness, until it reach the highest possible state of productiveness and cultivation, and that too, without the labour and loss of making a naked summer fallow. The discussion of this question involves considerations of the greatest importance both to the farmer in an individual capacity, and to the government of the country. All classes of the community are interested in its issue; for it is certain that when the enlightened practice of cultivation that will be developed before the close of these remarks, shall be generally practised by the Canadian farmers, that twice the annual quantity of breadstuffs and other agricultural products will be exported, and, consequently, the country will be correspondingly enriched. Without further preface, the subject, in its several bearings, will be taken up and treated in a plain practical manner, in the hope that the great mass of the farmers of the country may be induced to *read, practice, and profit*, from the simple truths advanced by the editor.

No system of farming can long be practised with success, unless a proper rotation of crops be observed. Then, on the other hand, the rotation or course of cropping pursued must be varied according to the means or capital employed, and especially to the peculiar quality, character, and condition of the soil. In connection with the main question under consideration will be partially described the order of rotation to be practised in the several systems of preparing and managing land for fall wheat, which do not require the naked fallow. But as it is a bad plan to mix subjects of great importance together—thus confusing rather than enlightening the readers—a series of papers will be prepared for publication, having a direct bearing on the question of *rotation of crops*, the first of which, in all probability, will appear in the January number. The growing of clover with a small proportion of timothy, might very profitably be increased to three or four times the extent those crops are at present cultivated. To make a profitable crop, the land, previous to being seeded down, as the term is usually employed, should have been brought into a

clean state of cultivation. The first crop should receive, about the 1st of May, nearly a bushel of gypsum per acre, which, in most cases, will force it forward to a sufficient state of maturity to admit of cutting for hay by the first of July. When cut as early as the first week of July, there will be a pretty good chance for obtaining a profitable crop of clover seed. No farmer should be satisfied with less than two tons of clover and timothy hay, and three bushels of clover seed per acre. It would not be difficult to bring the average up to this standard, and even a much higher one may be obtained in favorable districts by the adoption of a rational system of cultivation. Three tons of well cured clover and timothy hay, and six bushels of clean marketable clover seed per acre have been produced from a ten acre field in the Home District. So high an average as this cannot be reckoned upon, but every one should approach it as nearly as possible, and it is only by good cultivation that it can be done. Where both clover hay and seed are taken from the land the same year, the second season the clover, if possible, should be pastured with sheep, and where this stock is not in sufficient abundance to feed down the clover, cows and other stock may be employed for that purpose. During the latter part of July, or between the hay and wheat harvest, the clover ley should be broken up. As the land, at this season, will most probably be of a hard texture, the operation of ploughing will be difficult to do, and to be well executed, will require the plough irons to be sharp, and in good condition, and none but the best ploughmen should be entrusted with the performance of this branch of farm labour. A neat well laid furrow, of about four inches in depth, and nine inches in width, should be made in breaking up a clover ley in midsummer, for the obvious reason that the thinner the land is ploughed at that season, the sooner will the decomposition of the roots and leaves take place. As soon as the land is ploughed, a heavy roller might be employed to compress the inverted soil, by which the fermentation would be more speedy and complete. If the grass should make its appearance to any great extent, a few harrowings the latter part of August might be found requisite; but if the ground appear clean, which most likely would be the case, where only clover and timothy grass occupied the soil, and where care had been observed in neatly executing the ploughing of the sward, in which case it need not be touched until the first of September, when the ploughing for seed may be begun. The seed furrow should be, in most cases, turned up to the depth of ten inches; and to plough so great a depth probably three horses would be required abreast. This, however, will entirely depend upon the condition and quality of the soil, and the strength of the team employed to do the

work. Drill husbandry, especially for wheat, is preferable to the practice of sowing the seed broadcast. Where the drill is used, the land should be previously lightly harrowed (singly would be sufficient), to impart to the soil an even surface.

In some parts of the country the growing of clover seed, owing to the influence of early autumn frosts, is attended with risks, that make it a most difficult and unprofitable crop to cultivate. This objection, however, may be removed, by pasturing the clover the first year, to about the 15th of June, and by delaying the top dressing of gypsum until that period, a crop of clover seed may be brought forward to full maturity, before the season for early autumn frosts arrive. When this plan is adopted, the second year's crop will be required for hay, which need not be cut until about the middle or latter end of July. The young clover, or *aftermath*, must not, in this case, be fed off, but during the last week in August and first week in September should be ploughed under, with a deep, well proportioned furrow, averaging, at least, seven inches in depth, by ten inches in width. None but the most skillful ploughmen should be allowed to perform this work, for the character of the wheat crop will mainly depend upon the style and execution of the ploughing. If the growth of the young clover be large, it will either have to be partially fed down before being ploughed, or else a heavy drag chain will require to be used before the plough, in order that the whole of the grass may be neatly covered in. When only one furrow, as in this case, is given a clover ley for wheat, it is decidedly an excellent plan to follow the plough with a heavy press roller. There are a number of methods of constructing this implement, but the one in most general use consists simply of two wheels, about three feet in diameter, which present on their surface a sharp-edged appearance, somewhat resembling that formed by two saucers, the bottoms of which are both turned outwards. These wheels, being suspended on a common axle in the centre, are made to pass after two ploughs, and are drawn by one horse. If made of cast-iron, few or no stones would be required, to cause the required pressure; but if constructed of oak plank, and covered on the edge with sheet iron, a considerable weight of stones would be necessary, to give the required solidity to the land. Where the plan of giving only a single furrow is practiced, and a large quantity of young clover is ploughed in, a period of at least ten days ought to elapse before the seed be sown; and hence, in this northern climate, the business of ploughing the seed furrow should be commenced not later than the 20th of August.

Growing alternate crops of wheat and clover may be practiced with admirable success upon

some soils. On limestone gravelly land, or where the subsoil contains a very large amount of carbonated lime, wheat and clover may be grown in alternate years for a long period of time, without any diminution in those crops. Where this system is practiced, there is a great danger of the soil becoming foul, with wild grasses, and to prevent which there are a variety of means that may be practiced with success. By sowing from seven to eight pounds of clover seed per acre, on the wheat plants, in the early part of spring, or before the snow has fully left the ground, the clover plants will take a strong, deep root in the soil, and, by employing a top dressing of plaster, salt, and house ashes, equal to a bushel of each of the two former and two bushels of the latter, to be applied broadcast upon the land, the early part of the following spring a heavy growth of clover hay may be expected, which will in most cases be an effectual smothering crop, or a destroyer of every description of noxious weeds. As soon as the clover is harvested, the sod may be broken up very lightly, and worked, after the roots of the clover have become partially rotted, with a steel cultivator, to as great a depth as the strength of the team will admit. Two or three such workings, with a steel-teeth cultivator, during the month of August, will effectually destroy the roots of weeds and grasses, and make the land in as clean a condition for wheat as if it had been subjected to the expensive and useless process of a naked summer fallow. There will, however, be some difficulty in manuring the land for wheat, where this system is carried out extensively, and to obviate which, the barn-yard manure, that is not employed in the cultivation of root crops, may be spread broadcast upon the wheat, during the early part of winter, or as soon as the land is sufficiently frozen in autumn to bear the horses and waggon. A dressing of this kind upon wheat will ensure a strong growth of plants, which, by the aid of a liberal supply of seed, will prove, as in the case of the clover, a smothering crop to most kinds of weeds. Besides, the clover plants will be of a luxuriant growth, the seed having been sown upon the manure on the surface, which, from their broad leaves and their tap roots, will aid materially, even with the wheat crop, in keeping down weeds. Manuring the land for wheat is not to be commended where the rust usually attacks this crop; but in the case of using it as a top dressing on wheat, in the manner here described, it should have previously passed through its first stages of fermentation, and have thus evolved those gases that cause a gross appearance to the plants; and, besides, from the manure laying on the surface of the ground, only the juices thereof reach the rootlets of the plants, by which they are regularly fed with food in every respect

fitted to promote a healthy growth up to the period of maturity.

When wheat and clover are grown alternately upon the same land, the drilling of wheat, as in the other methods of growing it after clover, without making a naked fallow, may be practiced; but the land cannot be cultivated between the rows of wheat with horse hoes, as might be done with great profit, if it had not been previously sown down with clover. This, however, is not so much of an objection as might at first sight appear, for the simple reason that horse hoeing wheat, as yet, is not practiced by Canadian farmers, nor is it likely it will be for some time to come, unless some spirited farmers in each Township adopt this efficient system of increasing the productiveness of their soil.

It is only under very favorable circumstances, and on soils naturally adapted for the growth of the wheat and clover plants, and which also contain a very liberal supply of the requisite properties, or food, for their full development, that the alternating system of cropping land with these two crops can be long successfully practiced. When the soil becomes comparatively exhausted of the natural elements for the sustenance of certain plants and vegetables, it is a very common expression to say that it has become *sick* of such crops. In the best wheat growing districts of Canada, wheat has become the prevailing crop. The rotation which is often practiced is summer fallow, wheat, oats—summer fallow, wheat, and oats, or some other spring grain crop; and so the story is repeated, by the simple addition of giving a heavy dressing of barn-yard manure to the summer fallow, and by ploughing for all the crops a shallow furrow, of five or six inches in depth. Under such farming as this the soil soon becomes *sick* of wheat, and the farmer, by growing diseased and unprofitable crops, becomes equally *sick* of his profession, and so between the soil and its owner, a mutual agreement is entered into to dissolve an unprofitable co-partnership; and its new proprietor, by deep ploughing, drilling his crops, clean culture, a rational rotation, or one suited to the character of the soil, and by husbanding his manure, and applying it to those crops that most require it, is shortly able to bring up its productive qualities to as high a state as when first brought into cultivation from the forest. In few cases have the land in Canada become *sick* of clover; and it would be well for those who want to *tax*, to a greater extent than they have done, the productive powers of their soil, to cultivate the clover plant much more extensively than has heretofore been done. By the practice of either trench or subsoil ploughing, or by even ploughing a very deep single furrow, the roots of the clover plants will strike deep-ly into the subsoil, and become of very large

growth, somewhat resembling a crop of carrots of a stunted growth. The tops of the clover plants will of course have a corresponding growth to that of the roots; and the latter, in undergoing decomposition, make the best possible food for the wheat plants.

