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"Agriculture not only gives Riches to a Nation, but the only Riches she can call her own."

New Series.

TORONTO, FEBRUARY, 1846.

Vol. II. No. 2.

Agricultural Education.

PROBABLY there is no topic of greater interest to the Canadian people than that of placing the educational institutions on such a footing, that the farmers' sons and daughters may have an opportunity of acquiring a sound practical education. Various plans have been proposed to accomplish this object, but in our opinion none is so wisely calculated to widely diffuse a taste for improvement in rural pursuits, as the one which is now being carried out in Scotland, and in a few of the Germanic states, which simply consists of the employment of well-qualified teachers, and the introduction into the schools of a high order of class books, treating upon the various branches of learning embraced in the science of agriculture. Public attention has not been sufficiently aroused to the importance of this subject in this country to secure a general co-operation on the part of the farmers themselves, who are really the most interested parties; but nevertheless, it is high time that those who are anxious to see Canada rise to the zenith of prosperity, should agitate and not cease agitating until the youths of the country are thoroughly educated and trained in all the branches of learning that would be of use to them in performing the various duties of usefulness which may fall to their lot, when they arrive at the age of manhood or womanhood. It is not our object at this time to enter into a lengthy dissertation upon the very interesting theme of a

agricultural education, but merely to attract public attention towards it. At an early opportunity we purpose to discuss the subject in detail in such a manner that the most incredulous will have to acknowledge that the farmer should be the most liberally educated man in the province.

The prudent farmer will in a few years acquire a sufficient amount of capital to be able to invest a trifle of each year's income in some useful enterprise which is calculated to enrich the country and develop its wide-spread resources. This subject is so imperfectly understood, that, up to a very recent period, no mention whatever has been made of it; and probably the true cause of the apathy which is evinced on this and kindred topics, may be traced to the fact, that the institutions for educating the rural classes, have been, until lately, allowed to struggle on without receiving any beneficial attention from government or the influence of a judicious system of organization. In those countries where the education of the rural classes have not been neglected, the farmers are among the foremost in encouraging manufacturing establishments, which are mostly upon the joint stock system; and the history of such enterprises have shown in a most conclusive manner, that with directors selected from the rural classes, they have not only proved a source of profitable investment for the stockholders, but have been the means of enriching the nation to a very considerable degree.¹¹ Many instances

might be cited, to prove that a community of well educated yeomanry possess the ability and means of carrying out successful enterprises to a much greater degree than one in which the cultivation of the mind has been to a great extent neglected. Space will not admit lengthy remarks upon this topic, and we shall simply content ourselves with giving due practical illustration, which will serve to show what can be accomplished when a few hundred intelligent farmers unite their energies in one common cause.

The farmers of the Township of Waterloo, Seneca County, N. Y., about eight or nine years ago, had some difficulty in disposing of their wool at remunerating prices, and as their soil was peculiarly adapted to sheep husbandry, they had invested large sums of money in the purchase and rearing of fine woolled sheep; but owing to the then low prices of wool, the business upon trial was found to be less productive in profits than some other branches of farming. A public meeting was called to determine upon some plan to establish a permanent remunerating market for fine wool, which was very numerously attended by the productive classes, and after properly discussing the question, it was unanimously resolved that the inhabitants of the county should petition the Legislature to grant a charter for a joint stock woollen manufacturing establishment, to be erected in the village of Waterloo. The charter was granted, and most of the stock taken by the farmers, and a suitable building was forthwith erected, which was filled with machinery of the very best description. This company for the past six years have employed \$60,000, of a floating capital, and have had in their constant employ upwards of 100 hands, most of whom are females, who earn from \$10 to \$12 per month. The annual dividends from this establishment have exceeded upwards of 12 per cent on the paid up capital, and the prices of wool have ranged from 40 to 50 cents per lb., being about double the price that the farmers in that vicinity were formerly in the habit of getting for an article of similar quality. The enterprise has turned out so well that the company have had their charter increased, and have erected one of the most costly stone edifices in the state, which is now literally filled with a description of machinery which would favorably compare with similar establishments in Britain. This new

branch will employ a floating capital of \$140,000, and 200 operatives. It will be seen that by this single operation much good has already been effected, and a profitable home market is not only secured for the article of wool, but every article the surrounding farmers can produce finds a ready sale to the inhabitants of this flourishing village.

In bringing forward the subject of manufactures in connection with agricultural education, we merely wish to show, that if the farmers could only be induced to cultivate their minds, come what will, there would then be no necessity of complaining of *hard times*, because the greatest difficulties could be surmounted by a community of intelligent, virtuous, and industrious agriculturists.

The following remarks upon this subject from the pen of our respected friend, the hon. Adam Ferguson, are so much to the point, that we give them insertion:—

To the Editor of the Journal & Express.
Agricultural Education.

Sir,—I am desirous through your Journal, to call public attention to a subject too long overlooked, but which in my humble apprehension involves much of the welfare and happiness of Canada.

I presume no man is inclined to question the claims of agriculture to pre-eminent rank in those means which are destined (I trust for many a day) to render this noble province a precious gem in the British Crown, or a valuable portion of the civilized world in whatever sphere an All-wise Providence may appoint. The farmers of Canada are a race *'sui generis.'* Their prototype is to be found not in the dependant class of tenantry, either under lease or at will, but in the sturdy yeomen of Britain. They may in perfect propriety assume the highest status in the land, and while they cheerfully concede to other classes their merited rank, they may, without presumption, demand of the merchant, the lawyer, the doctor, the baker, the miller, the weaver, or the editor himself, how they would get on without their support.

The object which I contemplate is, to raise the intellectual condition of our farmer, by placing within his reach a liberal education especially adapted to the position which he is to occupy in life.