The next paper, on the question under discussion, will embrace the writer's views on substituting the pea crop for a naked fallow, as a preparative crop for Fall wheat.

MANUFACTURE AND PREPARATION OF BUTTER FOR MARKET.

The business of manufacturing and preparing butter for market has not heretofore been conducted so strictly upon the most enlightened practice, as their interest, and likewise that of the country, would upon a close examination of the subject, seem to have been done. Firkin butter should have been, by this time, a very important article of export to England; certainly a considerable quantity is annually exported, but long before it reaches the British market, it becomes so rancid, and unfit for table use, that in undergoing inspection, it is *branded "grease,"* and as such is sold in the market to the manufacturers of soap, and for other inferior purposes, at a greatly depreciated value. The average price paid to Canadian farmers by merchants, for firkin butter, may be fairly rated at 5d. currency per lb., just exactly half the price that is paid in North Holland, Europe, to the farmers of that country for tub butter, as an article of export to England. The business of manufacturing butter among the Hollanders, for the British market, receives quite as much attention at their hands as does the production of wheat in this country, by Canadian farmers for that market. A Dutch dairyman in an average of cases, keeps from twenty to thirty cows, which are kept with quite as great expense and care as are bestowed by Western Canadian farmers on their horses. Those cows are small, and in point of appearance, would, in some respects, compare with the famous Ayrshire cow of Scotland; and they have, for a long period, been scrupulously bred for the dairy, until the highest point of perfection, in all the qualities essential for profitable dairy purposes, have been obtained. The great secret, if secret it may be called, employed in that country, in making superior,

long-keeping, and highly-flavored butter, is to be found in the *cleanliness, and nicety in keeping the milk, cream, vessels, and apartments* for making, and storing the butter when made. The butter is thoroughly worked by a ladle until all the buttermilk is extracted. Salt produced from the evaporation of sea-water, and not that which is obtained at the Salt Springs, is used, and after it is added to the butter, and worked well in with a ladle, the brine produced from the operation of salting is dried off, by pressing clean linen towels on the butter. When butter is intended for a long sea voyage, it is packed in firkins made of well-seasoned old oak casks, which are thoroughly scolded in hot brine before being used. The bottom and sides of the firkin are rubbed with fine salt, and the butter is so firmly packed that no cavities, nor brine are allowed to remain between the layers. When the vessel is filled, a layer of salt is spread on the surface, and a clean sheet of white paper being placed over the salt, and the top fastened on sufficiently tight to prevent the admission of air, complete the whole process.

In a late number of the *New York Farmer and Mechanic*, an admirable article on butter-making and packing appeared in its editorial columns. The principal feature of the method advanced by the writer, consisted in using a "composition" as it was styled, for curing butter, which "makes it taste sweeter, richer, and more marrowy, than portions of butter cured with common salt." This composition is made as follows:—take of sugar one part; of nitre one part, and of the best rock salt two parts; beat the whole into fine powder; mix them well together, and put them by for use. Of this composition one ounce should be added to every pound of butter, and completely mixed, as soon as it is freed from the butter milk. The other means employed for packing recommended by the writer, were the same as those used in Germany. In the *Maine Farmer*, which, by the way, is an ably conducted paper, a rather novel mode is given by Col. Craig, of Readfield. The butter is packed down solidly and carefully in firkins, and a clean cloth fitted on the top of each, before the covers of the

firkins are closed down. He then takes a clean hogshead or large cask, and places a layer of salt on its bottom. The firkins of butter are then packed carefully in the hogshead, in such a position as not to touch each other, and the interstices are filled with salt, until the firkins are covered, and this process is repeated until the hogshead or cask is filled with the small casks and salt, after which it is headed up, and allowed to remain in that state until the butter is required for use, or is sold in market. Butter preserved in this way, has been kept for a long period, and during the hottest weather, and when overhauled for the purpose of selling it, butter, tubs, and everything connected therewith, have been invariably found as sweet and nice as when packed.

Valuable lessons from the foregoing, might be turned to some practical account by country merchants and others in the butter trade. But in a great number of cases, the fault does not so much rest with the dealers in the article as it does with the dairywomen themselves, who make and prepare it for market. To get up a character for Canadian butter, let a commencement in the right direction be made with the manufacturers, and then if no higher appellation than "grease" can be earned for it at the hands of the Board of Inspectors in England, the fault may, with greater propriety, be attributed to the carelessness of the merchants.

Agricultural Societies, from the highest to the lowest, should encourage the business of manufacturing butter for export, and by so doing a very short space of time will elapse before this country becomes famous for the production of good butter.

ACKNOWLEDGMENT.

We would return our thanks to such of our Cotemporaries as have taken notice of our Journal; and as its success *wholly* depends upon its merits, we hope they will from time to time give an expression of their opinions, so that *Farmers and Mechanics* may judge how far we are entitled to their support and encouragement.

THE COW—HER DISEASES AND MANAGEMENT.

Inflammation of the Bowels.—This disease generally arises from the animal catching cold, particularly from being over-driven just before calving, it is also produced by costiveness, both of which causes should be well ascertained before proceeding to the treatment.

The animal is taken with a cold shivering, at first, loathing her food, and seems to be full. She is then seized with violent pains, resembling the "gripes;" the eyes and inside of her mouth are red and inflamed; she often lies down, and rises of a sudden; a purging soon comes on, and what is passed of a blackish, or coffee color, with a very offensive smell, more so than that of a common "scouring;" the dung is also mixed with a mucous having an appearance of putrified skin, as also, does the inner layer of the intestines, which seems in the last stage of the disease, to be separated from the other. The pulse, in this disease, is always low, and the extremities of the animal feel cold.

When the malady is attended by looseness, and arises from cold, the treatment consists first of blood-letting, to the extent of a pint and a half to two quarts, according to the violence of the symptoms, and the size or condition of the animal; and directly after, a dose of the following medicine, mixed together, and given in two quarts of smooth gruel, in which there has been previously dissolved an ounce of common soap:—

Epsom salts, $\frac{1}{2}$ lb.; crude opium, $\frac{3}{4}$ drachm; saltpetre (nitre), $\frac{3}{4}$ oz.

This dose will be generally sufficient to remove the violent symptoms of inflammation; and that being done, the following medicine will then be proper to restore the bowels to a healthy state:—

Prepared alkali (sub-carbonate of potash,) $\frac{1}{2}$ oz.; saltpetre, $\frac{3}{4}$ oz.; camphor, $1\frac{1}{2}$ drachms, anise seed, $\frac{1}{2}$ oz.; laudanum, $1\frac{1}{2}$ drachms.

Mix the whole, and give it in a quart of gruel, wherein an ounce of isinglass has been previously dissolved; the dose to be repeated, if the symptoms require it, twice or three times a day.

If the disease is attended by costiveness, the following dose will be more proper:—

Sulphur, $\frac{3}{4}$ lb.; saltpetre, $\frac{3}{4}$ oz.; anise seed, and coriander, each, $\frac{3}{4}$ oz., powdered ginger, $\frac{3}{4}$ oz.

The whole to be mixed in two quarts of gruel, in which two ounces of Castile soap have been previously dissolved, to which may also be added, a pint of cold-drawn linseed oil. This medicine may be repeated in twenty-four hours, with half the quantity, if the obstruction is not removed by the first dose. When the

violence of the disease is thus got the better of, the sulphur may be continued in small doses, mixed with $1\frac{1}{2}$ drachms of camphor, and $\frac{3}{4}$ oz. each, of anise seed and cumin

During this disease, the cow should be kept on diluent food, with plenty of Indian-meal gruel, and other thin drinks, which should be warm, in order to assist the operation of the medicines.

Dysentery, or Bloody Flux.—The most formidable of the inflammatory diseases, is the "dysentery," "bloody ray," or "flux." The most common cause of this complaint is cold suddenly applied to the body when over-heated; hence it is apt to follow over-driving, and whatever, by suddenly lowering the temperature of the animal, checks the circulation at the surface, and determinates it to the bowels.

This malady is distinguished by the excrements being mixed or tinged with blood; there is also discharged, as in the case of "Inflammation of the Bowels," a kind of putrid skin towards the termination of the disease. This complaint is also marked by the suddenness of its attack, and the very offensive smell the excrements give out. Along with these symptoms, there prevails a quick prostration of strength, and all the other marks in the dry state of the skin and coldness of the body, which have been noticed in the last preceding disease.

In the cure, the first step to be taken, in order to check the symptoms of inflammation, is to blunt the acrimony (severity,) of the discharge, and to promote the perspiration of the skin.—To check the symptoms of inflammation, bleeding is the great means, immediately applied, and proportioned in quantity to the strength and condition of the animal; but it will not be proper to repeat it more than once, from the rapid tendency of the complaint to mortification. It will, therefore, be more advisable to give a small dose of Epsom salts, mixed with a certain portion of opium, &c., in order to allay the pain, which is usually violent, as in the following prescription:—

Epsom salts, $\frac{3}{4}$ lb.; crude opium, $1\frac{1}{2}$ drachms; nitre, $\frac{3}{4}$ oz.; camphor, $1\frac{1}{2}$ drachms.

To be given at one dose in two quarts of water gruel, and repeated until the symptoms begin to abate. In order to allay the irritation of the bowels, oils and mucilages should be administered; and the formula which is best adapted here is cold-drawn linseed oil, $\frac{1}{2}$ pint; isinglass $\frac{1}{2}$ oz.

The isinglass first to be boiled in a pint of skimmed milk, till it is dissolved; then add the oil to it; to be given twice a day. By these means, the more violent symptoms will disappear. The obstruction of the surface is next to be relieved, as a principal point towards com-

pleting a cure. The medicines most successful for this purpose are,

Nitre, $\frac{3}{4}$ oz. ; camphor, $1\frac{1}{2}$ drachms ; opium, $1\frac{1}{2}$ drachms ; tartar emetic, $\frac{1}{4}$ drachm.

To be mixed together, and formed into a ball, given at one dose, and repeated twice a day.

In this, and most other complaints of the bowels, attended with inflammation, it is of much importance that the intestines should have as little to do as possible. The quantity of drink should not be large, and the diet should consist chiefly of gruel and warm washes sparingly given.

Inflammation of the Liver.—This disease arises chiefly from two causes ; the first is, being heated from over-driving the animal when very fat, which is liable to take place when the weather is excessively hot. The second cause arises from some external injury, as a knock, or bruise, which occasions the liver to swell and inflame. The consequence of this disease very often brings on dropsy, or decay of the body, and the more the internal part of the liver is affected, the more dangerous the complaint.

The disease may be generally known by difficulty of breathing, sometimes a swelling is felt about the short ribs, and an uncommon fullness about the region of the womb ; the pulse is intermitting, attended with symptoms of fever ; the urine is of a yellowish color, and the animal appears as if griped.

The treatment of this malady is to be conducted in a similar manner as the other inflammations before described ; but as costiveness is here a leading symptom, the state of the bowels requires a very marked attention. Immediately, then, after bleeding, which should be the first step, let a cooling purge be administered, composed of the following mixture, to be given, at one dose, in two quarts of water gruel, with a pint of molasses, and repeated until the costiveness abates:—

Flour of sulphur, 9 oz. ; camphor, $1\frac{1}{2}$ drachms ; nitre, $1\frac{1}{2}$ oz. ; anise seed and cumin, $\frac{1}{2}$ oz., each.

In two hours after the drink is administered, a pint of linseed oil is to be given in a quart of strong decoction of camomile flowers, in which an ounce of gum Arabic has been dissolved.

These leading measures being premised, the cure is to be finished by the use of diuretics (medicines tending to produce a discharge of urine,) of which the following has been employed with success:—

Castile soap, $\frac{1}{4}$ oz. ; powdered anise seed $\frac{1}{2}$ oz. ; powdered valerian, $\frac{1}{2}$ oz. ; camphor, $1\frac{1}{2}$ drachms ; nitre $\frac{1}{2}$ oz. ; fenugreek, $\frac{1}{2}$ oz. ; sweet spirits of nitre (spirits of nitric ether,) 6 drachms.

To be given in two quarts of water gruel.

This dose is to be repeated once or twice a day, till the swelling of the liver, and the other symptoms depart. The food to be given in this case, should be the same as that recommended for inflammation of the bowels ; and the animal may be indulged in drinking warm water, or gruel, as often as she is inclined to take it.—[American Agriculturist.

CHEMISTRY AND AGRICULTURE.

The greater part of practical knowledge being derived from observation and experience, the scientific principles on which the facts are founded are always the part that is learned last, and no person is capable of taking a comprehensive grasp of these principles and of their application, unless the mind be stored with a most intimate knowledge of the practice in every detail. This observation is applied to every practical art, and to none more strictly than to agriculture. The science of the art is only now being learned, and chemists are busied in discovering in what the effects consist that have been established by experience. All chemical action is combination or union, and decomposition or separation ; light and heat often appear as the new arrangements take place ; heat is disengaged and often absorbed, and a change of temperature happens. Bodies that have little or no affinity, and do not enter into combinations, are made to do so by the addition of one or more substances ; and this principle shows the necessity of applying a number of substances at one time, and of bringing them into contact with each other in a state of minute adherence. Many kinds of chemical action are effected by heat, electricity, and other agencies over which any control is impossible, and which do not take place from any diminution and mixture ; yet by that process a ready accession of means will be afforded of producing combinations, which in another state of existence of the substances, would not have happened.

Chemical affinity is reckoned a case of electrical attraction, and that bodies combine from being in opposite electrical states. A decomposition consequently proceeds from the same electrical condition. Though usually reckoned the same, electric attraction may be termed the principle in action, and chemical affinity the power by which bodies unite—the one being in this sense a measure of the other. All chemical forces are subordinate to the cause of life, and to heat and electricity, and to mechanical friction and motion. The latter power is able to change their direction, increase or diminish their tendency, and also to completely stop and reverse their action. But causes must exist to produce chemical affinity, or the cycle of life would stand still ; and from our ignorance of these causes, and of the application, it is proba-

ble that in many cases their action is arrested and stopped, and often rendered useless, not produced at all, or at best but accidentally, arising from our proceedings not being yet based on definite or measured causes.

I have ever been of opinion that the want of practical knowledge effectually prevents the professors of chemistry from rendering any tangible assistance to the performance of agriculture. To teach an art simply by itself, and to state and explain the science, or the systemised experience of it, is a simple process; but to use it in relation with another that is either allied or remote, is a widely different subject, and requires a thorough and most intimate knowledge of the nature and properties of both objects which are sought to be connected. And the want of practical knowledge will ever disable the chemist from being useful to agriculture.

Chemists expect that their art will effect in agriculture the same results as in medicine, where the inert ligneous matter formerly so hurtful to living organs by its decomposition, has been separated in vegetable products, and the active principle has been presented in a pure crystalline form. But the circumstances are wholly different: no living body will suffer without harm the contact of decaying matter; but the earth is a dead receptacle, and can sustain no injury from that process. On the contrary, the inert ligneous matter affords by its decomposition, the materials or body on which the refined manure must act in the soil. A medicine supplies no food to the body, but modifies the action of the functions of its organs; and food must be provided in order to develop its effects. The most concentrated and powerful manure would produce no effect on pure earths or oxides; nor could medicine exert any influence on the original constituents of an animated body without the living mechanism of muscular fibre and functional organs.

Now, instead of informing us of what elements the substances of crops and manures are formed, it would be much more likely to forward the art of cultivation if the time was spent in bringing different bodies into contact, observing the affinity, marking the effects of the reciprocal action, and converting into use the new combinations that are known to result from chemical action. It would even be useful to know where an affinity existed, or where a repulsive quality was inherent; between what bodies an easy union is effected, and in what cases a peculiar quantity is required, and a certain quantity of materials necessary. We yet know very little of the power of acids in dissolving bodies, and in rendering them minutely transmissible; the application to bones is only a beginning. And we are only beginning to think of the benefits that may happen from mixing manures with the soil.

It is the business of Government, or some powerful society, to employ some scientific men on such points; but, unless they also be practical men, the labour would be useless, for the reasons now mentioned.—[Farmer's Herald.]

WHAT COWS SHOULD FARMERS KEEP?

As regards answering the above inquiry fully and satisfactorily, we confess our inability to do that justice to the subject which its importance demands. And we can assure the numerous readers of the *Farmer* that it would give us great pleasure to see it answered by some of their abler and more experienced pens. Our rate we know is small, but nevertheless it shall never be withheld so long as improvement is counted among the things that are.

There is too little regard paid by most farmers to the breeding and raising of domestic animals; and in no one instance can we see a greater chance for improvement, and one which would be attended with more pecuniary profit to the farmers themselves, than in the selection of their cows. Upon these the value and merit of their entire herds, in a great measure, depend—and we have yet to see that farmer who keeps good cows whose other stock does not approach the just standard of perfection, in proportion to their excellence.

But what are the qualities necessary to constitute a good cow? A good milker alone does not, in our judgment, make a good cow; neither does a good breeder nor a good feeder. It is these three qualities combined that make the cow. Give us a cow that is good for milk, quality as well as quantity considered—that, when properly bred to good bulls, will invariably produce good calves, and one that when dried of her milk will, with proper care and attention, take on flesh rapidly and evenly,—and for one we will rest for a while, at least, satisfied. And until we can raise up an entire herd of cows, each one of which shall possess all of these excellencies, our aim shall be to advance in improvement until we accomplish our object.

To possess the first of these qualities a cow should have a fine head, a little wide above the eyes, but quite small below, and appear somewhat long. Her nose should be of a rich yellow colour, or at all events not black; (we do not know of any full blooded stock, of any breed, with black noses, but they will frequently appear on stock as high bred as fifteen-sixteenths. Her neck should be very small where it joins the head, but widening and deepening as it approaches the shoulders and brisket.—Her udder should be of good size, well covered with long soft hair, and not inclining to fleshy; large milk veins, and small delicate horns

—they may be long in some breeds, but they should be fine, and she should have a yellow skin.