We have had no lack of discussion upon the subject of education, and had ordinary justice

been done there would have been; no lack of funds to carry a liberal and useful system into operation. Perhaps it is not even yet too late, and sure I am that the statesman who shall succeed in establishing educational institutions upon a liberal and practical footing, need look no further for a civic Crown to grace his brows. It may perhaps be fairly enough objected that I over estimate the claims of the agricultural class, and that in fact, they are neither anxious to hold, nor qualified to maintain so high a position. To some extent this may be admitted of the present generation. A large portion of our farmers are men, who, after steadily grappling with hardships and privations of no common magnitude, now find themselves at an advanced period of life, in comfortable enjoyment of the fertile acres, which in the sweat of their brow, and during the best period of life, they had reclaimed from the forest. With such men, the architects of their own fortune, education necessarily assumes a simple and limited form. Neither time nor opportunity offered them more. It is different now. They contemplate a generation rising around them for whom they desire better things. They regard their lads as men who are to fill a large and influential position in the province—their girls, as no less destined to promote social improvement in the domestic circle. Their hearts yearn to secure for those dear to them, that enlarged knowledge which untoward circumstances denied to themselves, and every generous mind must rejoice that such praiseworthy desires have a reasonable prospect of being realised. In Europe the education of the rural population has begun to excite much attention, and has led to some happy and promising attempts at mental culture in the various parts, both of the Continent and of Britain perhaps in none more conspicuously than ill-fated Ireland.

It would be premature to discuss the details of systems, books, &c., adopted in these institutions, it may be sufficient to state that they are economical and simple. In some of them substantial elementary instruction is bestowed without any other remuneration to the teacher than the profits accruing from the labor of the boys upon a piece of land during a limited portion of the day. The system carries with it many advantages, none perhaps more decided than the feeling of self dependence which the boys acquire, and the just estimate which they so early form of the value of industrious habits, while the pleasing reflection to affectionate hearts, that without neglecting the invaluable blessing of education, their hard working parents are relieved from all expense, must prove through after life a cheering remembrance.

The Highland and Agricultural Society of Scotland, ever prompt to foster schemes of social improvement, has made considerable progress in

grafting agricultural instruction upon the Parish Schools, and the teachers who have commenced the experiment are unanimous in approval of its success, and in urging the Society to persevere. With these remarks I would for the present leave the subject to commend itself to the public attention, trusting that public feeling will awake, to its high importance as a means of vital improvement to the province, and as one in which all political discord may, nay, must be submerged. Without a strong and decided expression of public feeling, the scheme must languish. With a hearty determination in its favor, the Legislative and Executive will readily acquiesce. The means are easy and obvious,—the expense must be a trifle when put in the scale with its importance and benefit to the public. Our Common and District Schools must be easily prepared to receive it, and competent instruction in scientific and practical agriculture conveyed to the public in a useful and economical form. In considering the object in view, we ought to bear in remembrance that the tenure of land holding in Canada is widely different from that of Britain. We have no large and distinct class of men, toiling in a great measure for the behoof of others, and I sincerely hope we never shall have any such class in Canada. Our farmer is the freehold owner of the soil which he tills, and his children seem destined to realize the captivating picture of rural life, so graphically drawn by the Roman Poet:

‘Beatus ille que procul negotiis,
Ut prisca gens mortalium,
Paterna arva, bobus exercet suis.’

Neither must we forget that our almost unlimited command of land precludes all necessity or pretext for that painful disjunction in the family settlements which forms the law of our fatherland. A landed proprietor in Canada, without any extravagant expectations may calculate upon giving freehold estates to half a dozen of sons, should their taste lead them to rural pursuits, and it is evident that the great body of landed proprietors must in an equal proportion become influential and large. Let us then, without delay, enable the farmers of Canada to profit by the ‘Schoolmaster abroad.’ (not thereby alluding in any manner to our Superintendent,) and of affording them the means of qualifying their children for the most useful, healthy, and interesting pursuit which can engage the attention of man:

I have to claim your pardon, sir, for this unwarrantable inroads upon your columns, but I trust you will concur in regarding the object as one of paramount importance, and that you will do your best to interest the members of the Legislature, District Superintendents, and your numerous readers, in giving it due consideration.

When Parliament shall assemble, I for one am ready to lend my zealous, though humble aid; to promote its success. Meantime.

I remain your obedient servant,

ADAM FERGUSON.

Woodhill, Dec. 1st, 1845.

Montreal Mercantile Library Association.

We have read with some interest the Annual Report of this Association, which occupied two full columns of a late number of the *Montreal Courier*. The list of members are as follows:—Merchant Members, 108; Senior Clerk do. 202; Junior Clerk do. 89; Life do. 48; and Hon. do. 22; in all 469. The Library contains 3,934 volumes, and besides 300 periodicals. The services of competent scientific gentlemen are secured to deliver lectures in both the English and French languages; and in addition to the lectures, steps are about being taken for the formation of classes in various branches of learning.

We have only one object in presenting this subject to the notice of our agricultural readers, which is simply to shew them how it is that merchants happen to be a better informed and more influential class than the farmers. It is foreign to our nature to draw invidious comparisons, and we feel certain that we shall not be censured with this crime, in recording as our conscientious belief, that the agriculturists of Canada should be the most influential and best informed class of our citizens.

Every merchant of respectable standing subscribes to some half dozen leading commercial papers, and if he has a family, patronises the best literary works of the day, and besides, has his library stored with a stock of general reading, from which sources he obtains that knowledge which gives him power, riches, and influence, to a greater degree than the less aspiring farmers. In each of the large cities of this and other countries of Christendom, the merchants form themselves into associations similar to the one under notice in Montreal, and by this means have access to all that has been published, which would be likely to be of interest to them in their commercial operations. This laudable zeal to acquire knowledge, should in our opinion, be manifested by the farmer as well as by the merchant; and it is through this conviction alone, that we have been influenced to make so large a sacrifice, to convince, if possible, our brother farmers in Canada, that the course which they have been pursuing is derogatory to their true and best interests as agriculturists. We are obliged to confess that at least four out of five of the farmers of this Province have no desire to obtain a knowledge of the principles and influences which go-

vern their profession. Many have never seen a written work upon agriculture; and even if they were in possession of the most popular agricultural work published in language that they could read and understand, ten chances to one if they would open its lids from month's end to month's end. This is to us a sorry confession, but nevertheless we see the necessity of speaking out in language that cannot be misunderstood. The fertility of our soil cannot long continue, under the course of cultivation that is at present practiced in many Districts of Canada, and when our best lands become exhausted, and comparatively useless by improvident farming, it will then be too late to promulge any mode of improvement. We see the truth of this assertion verified in a large portion of the eastern division of this province, and probably a similar state of things exist in many sections of Western Canada. Worn-out lands may be resuscitated and made as productive as ever by scientific farming, but it is highly improbable that this would be done by those who impoverished their land through bad cultivation.