To be a good breeder she should, in the first place, be descended from good stock, and the farther back you can trace her from good stock the better. She should possess all the before mentioned milking qualities, with a broad straight back, wide loins and hips, long deep quarters, round ribs, small bones in proportion to her size, deep and full brisket, fore legs wide apart and short; and lastly, she should be a *good handler*. A cow that is a good handler will also almost invariably produce rich milk; and if a first-rate handler, and possessing the before mentioned points, she will be invariably a *good feeder*. This handling quality is, or has been, too much overlooked by breeders and judges at our Cattle Shows. Judges that will give their decisions for premiums on stock, without even touching an animal, are, in our opinion, unfit for their office. We should not think of purchasing a cow for milk, stock and beef, without knowing her to be a good handler. She may be a good milker without it, a tolerable breeder and feeder,—but we have never yet owned a cow that was a bad handler that possessed the three qualities combined. We term a cow a good handler that possesses a loose mellow skin, rather thin, well covered with fine soft hair—so that the hand, when laid flat upon the ribs and brought together, shall be easily and pleasantly filled. The skin should also be loose and mellow upon the back and hips. We have been thus particular as to the handling quality, as, from our own observation, we do not believe there is one person in five who keeps stock, that knows anything about it; and we also acknowledge our own ignorance, and hope to get some light from the numerous readers of the Farmer.

We never yet owned but one cow that came any where near suiting us, (and we have owned, and still do, some that we consider much above an average.) This is a three year old heifer, a full blooded Durham, purchased of Mr. Vail, of Troy, last fall. We paid \$150 in cash for her, and I believe her to be the cheapest property we ever bought—and now that we know her worth we would not part with her for twice that sum.

In conclusion we would just say to those farmers wishing to procure right stock, go and see Mr. Vail's herd, which now numbers some 60 head, all full blood Durhams. We thought them about right last fall, and now, with the addition of his young stock, and those purchased of Mr. Prentice (which Mr. P. reserved as the best from his entire herd, at the time of his great sale a few years since,) we think they cannot be surpassed if equaled in this country. They are worth a good journey, just to look at. Try it, and see if you are not satisfied.

SANDFORD P. CHAPMAN.

FATTENING ANIMALS.

There are some rules which may be advantageously adopted in feeding animals, which, however obvious they may be, are too often passed over or neglected. Some of these will be specified; and

1st. *The preparation of Food.* This should be so prepared that its nutritive properties may be all made available to the use of the animal, and not only so, but appropriated with the least possible expenditure of muscular energy. The ox that is obliged to wander over an acre to get the food he should find on two or three square rods; the horse that is two or three hours eating the coarse food he would swallow in fifteen minutes if the grain was ground, or the hay cut as it should be; the sheep that spends hours making its way into a turnip, when if it was sliced, it could be eaten in as many minutes; the pig that eats raw potatoes or whole corn, when either cooked, could be eaten in one-quarter of the time—may indeed fatten, but much less rapidly than if their food was given them in a proper manner. All food should be given to a fattening animal in such a state, that as little time and labour as possible, on the part of the animal shall be required in eating.

2d. *The Food should be in abundance.*—From the time the fattening process commences, until the animal is slaughtered, he should never be without food. Health and appetite are best promoted by change of food rather than by limiting the quantity. The animal that is stuffed and starved alternately, may have streaked meat, but it will be made too slowly for the profit of the owner.

3d. *The food should be given regularly.*—This is one of the most essential points in feeding animals. If given irregularly, the animal indeed consumes his food, but he soon acquires a restless disposition, is disturbed at every appearance of his feeder, and is never in that quiet state so necessary to the taking on of fat. It is surprising how readily any animal acquires habits of regularity in feeding, and how soon the influence of this is felt in the improvement of his constitution. When at the regular hour the pig has had his pudding, or the sheep its turnips, they compose themselves to rest, with the consciousness that their digestion is not to be unconsciously disturbed, or their quiet broken by unwonted invitation to eat.

All creatures fatten much faster in the dark than in the light—a fact only to be accounted for their greater quiet. Some of those creatures that are most irritable and impatient of restraint while feeding, such as turkeys and geese, are found to take fat on rapidly when confined in dark rooms and fed at stated hours by hand. There is no surer proof that a pig is doing well,

than to see him eat his meal quickly and then retire to his bed, to sleep or cogitate until the hour of feeding returns.—[Alb. Cult.]

LIQUID MANURE.

It is now a pretty general belief among farmers that there is "some good" in liquid manures; but, somehow or other, we never see much preparation either for the collection or application of this, the cheapest and most valuable of all manures; and we verily believe that the subject is, as yet, scarcely thought of—in a way to lead to any practical result, by one *bona fide* rent-paying farmer out of a thousand. Now, having for several years been an experimenter in this way, and sensible of the very great importance and value of liquid manures, I shall here take the liberty of throwing in my mite to the general fund, by communicating the little I have gained by experience to my fellow-farmers.

As I discard all chemical formula—the tank, watering-cart, and other *et ceteras*, from my system, and attach the fertilizing ingredients to a substance which farmers can actually work in with spades and shovels, I have more hope that my plan will be followed.

Chemists, generally, do not tell us the reason why liquid manures will not do much good when applied in a fresh state, though this is perfectly plain to all reflecting men. Liquid manure, if applied upon a pervious or gravelly soil, in a fresh state, is not retained long enough for its decomposition to take place, or for the roots to drink it up. It is put on a liquid manure, and runs off in the same state, but apply it to a soil rich in decayed or decaying vegetable matter, and on which a vigorous vegetation is going on, and it never fails of its extraordinary effects. The plan of administering liquid manures in a perfectly fresh state is probably the best of any, were it not for the continued care and consequent expense necessary in supplying our crops with saturated water in all their stages throughout the year, and were we certain of the exact strength of the solution suited to their wants. As we, therefore, cannot apply our liquid manures on the best principles, on account of the expense, we must try the next best plan, that of decomposing them, by the aid of decomposed vegetable matter; and this can happily be done, to great perfection, by reducing the vegetable matter to a state of carbon or charcoal—which we make from peat, as being trifling in expense, easily pulverized, and withal an excellent manure of itself.

We divide a shed into two compartments, one of which we make water-tight, by puddling the side walls with clay to the height, say of two feet, and separated from the other compartment by a low water-tight wall or board-

ing. This is my fermenting tank, which is filled half or three parts full of pulverized burnt peat, and the liquid manure from the stable, pig-styes, &c., directed into it. This is mixed up with the pulverized peat, and allowed to remain three or four weeks, till the decomposition seems about completed, being occasionally stirred about after the composition has become about the consistency of gruel. The whole is then ladled with a pole and bucket over the low partition into the second floor, which is also three-parts filled with carbonized peat; and as the second floor is meant merely as a filter, we have it lower on one side than the other, by which means in the course of a day or two, the carbonized peat is left comparatively dry. The water having passed off at the lower side, the first, or fermenting floor, is again gilled as before, and the contents of the second floor, if considered saturated enough, are then shoveled up into a corner, and allowed to drip, and further dry till used, which may be either immediately, or at the end of twenty years, as scarcely any thing will affect it, if not exposed to the continued washing of pure water, or exposed to the influence of the roots of growing plants. By being thinly spread on a grainery floor it soon becomes perfectly dry, and suited to pass through drill machines.

The mixing of the carbonized peat with the liquid manure on the first, or fermenting floor, it will be observed, is for laying hold of the gaseous matters as they escape during the fermentation; perhaps other substances may effect this more effectually, but none so cheaply. I think by this plan it will be obvious to every one that a great many desiderata are at once obtained. In the first place you get free of about 956 parts out of every thousand of the weight and bulk of manure, by the expulsion of water; while at the same time you link all the fertilizing properties contained in it to one of the most dandy vehicles—light, cleanly, and portable, and possessed of the peculiar property of holding together the most volatile substances, till gradually called forth by the exigencies of the growing plants. Lastly, you get free of the nasty tank, and the hogshead, and the watering cart, with all its appendages, and are no more bothered with an overflowing tank or over-fermenting liquid, with weather unsuited for its application. You have merely to shovel past the saturated charcoal, and shovel in a little fresh stuff, and the process goes on again of its own will; while the prepared stuffs lie ready for all crops, all seasons, and at all times.

The solid matter in the urine of the cow is estimated, by very high authority, to be equal in value to its weight of South American guano.

I beg my fellow-farmers clerly to understand that I make no pretensions to this plan of

applying liquid manure being a new discovery ; it is merely a modification of your old and tried plan of bottoming your dung-hills with peat ; but, by charring, the peat is freed of its anti-septic qualities, and thus becomes of itself a much better and speedier manure, and an admirable filter. But even peat, thoroughly dried, and perfectly pulverized, I have no doubt might answer the end indifferently well. [Inverness (England) Courier.

WEIGHT OF LIVE CATTLE.

It is frequently a matter of importance to ascertain the weight of living cattle, when the means of weighing them are not at hand. It may be obtained with sufficient exactness by the following measurements :—

Take a string and put it round the animal, standing square, just below the shoulder blade. Measure on a foot rule the feet and inches of its circumference. This is called the girth.

Then with the string measure from the bone of the tail which plumbs the line with the hinder part of the bullock, directing the line along the back to the fore part of the shoulder blade. Take the feet and inches on the foot rule as before. This is called the length.

Then work the figures in the following manner. Girth of the bullock, say 6 feet 4 inches. Length, 5 feet three inches. Multiply them together, and the result is 31 superficial feet. That again multiplied by 23, (the number of pounds allowed to each superficial foot of cattle measuring less than 7 and more than 5 in girth.) makes 713 pounds. And, allowing 14 pounds to the stone, is 50 stone 13 pounds.

When the animal measures less than 9 and more than 7 in girth, 31 is the number of pounds allowed to each superficial foot.

Again, suppose that a pig, or any small animal, should measure 2 feet in girth, and 2 feet along the back, which multiplied together make 4 square feet. That multiplied by 11, the number of pounds allowed for each square foot of cattle measuring less than 3 square feet in girth, makes 33 pounds. Which, divided by 14, to bring it to stones, is 3 stone 2 pounds.

Again, suppose a calf, a sh. sp. &c., should measure 4 feet 6 inches in girth, and 3 feet 9 inches in length. These multiplied together, make 16½ square feet. Which, multiplied by 16, the number of pounds allowed to each square foot of cattle measuring less than 5 and more than 3 feet in the girth, makes 264 pounds. Which, divided by 14, brings it to stones, and makes 18 stone 13 pounds.

The dimensions of the girth and length of cattle, sheep, hogs, calves, &c., may be as exactly taken in this way as is necessary for any computation or valuation of stock, by any one

who knows the rudiments of arithmetic, who can get a string and procure a piece of chalk. A deduction of one stone in twenty must be made for a half fatted animal, from the weight procured by measurement of a fat one.—[Southern Planter.

Horticultural.

HORTICULTURE.

The season being now over for practical operations in the garden and orchard, it would scarcely be thought requisite to devote much space to topics connected with the above branch of our paper. To all true lovers of fruit, information on every or all of the branches, of that highly interesting study and art, doubtless will at all times be acceptable, especially when the information is connected in a plain practical style ; therefore the space intended for that class of readers who desire information on the most approved system of orcharding and gardening, may at all times expect that it will be stored with the most useful information at command, whether that information can be put into practice at once or not. The following very useful remarks or instructions are selected from the description catalogue of fruits, &c., of Mr. George Lesslie, Nurseryman, Toronto :—

HINTS ON TRANSPLANTING AND MANAGEMENT OF TREES.

For the benefit of those uninformed on the subject, we subjoin the following brief directions, which, if carefully followed, will as a general thing, ensure success :—

1st. Before you procure your trees, prepare the ground you intend to plant, in the best style. If it be a border in your garden where you intend to plant the finer fruit or dwarf trees, trench it to the depth of two feet, turning in a liberal supply of old decomposed manure. If it be orchard trees, prepare your ground by a thorough deep ploughing ; if necessary, plough it twice or three times. It is much easier to put land in good order before trees are planted, than afterwards. But where circumstances will admit of it, orchard ground should be cropped one, or even two seasons before hand, with a

view to its improvement and preparation.

2nd. Prepare, in one corner of your field, a good heap of compost, by mixing fresh barn-yard manure, with an equal quantity of leaf mould from the woods, and muck or peat; a quantity of leached ashes, if convenient, may be added; and when the land is not naturally calcareous, a small quantity of lime. This makes an excellent manure for trees. We use it extensively and recommend it from experience. It is cheap and within the reach of every farmer.

3d. When your ground is thus prepared, and your compost heap in readiness, you are ready for planting, which should be done as follows:—Dig holes for your trees not less than three feet square, and two feet deep, throw the sub-soil aside, and fill into the bottom of the hole, sufficient fine, friable surface mould, mixed with a couple shovels full of the compost, to bring it to a proper depth to receive the tree.

4th. Prune off, carefully, all the bruised or broken portion of roots, and place the tree in the spot prepared for it, in a perfectly upright position, spread out the roots carefully in their natural order, and after having mixed two or three shovels full of the compost with the earth which should all be finely broken, fill it in. This must be done in such a way that every cavity will be filled up; when the roots are covered, a pail of water thrown in serves to wash the earth in among the roots; after the water has settled, fill in the remainder of the earth, and press it down gently with the foot; and thus the planting is completed.

5th. Trees should never be planted so deep but that when the earth settles, they will stand just as they did in the nursery.—Deep planting is much practised, and is fatal to the health and vigorous growth of trees. The upper roots should be two or three inches below the surface—not more in any case.

6th. In all cases were it may be apprehended that the wind will blow the tree about, so as to make an opening around the bottom, (as is the case generally with trees of even moderate size,) care should be taken to prevent it by tying the trees firmly to a stake, in such a manner as not to injure the bark. Some matting, or old cloth, may be put around the tree or between the tree and the stake, to prevent collision.

7th. WATERING is sometimes deemed necessary after spring planting, when a drought prevails; and, under such circumstances, if properly performed, may be very advantage-

ous. But the common method of throwing it on the surface, is labour lost, and worse. Instead of penetrating the earth and affording nourishment to the thirsty roots, it quickly evaporates and leaves the tree in a more likely state of perishing than it was before. The earth becomes baked and completely impenetrable to atmospheric influence, so essential to vegetable growth. To give water promptly and effectually, the surface should be removed to the depth of two or three inches, and the water then poured in, and the surface soil finely pulverized, replaced.

8th. MULCHING or covering the earth around the trees, as far as the roots extend, with litter or rough manure, to the depth of three or four inches, is one of the best methods of saving late spring planted trees. If trees are properly planted in the way we have directed, and the mulching is immediately performed, there is little danger of the tree, even if dry weather should ensue. It is much preferable to watering, but both are unnecessary except in cases of late planting, followed by dry, hot weather.

9th. AFTER CULTURE.—For several years after young trees are planted, the ground should be kept well cultivated around them, and if necessary, a top dressing of rotten manure should be spaded in by the extremity of the roots occasionally. Such attention as this will bring trees quickly into productiveness, while on the other hand, if they are neglected after planting, and the grass and weeds permitted to grow up around them and exhaust the soil of its nourishing properties, the trees become stunted, mossy, and most likely diseased, and if they are not cut down, they remain but to cumber the ground.

10th. PRUNING.—Trees in open orchard culture, require but little pruning. It is necessary to apply the knife, however, less or more, every season; suckers or shoots from the lower part of the tree, must be kept down; side branches springing from the body of the tree, must be removed; the head must be kept shapely and open, for the admission of light and air; and such limbs as cross each other, or rub against each other must be removed. This may be done at a leisure season of the year, before the opening of the ground. The stone fruits, cherry, &c., should never be cut or wounded in the spring when the sap is flowing rapidly, as then they are liable to “bleed” or “gum,” which frequently proves fatal to them. They may be pruned safely at other times—midsummer is

a good time, as then the wounds heal up rapidly.

11th. **DESTRUCTIVE INSECTS.**—The insects most annoying to the Horticulturist in our section are, the *Caterpillar*, *Curculio*, *Aphis*, and *Slug-worm*. The great point in destroying insects, is, *commence the work of destruction early*. The first mentioned, the *Caterpillar*, is a most voracious filthy insect. The clumps of eggs should be gathered and destroyed in March or April before they hatch; if allowed to hatch, which they do about the middle of May, their nests may be removed by the hand, early in the morning, while they are all at home; or as some practice, they may be destroyed by saturating them with ammonia, applied with a piece of cloth or sponge to the end of a stick which will reach into the tree.

The Curculio.—This is, in this country, the most troublesome of all insects to the fruit grower, the most difficult to subdue.—It not only preys upon the Plum, Apricot, Nectarine, but even attacks the Cherry, Apple and Peach. The destruction of this insect calls for the most persevering efforts of all who desire to grow fruit successfully. The most effectual remedies within our knowledge, and we have tried many, are the following, as soon as the insects enter on their labours, which is readily known by their mark on the young fruit, shake or rather jar the trees effectually, having a cloth spread under them to receive the insects when they drop. Kill the insects immediately, and throw the diseased fruit to the hogs—repeat this operation daily, in the morning, as long as any are to be found. We have seen fine crops of Plums saved by a proper following up of this method. It is recommended by some to strew salt on the ground around the trees early in the spring, in order to kill the insects in the ground before they emerge, and also at the time the injured fruit begins to drop, to kill the insect while moving from the fruit into the ground. We have no doubt but the application of salt in this way, will aid materially in arresting the ravages of this insect. Salt may be safely strewed around trees, to the depth of one-fourth of an inch or more, and if it does not kill the *Curculio*, it will at least act as a fertilizer of the soil. Salt is good for the Plum tree.

Aphides.—These insects infest the young shoots of the Apple, Pear, Cherry, Plum, &c., during the summer, as well as *Roses* and other ornamental plants—but they are easily

destroyed if taken in time. We use successfully, a mixture of soap suds and tobacco water, put on with a syringe or a white wash brush. For ornamental plants, where cleanliness is very desirable, a solution of Ammonia, (Smelling Salts) in water, in the proportion of about half an ounce to a quart, put on with a syringe, is one of the best applications known.

The Slug Worm attacks the foliage of the Pear and Cherry in the month of June, and if not destroyed in time, makes sad havoc. They may be destroyed at once by sprinkling them over with ashes or slaked lime. In destroying insects it is necessary to repeat all operations until the work is complete.

WHITEWASH ON FRUIT TREES.

A. J. Downing and others have given it as their opinion that an injurious effect is produced on fruit trees by the sun's rays, when they strike the body and limbs with direct force, while the sap is frozen, or when there are sudden changes from cloud to sunshine. The writer has not had sufficient opportunity for comparison to form a positive opinion in the case; but as it has been suggested that the application of whitewash to trees, would have the effect to refract the rays of the sun, and thus prevent the heat being communicated to the trunk and branches, it is proper to notice any experiments which have a bearing on the subject.

In the January number of the *Horticulturist*, the editor states that he took two thermometers which agreed perfectly; and to the bulb of one of them he applied a thick coating of whitewash and allowed it to become dry; the other was left as usual. The result is given as follows:—

“After being exposed for an hour to the full sunshine, the naked thermometer indicated 97°—the thermometer with the whitewashed bulb only 79°—being a difference of 18°.”