One great check upon agricultural improvement is, the low estimate which is placed upon the cause of education by those who are engaged in the cultivation of the soil; but as there are many exceptions to this rule, and as the junior farmers feel a more lively interest in storing their minds with useful knowledge than did their forefathers, there is good reason to take courage. If it were possible to influence the farmers, together with their sons and servants, to form themselves into such associations as the one under notice, the grand object of which to be the acquisition of a correct knowledge of the practice and science of agriculture, the result of such a change in public sentiment would add more to the true honour and greatness of the colony than all the other means of improvement put together. By way of illustration, suppose a township contained 400 farmers and others interested in the farmers' prosperity, and those 400 would organise themselves into an association, having for its object the dissemination of agricultural knowledge, each paying the annual fee of one dollar, which would give the gross sum of £100. This sum expended in the purchase of agricultural, horticultural, and mechanical works, such as should be adapted to the tastes of the farmers in the township, would procure in an average of years, about 200 volumes, and in ten years 2000 volumes. In

such a library the experience and genius of the present and past ages would be concentrated, and as fast as new works came out, they would, as a matter of course, be ordered, so that the farmers in such a community would be in possession of the latest improvements, and their minds would be literally stored with the most productive description of knowledge, which would in a short time tend to make them intelligent and wealthy. Owing to the want of such a united band of farmers as has been here pictured to the fancy, and also to the very general opinion which prevails among farmers, that they as a class have *no time to read*, it is extremely doubtful that one-fourth of the number we have mentioned, could be found in a single township in Canada, who would voluntarily tax themselves the small sum of one dollar yearly for the establishment of an Agricultural Library. There has been so much said on this subject of late, that it is possible a successful beginning might be made the present winter; and although the appearances may at first look dark, we will venture to predict that success will crown the efforts of all who engage in this patriotic enterprise, if they but adopt for their motto, perseverance and honesty of purpose.

St. Catharines Nursery.

We have frequently brought this meritorious Nursery Establishment into favorable notice before the Canadian public, and as we have been lately favored with a Catalogue for 1845, we deem it a duty we owe its enterprising proprietor, Doctor Chancey Beadle, as well as our subscribers, to again offer our meed of praise to an establishment which has already rendered the province much valuable service. We learn by the catalogue in question, that Dr. B. now gives his undivided attention to the Nursery and Horticultural business, and that he intends to exert his utmost tact to please his numerous customers. This announcement we feel confident will be as gratifying to our numerous intelligent readers as it is to ourself; because all lovers of good fruit cannot otherwise but rejoice to hear that the largest Nursery establishment in the province is improving in ratio with the other leading improvements of the day. Many sections of Canada are well adapted for the cultivation of apples, pears, plums, cherries, and peaches; and take one year with another, the country might be supplied with those fruits, of its own growth, and

the most favorable seasons large quantities might be exported. As far east as the district of Montreal the apple is cultivated exclusively for the British market; and one gentleman in the neighbourhood of the Canadian metropolis exports in favourable years many hundred barrels of a few choice varieties of this fruit to London, for which he gets from six to eight dollars per barrel. These instances, however, are rare, and instead of Canada being an exporting country of fruit, thousands of pounds of bullion is yearly paid to the American farmers for varieties of fruit which could be successfully and profitably produced at home.

Apples, plums and cherries, do better in northern than in southern latitudes, and if the best varieties of those fruits were cultivated extensively, the demand would be found to increase with the productions. Our farmers and others who have land to cultivate, would do well to look to this matter, and if they study their own and their country's interest, they will patronise such Nursery establishments as are conducted on scientific principles.

In looking over the Catalogue, we find that there are cultivated in the St. Catharines Nursery, 13 celebrated varieties of summer and 64 of autumn & winter apples; 16 varieties of peaches, 5 of plums, 21 of cherries, and 4 of nectarines. The collection on the whole is alike creditable to the proprietor and the province. At the opening of navigation we purpose to visit Dr. Beadle's Nursery, and shall then be able to speak more advisedly on the extent and description of his business.

A Good Invention.—Mr. Earnest Mars, cabinet-maker, of New York, has invented a mode of propelling the fire engine, by which it can be worked by a less number of men and with much greater ease than by the brake, the present mode. By means of a screw, turned in a moment by a crank attached, the machine is lifted from the ground when required to be set in operation, and the hind wheels made to serve as fly wheels. With the aid of a rope attached to the fly wheels the machine can be worked by eight men or two hundred, so that any persons at the fire, disposed to lend a hand, have only to lay hold of the rope and assist to give motion to the fly wheels. *N. Y. Paper.*

Farm of General Rawson Harmon.

When returning from the New York State Fair we visited General Harmon, and was so much delighted with many features of his farm management, that we promised him, when an opportunity presented, we should treat the Canadian farmers with a brief history of his agricultural operations. To redeem this pledge in full would occupy more space than we have at present at our command. We shall therefore briefly hint at a few outlines of his agricultural operations, and may at some future time take up the subject, with the view of rendering it that justice which it so obviously merits.