REMEDY FOR THE BOTTS.—A correspondent of the *Albany Cultivator* says:—“Having seen many horses die with Botts, and many remedies given without effect, I was induced; by a merchant in Cambridge, to try the following for a horse of my own, after I had tried most of the remedies in common use without effect, and had given him up for lost: Half pint vinegar, half pint soft soap, half pint of gin, and half pint of molasses, well shaken together, and poured down while foaming. To my great surprise, the horse was, in five minutes, wholly free from pain, and ate freely; the next morning I was on my journey. I have since re-

commended and given the same in perhaps fifty cases, with the same good effect; not in one instance has it failed to effect a perfect cure."

Mechanical.

MECHANICS.

From what was stated under the above in the first issue of our magazine, the subscribers will doubtless expect something new and interesting in each number. In the course of a few months there will be less difficulty than at present, in giving a rich variety of information upon the various branches of mechanics that would be applicable to this department. During the early stages of a periodical like ours, there are, of course, comparatively few exchange papers, and those, in few instances only contain information that would be adapted for this department of our work. With this difficulty staring us in the face, it is with a great degree of diffidence we undertake the task of begetting an interest among the mechanics of Canada in favour of a style of literature which we hope in some measure to be able to establish. Within a very short period, the editor expects to be in possession of regular files of the *London Builder*, the *New York Farmer and Mechanic*, the *Scientific American*, and a number of those admirable annual reports published by the Commissioner of Patents at Washington. When the foregoing are at hand, together with the information from the pen of the editor, it will be an easy task to compile four or five pages for each number, of most interesting and useful matter. In the meantime, the course that shall be pursued will be simply that of continuing the remarks commenced in the first number, under the head of Agricultural Mechanics. This, to the farmer, and those engaged in the manufacture and sale of implements and machinery for agricultural purposes, must prove at least interesting, if not useful. Those articles, al-

though written with considerable minuteness, can scarcely be expected to partake of that character which would entitle them to be considered sufficiently explicit to afford a correct data to the practical mechanic, enabling him to proceed correctly in the manufacture of the implement or machine described, without a further knowledge of the matter than that attempted to be given by the editor. Every implement or machine invented and employed, as a means of rendering aid to, or lessening, manual labour, by employing working drawings, might be described, in all their parts, with a sufficient degree of accuracy, to enable an ingenious mechanic to construct them with a tolerable degree of correctness; but, to illustrate subjects of this kind with a sufficient number of drawings to impart to the reader a thorough knowledge of the various parts of the machine described, would require an amount of space and expense for engravings, that would be quite incompatible with the original intention of this department of our magazine. Engravings, however, shall be furnished when the work becomes sufficiently patronized to warrant such an expenditure, of a suitable kind, to illustrate in the best possible manner, such matters as can better be described in this way, than simply by a written description.

The most important implement on the farm is the plough, and as there are such a variety of them, many of which have their several peculiar merits, and are, to a greater or less degree, adapted to the peculiar kinds of soils found in different localities, we shall, for the information of the reader, occupy a little space in discussing and describing the merits and character of some of those that are known to be superior to many others in use.

THE HISTORY AND CHARACTER OF THE SCOTCH WOODEN PLOUGH IN CANADA.

Forty years ago the only plough in use in Canada, was the old fashioned *barshare* plough, the one in fact that is universally

employed at the present day, throughout Germany and most of the grain growing countries in Northern and Eastern Europe. The cost of those ploughs was comparatively trifling, and as all the other parts, except the clevis, coulter, and share, were made of wood, that, too, upon the most simple mode of construction, any person at all acquainted with the use of edge tools, might completely wood and repair, when required, one of them; hence, on the score of ill-judged economy, they became not only in general use, but those who used them, clung to them with the greatest possible degree of tenacity. In the course of time the American patent plough gradually found its way into public favor, and within a very short period, not more than ten years, the *bar share* went entirely out of use. The American plough, with its short beam and handles, and short and broad share and mould board, although a more neatly executed piece of workmanship, was in many particulars inferior in point of merit, to its predecessor. Within a very short period from the first introduction of the American plough, the demand for them was so great that the business of manufacturing them became quite a mania among the principal foundrymen of the country; subsequently, those ploughs have undergone many changes in style of construction, and each have had their several admirers, and for a short time were popular until some new patent was puffed into notice by interested parties. A singular fact connected with these ploughs is here worthy of recording. The first that were introduced into the Canadian market were manufactured by Mr. Norton, of Toronto, and although twenty years have elapsed since that period, yet it has never undergone any improvement, nor has there been a plough of that style, that in every respect equals it. Those ploughs, however, are not exactly the thing for those farmers who desire to accumulate riches, from the products of their farms. Indeed no farmer

after becoming acquainted with the real character and merits of the Scotch plough, which shall shortly be described, would employ upon land that is freed from stumps and large stones, any of the improved American ploughs. For every practical purpose, there is as much difference in favor of the Scotch plough over the most improved American patent, not excepting the much celebrated Boston plough, of recent introduction, as there is between the American and the old-fashioned one-handled bull plough, in use in some of the townships of the Midland, and other eastern districts of Canada. All who are acquainted with their character will readily acquiesce in the above opinion. The strongest arguments that can be made use of to prove the intrinsic value of the Scotch plough over all others in use, are the following:—Wherever they have been brought into use, they have speedily driven all others out of the field; by employing them instead of the short-handled patent plough, a more neat and cleanly system of cultivation has been practised, thereby increasing the average yield of most crops at least twenty-five per cent; from the fact that the Scotch ploughs turn a very neat and well proportioned furrow, and also may be held with the least possible exertion, a spirit of rivalry has been produced among the young men of the country, in favor of good ploughing, which has resulted, in many townships, in increasing the productive powers of the soil to a very great extent, and in eradicating the roots of weeds and many noxious plants that formerly held firm possession of the soil.

The history of the American patent having been given, it would be quite in character with this article, to give some particulars in respect to the first introduction of the Scotch plough into Canada. On the farm adjoining the one occupied by the writer, in the year 1824, the first Canadian manufactured Scotch plough was put in operation; it was manufactured by the late Mr. John Gordon, whose name, for many years subsequent to the

above period, became favorably associated with the wooden one, and to whom many of the mechanics of the country, about twenty years ago, were much indebted for patterns. For the first four or five years great opposition was manifested by the old-fashioned farmers against the Scotch plough. Some argued in the first place that it was too expensive; that it was too long in the handles; that it turned too narrow a furrow; and that on striking a stone or other hard substance in the land, that it kicked, as they termed it, with such force as oftentimes to endanger the life of the ploughman. Regardless of these objections, and others of an equally imaginary character, sensible and thinking farmers did not hesitate to purchase, after seeing them once in operation by experienced ploughmen. The neatness with which they did the work, the thoroughly even surface that could be imparted to rough and uneven land; the fine tilth that was produced to the soil by the harrows passing once or twice over the surface of the furrows, by their being closely pressed upon each other, with a lap of four inches, and laid in an angle of inclination of about forty-five degrees; and, withal, the thorough command that the ploughman had over the implement, soon removed every objection that could be urged against its use. It has undergone, like the American plough, many changes or improvements, all of which have not, in the slightest degree, improved its working powers; in fact a number of manufacturers still prefer the pattern that was first manufactured by Mr. Gordon, to any of the improvements that have since been brought into market. There are an almost endless variety of patterns of Scotch and English ploughs in use in Canada, yet, as a plough for all work, and for every possible description and condition of soils, we have no hesitation in saying that the most approved one of those will not compare with the Gordon plough. One of the greatest points of merit this plough has over many others that are denominated Scotch ploughs,

is, that the mould-board is constructed upon such perfect principles that while it will turn a well proportioned furrow, say a six by nine inches, against an inclined plane where the fall is equal to one foot in five, and thoroughly pack each furrow respectively upon the last one turned, it nevertheless requires at least twenty-five per cent. less power to efficiently work it than many of the other ploughs that have been forced into use. Indeed, no plough can have a less amount of friction, when the dimensions of the furrow slice are directly taken into the calculation. In saying this much no disparagement whatever is meant to any particular implement, but from many year's experience and close observation, and a tolerable intimate acquaintance with nearly all the styles of ploughs, both wooden and iron, in use in Canada, the above opinion is frankly and advisedly given.

The remarks on ploughs might be profitably extended to a much greater length, but for fear of being considered tedious, we shall, for the present, bring them to a close, with the promise that they shall be resumed, at an early period, under the head of ploughing.

SALT.

One of the most prominent reasons why there is so much poor butter made, is, that the salt used is not good. Even the best of our salt contains a considerable quantity of impure matter. Rock and bay salt, which are considered the purest that can be obtained, are mixed with small quantities of sulphate of magnesia and lime, nitrate of soda, and muriate of magnesia. The following mode is recommended to render it pure:—

“Put into a large kettle a peck of salt, with clean rain water enough to dissolve it: boil it, and skim off every particle of scum that rises on the surface; then dissolve one ounce of the carbonate of soda in four ounces of water, put it into the kettle, stir it well, then boil it again for ten minutes, skimming off the scum that rises; then strain the brine through several folds of flannel. A considerable quantity of earthy matter will thus be found in the bottom of the kettle, which is the cause of the impurity. After having thus strained it, add a small quantity (half an ounce or so) of muriatic acid to the brine, to neutralize the soda; then put the brine again into the kettle, and boil it till it crystalizes, or in a shallow wooden vessel till the water is evaporated; the first is the quickest. After the salt is well crystalized, it must be washed, by putting it into a clean basket and

throwing over it a bucket of perfectly pure water, and let it drain off rapidly; then let it be dried. Perfectly pure salt can thus be obtained, suitable not only for butter, but for preserving meat, &c.; and the increased excellence thus secured will well repay all the trouble and expense of preparation. It can be rendered more pure than is usually bought, indeed, if the carbonate of soda should not be added; but it is still better when it is also used."