Wheat land principally consists of that description of soil which is known upon this continent as "oak openings." The leading features of which consist of a mixture of clay, sand, and limestone gravel, in nearly equal parts, and is probably on the whole the most barren in vegetable matter of any of the soils in North America. The surface of the country is beautifully undulating, and the hills within a few feet of the surface are embedded with white and grey gypsum in inexhaustible quantities, and the valleys are stored with carbonated lime to an almost equal extent. As the name of the town would indicate, it is distinguished for its superior adaptation for the wheat crop. The soil is dry, porous, and contains only about five per cent of vegetable matter, and hence rust is almost unknown in this region. With this cursory geological description of the district, we will at once proceed to General Harmon's mode of farming, which, with a very slight variation, is practiced by the principal farmers in the town of Wheatland. The crops grown upon Mr. Harmon's farm consist principally of wheat and clover.—About one-third of his land is annually sown with wheat, and with this crop he invariably seeds down with clover. After mowing the first crop of clover, the sheep are turned into the fields and continued there until late in the autumn;—the second year's growth is also fed with these animals until late in June, at which time they are broken up and fallowed. In breaking up the fallows, the furrows are ploughed to the depth of eight or nine inches, and in the course of the summer a common two-horse cultivator is employed two or three times to keep down the weeds and to expose new surfaces of the soil to the action of the atmosphere. The fallows are

cross-ploughed to the depth of five inches, from the middle of August to the first of September, and without further preparation the wheat is sown at the rate of five pecks per acre, from the eighth to the fifteenth of September. The seed is sown with a sowing machine and covered with a gang plough, which implement consists of five ploughs so constructed in a frame, that they operate from two to four inches in depth, and plough to the width of five feet, by which operation the seed is covered, pretty much after the style of ploughing in with an ordinary plough, but with much greater facility; the common cultivator is also used for the same purpose. Before sowing the seed it is prepared by soaking it in strong brine, after which it is dried in June at the rate of two quarts of lime to a bushel of wheat, and is allowed to lie in lime twelve hours before sowing. About ten or twelve acres is annually sown with oats, after which crop the ground is ploughed in the autumn, and the following spring manured at the rate of thirty two-horse waggon loads of barn-yard manure per acre, which is ploughed in and planted with corn and potatoes. A small twelve-rowed variety of corn is principally used, which is usually planted about the 20th of May, and is ready for harvesting by the 1st of September. As soon as the corn and pumpkins are removed off the land the ground is ploughed and sown with wheat, which most generally yields the most productive crop upon the farm.

Mr. Harmon annually cultivates about fifty varieties of winter wheat, but his main crop consists of a justly celebrated variety, known as "General Harmon's improved white flint wheat." His average yield of wheat for a series, say of eight years, has equalled about 25 bushels per acre, and that of corn for the same term, about 40 bushels per acre. Both smut and ches are entirely strangers to him, or in other words he is not troubled with either of those pests. The farmer who formerly occupied this farm, used to grow ches in abundance, and was one of those who could not be persuaded but that wheat would turn to ches; and entertaining this opinion, it was not to be expected that he would be at any trouble in cleaning his land and seed, with a view of preventing the recurrence of ches among his crops. The present occupier, by close observation, had learned that those who sowed ches must expect to reap this worthless

grain in proportion to the quantity sown, and consequently took the precautionary measures for thoroughly eradicating the evil. In three years he effected his purpose, and from that time up to the present period, his farm has not been known to grow a single plant of chess. His average crop equals about 1,200 bushels, and in the whole of this vast quantity, not a single grain of chess or a ball of snut is to be seen. This fact is a most convincing argument in favour of the truth of the theory which we have so frequently advanced on this subject, viz: that chess is a distinct species of grain, and that the transmutations of grain is a theory which is opposed to common sense, and violates one of the most beautiful laws of nature.

The sheep upon this farm are of the pure blooded merino breed, and were on the whole the best flock of the kind we have seen. A flock of 319 clipped 1179 lbs. of clean wool, which brought in the market 375 dollars. In 1844 the wool from 238 sheep brought 594 dollars; and the same year 63 three years old wethers clipped an average of 4 lbs. of wool each; and one ram of the Paulor breed shorn 9 lbs. of clean wool.

These remarks might very profitably be extended, but as our readers would probably be glad to hear something from us on the promised reports of some of our best Canadian farmers, we shall for the present bring this subject to a close.

The Alpaca.

We wish we possessed one-tenth the wealth of many a man we could name in this country, for one of the first things we would do with a very small portion of it, would be to import a few Alpacas, and naturalise them here for the benefit of the agricultural community. We wrote a little article on this subject in our April number, last year, and we do intend to continue inserting others till we can influence some one, who has sufficient patriotism, to make an importation of these most beautiful and valuable animals. It pains us, absolutely, to look around and see the worthless objects on which so much money is spent in every quarter of the United States; and yet one might solicit for years, and it is doubtful whether so small a sum as one thousand dollars could be raised for the worthy purpose of importing what might ultimately benefit the country untold millions. This does not arise from a want of liberality, on the part of our citizens, but unfor-

tunately from improper education. Yes; we mean education in its enlarged sense—an education which teaches people to do with their abundant means what is for the advantage of their fellow citizens—aye, and for the world, instead of spending them so exclusively for the gratification of their own immediate vanity, pride, and luxury. Is there not a merchant among the millionaires of this great city, who will stand up as Mr. Dawson did—honored by his name—at the late meeting of the British Association for the advancement of science and say:

“It is now six years since I first joined this society for a little recreation or relaxation from the trials of 30 years close application to commercial life; and at Birmingham I brought a subject before its notice, which received its countenance in a special manner. I there declared the object of that paper, which was to induce our various manufacturers to exercise their ingenuity in discovering means to consume a wool of a silken texture (as can be seen retailing) in a manufactured state, and also to prepare our landed gentry and farmers to neutralise the animal called the ‘Alpaca’—a species of sheep that eat what the cow, the horse, the common sheep, &c., reject. The manufactures have succeeded beyond my most sanguine expectation, and the naturalization also; the former has created a national wealth of £3,000,000 to £5,000,000 per annum; the latter is progressing rapidly. I have proved these mountain-rangers can be domiciled in our own country, though brought from beyond the Andes Mountains in Peru. (How much more easily then would they do this in the United States—a climate similar to their own!) I have tried the experiment in my own lands, on the west coast of Ireland, in the wildest districts of the county of Kerry; and already a company is on the tapis to bring over ten thousand of these animals for the national good. As the race is nearly extinct in Peru, it is desirable to bring them out to our isles; their wool approaching silk, and their flesh being improved by English air and pasture. Our Sovereign and Prince Albert are now wearing royal robes manufactured at Windsor. In ten years these animals will add £20,000,000 per annum to the national wealth.”—*Am. Ag.*

Hoof Ointment.—Tallow, 1 pound; tar, 1 pound; black resin, 1 pound; lard, 2 pounds; spirits of turpentine, 1 pound. Mix.

Agricultural Societies should Patronise Agricultural Papers.

The principal object that Government had in view in so liberally endowing Agricultural Societies, was to give a stimulus to improvement in this important branch of industry. In some sections of the country mighty changes in agriculture have been effected through the instrumentality of those valuable institutions; and by examining the subject closely, it will be found, that where the farmers are characterised for their zeal in carrying out the leading agricultural improvements of the day, they are supplied with an ably-conducted agricultural paper, through the agency of an agricultural society. This principle of supporting journals devoted almost exclusively to agriculture, is so wisely calculated to make agricultural societies popular, that where they are based and carried out on sound principles, almost every friend to his country cannot otherwise but patronise them. Every man gets more than his subscription fee, whether he draws a prize or not; and if he be successful in the latter, it makes the prize appear more valuable than if procured on the old system, inasmuch as it would appear as though he had really not contributed anything towards the funds of the society. By affording a magazine, which every one would consider cheap at a dollar, for half that sum, is simply giving 50 per cent discount to the societies, which would otherwise be appropriated to travelling or local agents. The public mind has become so well informed upon this subject, and agricultural journals and other publications that treat on the science and practice of agriculture are now so highly appreciated by the intelligent portion of the farmers, that it is almost needless to occupy much space with these topics; but for fear it may be thought by some that this mode of supporting agricultural societies and papers is not held in esteem by those who are as well qualified to judge of its merits as ourselves, we would conclude these remarks by making a few extracts from the *Chatham Gleaner*, of the 23rd December last, which are to the point, and show most conclusively that it is of the greatest importance that the farmers of Canada should look well to their true interests at this important crisis.

“Every farmer is not a scientific man. Few have more than a common education, and a large portion can neither read nor write, the assertion may neither be pleasing nor palatable, yet none, we presume, will gainsay it. And a third difficulty in

the spreading of useful information is detected in this fact,—the farmer, ever characterised for his prejudices, opposes any thing like innovation on the practice of his immediate predecessors, and still, struggling against the stream of increasing knowledge, continues to plod. In writing this, at the present time, our principle object is to get the attention of the farmer directed to these means within his reach, which will enable him to see clearly the advantages, which must accrue to him from a more ready accommodation on his part, to the improved practices of the day. And first and foremost, is the general establishment of Agricultural Societies. As an encouragement to the erection of these valuable institutions, the Provincial government has enacted a statute, whereby it promises to treble the sum subscribed by any district for this purpose. Assistance such as this is most generous, and neglect on the part of any district, or township, to avail itself of the proffered aid, is worse than ingratitude. We, therefore, say to the farmers, awake! exert yourselves in establishing and supporting these institutions. In this district a society was formed some years ago, and still continues to exist, but in so languid a state that it requires every man's assistance to give it the power of doing good, to that extent its friends would wish. Like all institutions, it has had to pass through its infancy, and many have been the difficulties it has had to contend with, and many have been the faults it has committed, this arose chiefly from inexperience, and was to have been expected. During the past year a new constitution has been prepared, and will go into operation on the 1st January, 1846, copies of which can be had at this office, gratis; the society is to be organized for ten years; the sum of 1.50 shillings per annum, will entitle one to membership, and each member gets a *British American Cultivator*, free,—which is worth double the money. The benefits to be derived from a connection with this society are not confined to premiums awarded at its annual show; this is the least, and, as at present managed, may perhaps be considered an objection, on account of the hickering and dissatisfaction created by the decisions. Many, we know, have joined the society for no other earthly object than to get their ten or twenty shillings, and many others will not join, because, say they, I can't get a premium. Now, this is decidedly wrong and we think it would be an improvement if premiums were paid in instruments of husbandry, of approved character. But what narrow and selfish views such persons must have of the genial benefits of such an institution. What, as there neither pleasure or profit in communicating ideas; would a monthly meeting of the farmers in every township be deleterious to their interests; would the establishment of a Farmers' Library connected with the institution, a series of lectures, by some competent person, be either obnoxious or injurious, ferscosh; we think, these long winter evenings, nothing could be more agreeable. To those who wish to grab a shilling with one hand, when they lay out sixpence with the other, we would say, the money you would subscribe being trebled by the government grant, is handed over to you again to do what you please with, in advancing agriculture; you are not obliged to ex-

pend it in premiums, you may purchase seed wheat and other grain, or garden seeds, and by uniting in this alone you may more than realise ten times the amount of your first outlay. Again, whatever stock the society may own you have the use of on more advantageous terms than if you were not a member. A certain portion of your funds may be employed in purchasing modern and improved implements of husbandry, which, until a farmer is personally satisfied are of superior character, he will not purchase himself; a portion may also be set apart annually for the erection of a library or the support of a lecturer. This is emphatically an agricultural district; agriculture is the base of both commerce and manufactures, and, unless it be cherished, unless our farmers keep pace with the improvements of the day, our brightest hopes are destroyed; suppose England should declare for free trade, in what condition would we find ourselves? Certainly not in a condition to compete with the grain growing countries of Europe or the United States. We have now a bounty to help us, or not one bushel of our grain would be in the English market. Remember, the day is not far distant, when our supposition will be fact,—every mail gives indication of the principle gaining ground. Up then and be doing—let no local differences keep you apart on this matter—say what you like about the site of school house, and the misapplication of the statute labor, the surplus fund &c., but a united and continued effort must be made to establish and sustain Agricultural Societies, and thereby disseminate information. When will there be a better opportunity to enlist members than at our town meetings. We hope that every candidate for the office of a councillor will take an active interest in the affair? Let a committee be appointed in every township to solicit subscriptions, and let every committee be active.