The Ladies.

WHAT IT IS TO BE POLITE.

Politeness is a trait which every one admires, and which confers upon its possessor a charm that does much to pave the way of life with success. But it is very much misunderstood. Politeness does not consist in wearing a silk glove, and in gracefully lifting your hat when you meet an acquaintance,—it does not consist in artificial smiles and flattering speech, but in sincere and honest desires to promote the happiness of those around you: in the readiness to sacrifice your own ease and comfort to add to the enjoyment of others. The man who lays aside all selfishness in regard to the happiness of others, who is ever ready to confer favours, who speaks in the language of kindness and conciliation, and who studies to manifest those little attentions which gratify the heart, is a polite man, though he may wear a homespun coat, and make a very ungraceful bow. And many a fashionable, who dresses genteely, and enters the most crowded apartments with assurance and ease, is a perfect compound of rudeness and incivility. He who has a heart flowing with kindness and goodwill towards his fellow men, and who is guided in the exercise of these feelings by good common sense, is the truly polite man—and he alone.

From the American Agriculturist. HOW TO MEND CROCKERY WARE.

Take care that the fractured edges of the vessel are not snipped, nor suffered to contract dirt; for if a dirty dish, or cup, be broken, it is almost, but not quite, a hopeless case; wash it gently and thoroughly with soap and water; rinse with soft water, and let it dry without wiping. The pieces should then be fitted together, as soon as possible, and kept in their places by winding firmly over the bowl, or dish, a strong thread, or a piece of twine; put the broken article into a boiler, an inch or two larger each way, and fill them both with sweet, cold skimmed milk; set the boiler over the fire, and boil for ten or fifteen minutes; take it off, and let it stand till quite cold, when the string, or twine, may be cut, and the article washed in warm water.

If the above directions have been carefully attended to, the vessel will be found firmly and permanently united, so that it cannot again be separated at the same place, which looks only like a crack. This is also an excellent method of preventing cracks from becoming fractures, provided the same process of closing by winding the thread be observed.

India, French, and I may add, our Philadelphia porcelain, are too close-grained and hard, to be mended in this way. E. S.

Eutawah, August, 1848.

ECONOMY IN LINEN WASHING.

A correspondent of a Dundee paper writes as follows:—"After many experiments made by myself and others, I find that a little pipe clay dissolved among the water employed in washing, gives the dirtiest linens the appearance of having been bleached, and cleans them thoroughly with about half the labour, and a saving of full one-fourth the soap. The method adopted was to dissolve a little of the pipe clay in the warm water in the wash tub, or to rub a little of it, together with the soap, on the articles to be washed. This process was repeated as often as required, until the articles to be washed were made thoroughly clean. All who have made the experiment have agreed that the saving of soap and labour is great: and that the clothes are improved in colour equally as if they were bleached. The peculiar advantage of employing this article with the soap is, that it gives the hardest water almost the softness of rain water."

MOCK CREAM.

Beat three eggs well: then add to them three heaped teaspoonfuls of fine flour; beat them well together; then stir them into a pint and a half of boiling milk; add to it a teaspoon of salt and loaf-sugar to taste; flavour with essence of lemon, stir it while boiling; when it is perfectly smooth it is done.

Linen pie or tartlet pans with rich puff paste, and bake them in a quick oven; when done, fill them with mock cream; strew powdered sugar over the brown; when a fine colour, they are done. These will be found to be altogether superior to custard pies.—[Anonymous.]

BAKED APPLES.

Baked apples are greatly improved by being baked in a bright tin or earthen plates, with a little water in, and a small quantity of sugar sprinkled over them.

TO MAKE GOOD SOUP.

The delicate and proper blending of savors is the chief art of good soup making. Be sure

and skim the grease off the soup when it first boils. Or it will not become clear. Throw in a little salt to bring up the scum. Remove all of the grease. Be sure and simmer softly, and never let a soup boil hard.

Put the meat into cold water, and let it grow warm slowly. This dissolves the gelatine, allows the albumen to disengage, and the scum to rise, and diffuses the savory part of the meat. But if the soup is over a hot fire the albumen coagulates and hardens the meat, prevents the water from penetrating, and the savory part from disengaging itself. Thus the broth will be without flavor, and meat tough; Allow about two table-spoonfuls of salt to four quarts of soup, where there are many vegetables, and one and a half where there are few. Be sure not to leave any fat floating on the surface. A quart of water, or a little less, to a pound of meat is a good rule. Soup made of uncooked meat is as good the second day if heated to the boiling point.

If more water is needed, use boiling hot water, as cold or lukewarm water spoils the soup. It is thought that potato water is unhealthy; and therefore do not boil potatoes in soup, but boil elsewhere, and add them when nearly cooked. The water in which poultry or fresh meat is boiled, should be saved for gravies, or soup, the next day. If you do not need it, give it to the poor.

Keep the vessel covered tight in which you boil soup, that the flavor be not lost. Never leave soup in metal pots, as sometimes a family is thus poisoned. Thickened soups require more seasoning; nearly double the quantity used for thin soups.

A GOOD ARRANGEMENT.—In France, all ladies who do not possess a decided ample fortune, make it a point to learn some practical art or business, which, in case of reverses of fortune, they may use to obtain a living. There are said to be six thousand females among the easy classes in this city, who are destitute of any acquirement that could be made available in case of necessity.—[New York paper.

TOMATO CATSUP.—Wash the tomatoes, and press them through a fine sieve. To six quarts of the juice and pulp, add the same quantity of the best vinegar. Then set it over a slow fire to boil. When it begins to thicken, add of pimento, cloves, and pepper, each half an ounce, cinnamon, quarter of an ounce, and two nutmegs all very finely powdered. Boil to the consistency of thin mush; then put in four table spoonfuls of salt, and take it out of the vessel immediately. When entirely cold, bottle, cork, and seal. It must be boiled in a brass or bell-metal kettle, and if the catsup is allowed to remain after the salt is added, it will taste of

the kettle. If you have a tin-lined vessel it will be the best.

ECONOMY.—Let every one bear in mind to earn a shilling before spending a penny, and rather drink water than wine, or go on credit to the tavern-keeper. Cast not away your old clothes before you can get and pay for new ones. Wear or bring into use nothing before it is paid for, and then it is your own. Have a place for everything you use. Strictly observe the old saying, "Early to bed and early to rise makes one healthy, wealthy, and wise." These few things observe and do, and you will find them an infallible remedy against the contagion of sheriffs, constables, and hard times.

KEEPING FARM ACCOUNTS.

Let any farmer make the experiment, and he will find it interesting as it is useful, and both interesting and useful, to know from year to year the actual produce of his farm. Let every thing, therefore, which can be measured and weighed, be measured and weighed; and let that which cannot be brought to an exact standard, be estimated as if he himself were about to sell or purchase it. Let him likewise, as nearly as possible, measure the ground which he plants, the quantity of seed which he uses, and the manures which he applies. The labor of doing this is nothing compared with the satisfaction of having done it, and the benefits which must arise from it. Conjecture, in these cases, is perfectly wild and uncertain, varying often with different individuals, almost a hundred per cent. Exactness enables a man to form comparisons, which may most essentially, and in innumerable ways, avail to his advantage. It is that alone which can give any value to his experience. It is that which will make his experience the sure basis of improvement; it will put it in his power to give sage counsel to his friends, and it is the only ground on which he can securely place confidence in himself.

SULPHURIC ACID INSTEAD OF RENNET FOR CHEESE.

- No. 1 was 1 pint of the first milk drawn;
 No. 2, 1 pint of the whole milking after the separation of 1 and 3;
 No. 3, 1 pint of the afterings, or the last pint drawn.
- Experiments showed that
 No. 1, with rennet, gave 112 grains of curd
 —with sulphuric acid 144.
 No. 2, with rennet, gave 104 grains of curd
 —with sulphuric acid, 144.
 No. 3, with rennet, gave 112 grains of curd
 —with sulphuric acid, 171.

The most curd or cheese being obtained from the sulphuric acid, (oil of vitriol,) the experi-

ment was tried on quantities of one eighth of a pint, to which a tea-spoonful of rennet and forty drops of sulphuric acid were the proportions used.—(Professor Trail in Transactions of Highland and Agricultural Society of Scotland.

The curd, casien, or cheese of the milk, is soluble only in an alkali. In the milk, the soda present holds the curd in solution. This soda is taken from the curd by the addition of any acid. The stronger the acid, the more effectually the curd will be coagulated. The rennet solution acts as an acid. The virriol being stronger, the curd is more perfectly thrown off, and being insoluble, turns into the pulpy state. Vinegar, wine, and other acid substances have been used—but the great objection to all such acids is the taste they impart to cheese and milk.—Rennet is free from this, and hence is so uniformly adopted.

Miscellaneous.

WHAT SHOULD PARENTS DO WITH THEIR BOYS?

Many parents have sons whom, when they arrive at years of discretion, they are uncertain what to do with. For instance, a respectable mechanic has a good, stout, hearty, and well-disposed son, whom he wishes to bring up respectably. If he is in easy circumstances, he somehow or other seems to think that his son must be brought up to some higher business than a mechanic. He therefore concludes that he must send him to college, and make him a lawyer, a doctor, or a clergyman, and the honest, well-meaning parent labors hard to earn money to pay the expenses of a collegiate education for the purpose of making him respectable—to make him take a higher rank in the world than that of a mere mechanic. Here is a great mistake. When the boy leaves college, what is he to do? He is then just qualified for nothing. He turns pedagogue for a while. He beats learning into the youthful progeny. But few, very few, think of pursuing the business of a schoolmaster as a permanent profession. After continuing it for a year or two, he quits it, and commences the study of one of the learned professions. Here are three or four years spent in preparing to become a professional man, and at additional expense to his father. He at last is admitted to the bar, or receives a degree of M. D., or is licensed to preach. The next thing is to get a living by the profession he has chosen, but this is not so easy a matter. All the

learned professions are full to overflowing, and there seems to be no room for new beginners. The consequence is, that the young aspirant drags along without getting business enough to pay the rent of an office. Year after year he toils, or would toil if he had anything to do, without making half enough to pay his own expenses. To be sure, there are some whose superior intellect and commanding talents will enable them to rise at once to eminence, and to command a business which will render them independent; but these cases are few and far between.

When such do occur, the superiority of mental power will shine out beforehand, and should be fostered. But the propensity which some mechanics have of bringing their sons up at college, to make them more respectable, we think a great error. It is injuring his son, more than benefiting him, unless some extraordinary mental energy displays itself in the youth. He goes through college, and thence

Proceeding soon, a graduated duncie, he is just fitted for—what! He has spent the best part of his youthful days in qualifying himself for a profession from which he cannot gain a living, or at least but a very scanty one.

In our humble opinion, as the professions now are, we should say to mechanics, and indeed to professional men, in ninety-nine cases out of a hundred—Give your sons a good education, and then put them as apprentices to some respectable business. They will then, as soon as their time of apprenticeship is expired, be independent, capable of earning an honest living at once. The profession of a mechanic is daily becoming more and more respectable, thanks to the good sense and good judgment of the present age; and it can no longer be thrown out as a mark of reproach, "You are a mechanic." It is, on the contrary, an honor.

As the question has been recently discussed among a few mechanics, what they should do with their sons, we should repeat, give them a good education, and then bring them up as mechanics or farmers, if you wish to insure them a comfortable, honorable, and independent living and station in society.

The proper education and training of young men is decidedly the interest, above all others, that should receive the fostering care of the Government, the press, and in fact of

every public spirited man in the country. In new countries like Canada, it is not to be wondered at, that at its earliest settlement the training of the youth should be neglected, and the latent talents of her young men should be allowed to remain inactive, from the circumstance that most of her early population were poor, and had quite as much as as they could do to furnish for themselves and families, the plainest description of food and clothing. This influence, happily, no longer exists to any considerable extent, especially in the oldest settled townships of the Province, and it now devolves upon those who rule the destinies of this fine country, to place within the reach of every young man who desires it, a thorough, practical education.

It is not merely for the creditable performance of public duties, that the youth of our land require a thoroughly liberal and practical education, but it is of equal, if not greater importance, that the practical farmer, mechanic, and even the laborer, should have a suitable education for the developement of every class of genius suited to those several avocations of life. Since the country has become sufficiently able to creditably sustain public universities, colleges, and academies, we find that those richly endowed institutions are principally intended for the education of lawyers, physicians, and divines. They are doubtless in every respect suited to the taste and condition of the classes enumerated; but it nevertheless is a fact, that there is not an endowed educational institution in Canada, that is at all suited to the practical or efficient education of the youth of the productive classes. No farmer or mechanic of sane mind, would think of sending that portion of his family intended for industrial pursuits, to any of the present endowed Canadian colleges; and as there are no intermediate institutions, except the Grammar Schools, between them and the common schools, the intellectual powers of a very large and respectable portion of the young men of the

colony are allowed to remain dormant, and hence those engaged in developing the resources of the country, are not as intelligent and enterprising as they would be, if as much pains had been taken in building up and sustaining a description of educational institutions suited to the wants of the industrial classes, as has been done in establishing the institutions alluded to, for the superior education of those young men who, in point of practical utility to the country, will become merely drones in the hive.

Much has been said of late in favor of the establishment of agricultural colleges, to be conducted in connection with well managed experimental or model farms, for the training and education of that portion of the young men of the country who intend to follow agricultural and mechanical pursuits, and who likewise desire to obtain a thorough practical and theoretical knowledge of the various collateral sciences which may be profitably employed on the farm and in the workshop; but almost in every instance, the writers on that subject have aimed at a higher order of education than is required at the present period by the farmers' and mechanics' sons of Canada.

The Common Schools at present appear to be the principal sources from which an education can be imparted to the great bulk of the young men of the country. To these local and important institutions, every friend of his country should render every assistance in his power in sustaining them in as creditable a manner as possible. Since a well organized common school system is now in successful operation in the country, it is to be hoped the best qualified teachers that can be had will be employed, and that the young men who can afford the time, will devote the winter months to the acquisition of as good an education as can be had from that source.

The elementary branches of a common school education may be imparted to the youth of our country in the common schools, but much farther than that need not be ex-

pected from the great majority of teachers employed in those schools. It therefore devolves upon the young man who is reared and educated in a rural district, who is desirous of obtaining a more thorough education than can be had at those schools, to either spend a few terms at a higher school, or else lay in a good supply of useful books, treating upon those branches of education with which the pupil is most desirous of becoming acquainted, to be carefully perused and studied during the winter evenings, and at such leisure moments as may be at his command. In addition to this, the parents or guardians of young men should place within their reach a well selected assortment of periodicals devoted to the advancement of agriculture and mechanics, and the sciences that have a relation to those pursuits, which should be carefully read and studied during leisure moments.

GAPES IN CHICKENS.

A writer in the Ohio Cultivator, recommends the following remedy for this disease in chickens: "Steep lobelia and red pepper in hot [not boiling] water, and mix the food with this liquor as strong as they will eat it, until the chickens "gape for certain." It is both a preventive and a remedy. We tried it to see if it would kill some hopeless chickens, but they would live in spite of it, and now we have no trouble with this disease.

HOW TO CATCH HAWKS.

The following ingenious method for destroying these pests to the farmer, is given by S. Webb, Esq., of Waldo County, Maine, in a late number of the Belfast Republican:—

"Erect a pole, twelve or fifteen feet high, in a place where there will not be anything else near for them to light upon, and upon it set a common fox-trap, on which they will light.—A strong rat trap will answer the purpose, by tying it to the pole lengthways, with the jaws raised above the end, the pole being a little leaning, so that the jaws will not fall together.—When one hawk is taken, tie it on the ground near the pole, and its mate will be in the trap in a short time. The season is near for the hawks to reappear, and if farmers do not wish to have their chickens destroyed by them, they will do well to adopt this method of putting a stop to their depredations.

Markets, &c.

MONTREAL, Nov. 30—Flour, nominally, 24s. 6d. to 25s. for superfine. The sales, for consumption, are excessively limited. No Wheat offering. Oatmeal, 19s. 26s. —Pots, 28s.; Pearls, 26s. 9d. a 26s. 6d. Provisions—Pork, Mess, 72s. 6d.; Prime Mess, 55s. 6d.; Prime, 45s. a 47s. 6d. Butter 5½d. a 7½d.

NEW-YORK, Nov. 30—Flour, \$5 31½ a \$5 37, for Genesee, Troy, and Oswego. 6,000 barrels sold, the most of which was for home and eastern trade. Meal, \$3 12½ a \$9 18½. In Wheat not much movement. Genesee can be bought at \$1 26. Corn—73c. for round Yellow, which is not very plentiful; 68c. for round White; 65 a 67c. for Mixed; 60 a 66c. for New; \$5 a \$5 59c. for distilling parcels. Sales, 30,000 bushels. Rye—Sales, in ship, at 62c. Oats, 34 a 45c. Pork steady; sales 300 barrels, at \$12 50 and \$9 25. Beet quiet at \$11 for city. Lard drooping; 200 bls. new sold at 7½d.

FREIGHTS—A vessel was taken up to load Corn for Belfast at 7d.; Flour to Liverpool, at 2s.; Corn, in bulk, at 7d.

TORONTO, Nov. 30.—Flour, per barrel, 196 lbs., 15s. 3d. a 21s. 3d.; Wheat, Spring, per bushel, 60 lbs., 3s. 1½d. a 3s. 9d.; Wheat, Fall, ditto, 3s. 9d. a 4s. 3d.; Barley, per bushel, 48 lbs., 1s. 8d. a 2s.; Rye, per bushel, 56 lbs., 3s. a 3s. 4d.; Oats, per bushel, 34 lbs., 1s. a 1s. 2d.; Oatmeal, per barrel, 196 lbs., 17s. 6d. a 20s.; Peas, per bushel, 80 lbs., 1s. 8d. a 2s.; Potatoes, per bushel, 2s. a 2s. 6d.; Beef, per 100 lbs., 12s. 6d. to 17s. 6d.; Pork, per 100 lbs., 12s. 6d. to 18s. 9d.; Bacon, per 100 lbs., 25s. a 35s.; Eggs, per doz., 3½d. a 7½d.; Turkeys, each, 1s. 6d. a 2s. 6d.; Geese, each, 1s. 3d. to 2s.; Straw, per ton, 30s. a 35s.; Hay, per ton, 55s. a 65s.; Butter, fresh, per lb., 8d. a 10d.

LIVERPOOL, Nov. 10.—We have little or no change to notice in our Corn Market, which is very quiet in consequence of the more favourable accounts of the Potato crop in Ireland. Western Canal Flour is quoted at 29s. 6d. a 30s.; Philadelphia and Baltimore at 29s.; and Sour 27s. per barrel. Wheat 7s. a 8s. 6d. per 70 lbs. Indian Corn Meal in fair demand, at 34s. a 35s. per quarter for Yellow, and 33s. a 34 per quarter for White. Indian Corn Meal at 17s. 6d. per barrel; for which there is only a retail demand. The duty on Wheat has now advanced to 6s. per quarter, and on Flour to 3s. 7½d. per brl.