At a meeting of the New York Farmers' Club, the proceedings of which were published in the *Farmer & Mechanic*, a new method of manufacturing butter was introduced by one of its members, which to us appears so novel, that we give it publicity in the hope that some one in Canada may also practice it, and favor us with the results:—

New Mode of Making Butter.—I am indebted to Mr. Hancock for the following account:

The Lord Bishop of Kildare states that thirty years ago he had formed the idea of a butter churn upon a new principle, but had not carried it into experiment until within a few weeks past. He states that his churn is made of tin, and this fits into another tin cylinder provided with a funnel and a stop cock, so as to heat the cream to the proper temperature. He has a forcing pump with a glass tube, through which he forces atmospheric air in full current, though the cream at nearly the

bottom of the churn. The pump is worked by a hand winch. The experiments are as follows:

Sept. 23. Fifteen gallons and two quarts of cream operated on for two hours and ten minutes, gave 26 pounds of delicious butter.

Sept. 26. Ten gallons and two quarts, gave in two hours and ten minutes, 23 pounds of butter.

Sept 30. Twelve gallons and two quarts of cream in two hours and ten minutes, gave twenty and a-half pounds of butter.

Oct. 3. Ten gallons and two quarts, in two hours, twenty-one and a-half pounds of butter.

Oct. 11. Ten gallons and two pints of cream, gave in one hour and forty-five minutes, twenty-two pounds of butter.

The next Friday. Eleven gallons of cream, gave in two hours 26 pounds of butter.

The different results are ascribed to different temperatures and qualities of cream used.

The Bishop ascribes the results by this process to the intimate introduction of the oxygen of the air.

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

Smoking Seed-corn.—An exchange paper says that if ears of seed-corn are thoroughly smoked in a smoke-house, or over the fumes of burning tar, it will be thereby protected from birds and squirrels, after planting.

Answers to Enquiries.

Agricultural Chemistry.—A correspondent of Etobicoke desires a list of modern works that would aid him in the study of agricultural chemistry. In reply to this inquiry we would state, that the first on the list, is Liebig's justly celebrated works on agricultural and animal chemistry; then follows Chaptal, Davy, and Thaer. If the works of those four scientific and popular writers are read and carefully studied, the student would be in possession of at least the theory of chemistry applied to agriculture. The Farmers' Library and Monthly Journal of Agriculture contains much information, that should be in the possession of the individual who aspires to be a proficient scholar, in the somewhat intricate and complete science of agriculture. This valuable work is published by Greeley & McElrath, Tribune Buildings, New York.

Removing Warts off Cattle and Horses.—A Guelph farmer says, that he has a four year old mare which has a large wart just over the left eye, and desires to know how to remove it. In answer to this inquiry we would state, that having had but little experience in removing these excrescences, we are not prepared to speak with much confidence upon the subject. We shall give an extract from Youatt's celebrated work upon British Cattle, and if any of our readers can furnish us with better information, they will no doubt greatly oblige our Guelph subscriber. The article, or extract, has a more direct reference to warts on horned cattle, but we presume the remedy will be equally applicable to warts on every race of animals:—"Mercurial preparations, whether blue ointment, or corrosive sublimate and soap, are dangerous, but they will usually get rid of the angle berries. —When numerous the practitioner will probably try to remove the largest of them by means of a ligature passed around their roots. This, however, will often be an almost endless affair, and recourse must be had to the knife and the cautery. The cautery will stop the bleeding, destroy the root of the wart, and thus prevent it springing again. When they are small this will be most successfully attacked by means of the nitrate of silver, the warts being touched daily with it in a solid form, if they are few and distinct; washed with a strong solution of it if they are more numerous and scattered over a large surface."

Flax Seed.—Martin McMartin of Cornwall, requests us to inform him through our paper, where a quantity of good new flax seed could be had. We

would beg to state that we have no knowledge of any for sale. We hold a large quantity, but shall sow the entire stock on hand the ensuing spring. If any of our readers have any quantity to dispose of they would find it to their advantage to inform our correspondent of the fact. A lengthy description of Billings' Flax-Dressing Machine is promised in the February number of the *Farmers' Library*, which will probably be illustrated with engravings.

Hussey's Reaping Machine.—H. S. of Ancaster, desires further information respecting the reaper which he saw at Utica. The cutting apparatus operates very similar to a multiplicity of scissors. On the front edge of the platform frame which holds the cut grain, is attached a plate of steel something similar to a saw plate, the teeth of which are four inches long and made perfectly sharp on the point, and both sides like a lance such as are used by some of the regiments of cavalry. This plate is about six feet long and contains as many as twenty of these sharp pointed and sided blades, and is finally bolted to the front edge of the front sill of the platform, with the points directed towards the object in front of the machine. Another blade, corresponding with the one described in every particular, is placed directly under it, which is made to pass right and left of the fixed blade or set of knives—the motion being made by some half dozen cog-wheels that are put in motion by the moving of the machine. The play given to the moveable blade does not exceed four inches, so that each stroke its teeth or lancets make past the teeth of the stationary blade, cuts on the same principle as scissors, whatever soft substance it may be brought in contact with. The height of the stubble can be regulated by the size of the wheels which sustain the platform or woodwork of the machine. As we have had but a short acquaintance with the reaper, only having seen it on the show grounds, it cannot be expected that we are prepared to give a very clear description of its construction. Whether we have made ourselves understood or not, one thing is certain, viz: that it is a most valuable implement, and one which should be introduced in all the old settled townships of Canada. These who desire further information respecting this machine, had better write a letter to Mr. Obed Hussey, Baltimore, Maryland, who will no doubt be happy to furnish them with both information and machines at a cost which will be refunded to them by using it a single harvest.

To Strengthen Old Pictures.—Give two or three coats of good paint to their backs.

Aldritch's Patent Paddle Wheel.

This is considered, by the best judges in such matters, as the invention which is to supersede all others now in use. So high does it stand, that a gentleman, more deserving of notice for the quickness of his judgment, as to the value of a new discovery, than for his moral honesty, ran a race with the agent of the inventor, and took the first steamer, after he saw it, for England, and obtained the broad seal of the Patent Office, just three days in advance of the rightful owner of the patent. He then sold out one quarter of the right for \$5000, and returned in high glee to America for his family, whom he has taken out with him to enjoy his ill-gotten gains.

It is not generally known how this Aldritch paddle wheel works. It consists in reducing the size of the ordinary paddle wheel, and wheel-house, caulking the wheel-house, and inserting both wheels and houses into the bottom of the ship, about midships, one wheel on each side of the keel. No more than a twelve foot wheel is required for a large ship, and only 20 x 12 in paddles. The centrifugal force of the paddles keeps the wheel-house clear of water, although the whole of the wheel may be below the water line, and entirely submerged.

One might suppose that the wheel-house, or box, as it becomes in this case, would be hard to be kept from filling, that the air would be compressed, as in a diving bell, and the water would rise high in it and impede the working of the wheels; but the experiment has been made of boring holes in the wheel-cases or houses, as they are generally termed, and the air and water, instead of rushing through into the hold, is drawn in and carried out at the bottom, as if it were a revolving pump. It would actually keep a ship which might spring a leak clear of water as if it were a rotary pump.

But the great merit of the discovery consists in laying hold of the dense water under a ship's bottom, as if it were a cogged wheel working in a rock of cogs, like a locomotive on an inclined plane of some railroad. There is no mistake. No waves, or ice, or anything else at sea can trouble it. In the meantime, it is all in a case a very few feet square; and a large four-masted ship, lying at the dry-dock, with one on board, lately made better time, with only a seventy horse engine, from Boston out of the harbor, than the British Levithian steamers with their half a thousand horse-power.

When we say that such men as Anthony P. Allvine, Esq., Peter Cooper, Esq., and other practical men, who have made fortunes in the mechanic arts, have been the first to take stock in this invention of Mr. Aldritch, we trust we have said enough to back our own humble but candid opinion as to its great merits.—*N. Y. Far. & Mec.*

Cisterns—Many farmers might conveniently, and with great advantage, furnish themselves economically with an extensive and permanent supply of water, when otherwise deficient, by constructing cisterns. Where they have empty old clay land, no further preparation is necessary for ordinary use for stock, than to excavate to a sufficient size; and to keep up the banks on every side, place two frames of single joice around it near the top and bottom, between which and the banks, heavy boards or planks may be set in an upright position, reaching from top to bottom. The earth keeps them in place on one side, and the joice prevents them falling in. They require to be only tight enough to prevent the clay from washing in. No appreciable quantity of water will escape from the sides or bottom. We have had such an one for years without repairs or any material wasting of water. This should be made near the buildings; and the rains, carefully conducted by the caves-troughs and pipes from an extensive range, will afford an ample supply. For household purposes, one should be made with more care and expense, and so constructed as to afford pure filtered water at all times. These may be lined in various ways, and of different materials, stone, brick or even wood; though the two former are preferable. They should be permanently divided into two apartments, one to receive the water, and another to be used as a reservoir to contain such as is ready for use. Alternate layers of gravel, sand, and charcoal at the bottom of the first, and sand and gravel in the last, are sufficient; the water being allowed to escape from the bottom of the former into the latter, through the several layers mentioned, will be rendered perfectly free from all impurities, and furnishes the purest water in the world. Some who are particularly choice in preparing their water, make use of filtering stones, but this is not essential to secure a choice article. Occasional cleaning may be necessary, and the substitution of new materials will at all times keep them sweet.—*Am. Ag.*

Cheese.—The town of Collins, Erie county, N. Y., made 554,000 pounds of cheese, during the last year. The town of Fairfield, Herkimer county, made 1,355,997 pounds during the same period. Herkimer county turns out annually 8,208,796 pounds of cheese. This, at eight cents per pound, the present price of the article, would give the dairymen of old Herkimer, \$656,703,68.—*Ohio Cult.*

Lotion for Sore Backs in Horses.—Sulphate of copper, 1 part; water, 30 parts. Apply four or five times a day.

Washington County Agricultural Society.

Some unknown friend has kindly sent us a number of the *Washington County Post*, containing the proceedings of the Agricultural Society for the County. The Secretary's Report comprehends a fund of agricultural information which is rarely to be met with, and would serve as a suitable model for the Canadian Agricultural Societies, to aid them in drawing up those useful documents. We give insertion to that part of the report which relates to the premium crops of Indian Corn, and also the accompanying affidavits:—

Calvin Skinner, Cambridge, best acre of Indian corn, \$6, 131 bushels, 26 quarters; yellow twelve rowed; on alluvial gravelly loam, a meadow yielding large crops; 20 loads coarse barn manure applied and sward broken up the 1st May; 15 loads fine barn manure then spread on and well harrowed and furrowed three feet each way—planted 11th May, seed dry; leached ashes dropped on the young blades, and a few days after plaster; harrowed and hoed; plowed and hoed; not over five bushels of unsound corn on the acre; expense \$24 35; nett profit \$51 30.

John McNaughton, Salem, second best, \$4; 128½ bushels yellow eight-rowed. The following is Gen. McNaughton's statement, with its attestations:—

1st. Soil slaty loam; subsoil retentive.

2d. Situation a side hill of gentle descent, facing the south.

3d. For four years previously it had been mowed, producing clover and timothy in fair abundance.—

4th. About one half of the acre had twenty loads of yard manure taken into it last fall, and spread in the spring before plowing; no manure in previous years except one coat of plaster three years ago. The half not manured had been used to fodder cattle on for three or four years.

5th. About the middle of April the green sward was turned over about six inches deep, and just before planting was dragged carefully so as not to displace the turf, and marked out with a corn plow in furrows three feet apart and about two inches deep.—

6th. Planted May 4th and 5th, in rows three feet by two, with four and five kernels in a hill, rolled in plaster. The seed was of the common eight-rowed yellow variety.

7th. It was plastered immediately after it was

up, was weeded the fore part of June and hoed before the 4th of July, the corn plow being used both times one way only.—The corn was cut up at the root in August and September, and husked in October, finishing on the eighth day.

8th. Expense:—

20 loads manure	-	\$5 00
Plaster, say 1 bushel	-	37½
Plowing	-	1 50
Harrowing	-	50
Planting, weeding and hoeing	-	4 50
Harvesting	-	3 00
Interest on value of land	-	3 50
		18 37½
128½ bushels corn at 50 cents	\$64 25	
Stalks	-	10 50
		74 72

Nett profit - - - \$56 37½

I certify that the above is a full and honest account, to the best of my knowledge.

(Signed) JOHN McNAUGHTON.

Dated Salem, Oct. 14, 1845.

State of New York, Wash. Co. ss.:—JOHN Fairley, 2nd, of the town of Salem, in said Co. being duly sworn, saith, that he measured the ground on which the foregoing crop of corn was raised, and made the same one acre.

(Signed) JOHN FAIRLEY, 2d.

Sworn before me the 14th Oct. 1845,

JOHN McLEAN,
First Judge Wash. Co. Courts.

State of New York, Wash. Co. ss.:—James McNaughton, of the town of Salem, in said Co. being duly sworn, doth depose and say, that he was present during the husking of the whole corn in the preceding application of John McNaughton mentioned—that he assisted in measuring every basket thereof, and that there were two hundred and eleven baskets of ears of corn when husked; that two of said baskets of said ears, filled in the same manner that all said baskets were filled, were shelled, and each of said baskets produced of shelled corn nineteen and a half quarts—making in the whole one hundred and twenty-eight bushels and eighteen quarts of corn from the said acre mentioned in said application.

(Signed) JAMES McNAUGHTON.

Sworn before me the 14th Oct. 1845,

JOHN McLEAN,
First Judge Wash. C. Courts.

Horse Distemper.—A correspondent of the *Prairie Farmer* recommends putting a rowel on the top of the head of the horse. His way is, to take up the skin and mane, just where the bridle covers on top of the head, and with a knife or big needle, put a string in to make it sore; as soon as it begins to run, the horse will be seen to mend. He says he has seen hundreds cured, and never knew one case to fail.

Intellectual Improvement among Farmers.

We have received from "H. T. C." a well written essay, for which the above would be a not inappropriate head. We doubt not our readers would be gratified by a perusal of the paper entire, but the most we are able to do under the press of various other communications, is to present the following extracts:

"The *advantages* of intellectual improvement among farmers, are (some of them at least) as follows:—

1st. The sounder the root, the more vigorous is the tree; the firmer the foundation, the more steady the building; the purer the fountain, the clearer the stream. The improvement of the agricultural mind strengthens this root, consolidates this foundation, purifies this fountain. Hence the whole nation is benefited.

2d. The improvement of taste in the fine arts, developed in landscape gardening, architecture, &c., will beautify the country draw closer the cords of patriotism around every heart, and exalt and purify the feelings connected with our native land.

3d. It will greatly increase the respect with which the American character is regarded abroad.

4th. It will have a moderating effect on political contentions, when the public mind is less liable to imposition; more determined on having men of integrity and worth to represent it in our national assemblies; and better capable to judge of that worth.

5th. Prejudice, that mighty opponent of all reason, improvement and truth, will be in a great measure abated.

6th. Sound literature will be circulated and read to a greater degree than has yet been attained, instead of the poisoning trash now so widely disseminated.

7th. We shall have a national literature.

I now proceed to show the *perfect possibility* of carrying out this improvement of the agricultural mind; and what I have to say will be applicable to every farmer in the land, and involves the highest and most precious interests of our beloved country.

The soul of all success in any business is *method*. What would become of the merchant if his day-book and ledger were not kept with the most methodical accuracy? What would befall the banker, the tradesman, or the scholar, if all their operations were not conducted by the same regular processes? And what hint is so powerfully suggested to the farmer as this very method, by her with whom he holds constant communion—*same Nature herself?* The seasons, spring and summer, autumn and winter, roll round in an eternally regular succession. The

seed germinates, the blade appears, the ear, the blossom, and the grain—each in its turn, succeed the other by the same unvarying method. Animals are brought forth, nourished and matured by the same unchanging law. The rain and sunshine, the frost and the dew, the storm and the calm, are always punctual in their season. Why therefore should the farmer, in the midst of all this regularity, be the only thoughtless, irregular, confused being existent? Why, on the contrary, may not all his operations be conducted by a fixed plan from year to year; his farm be laid out in a regular number of fields, in which a regular rotation of crops may follow one another in a regular order; his time and that of his laborers disposed of according to a regular system; his family and household operations conducted by the same regular method from day to day? All this planning may be done with an *immense* saving of time and thought, compared with the usual rambling, shambling way of doing business; and when once it is settled there is no more thought about it. All is as regular as clock-work."—*Alb. Cult.*

Exhaustion of Land by Growing Wheat.—To confine ourselves to Wheat—it appears from the recent researches of Dr. H. Will, that 100 parts of the earthy constituents of the grain consist of—

Potass	- - -	22 to 34 parts.
Soda	- - -	16 "
Lime	- - -	2 to 3 "
Magnesia	- - -	9 to 13 "
Peroxide of Iron	- - -	1 "
Phosphoric acid	- - -	49 "

A trace of sulphuric acid, silica, and fluogine, whilst the early constituents of wheat straw contain very little phosphoric acid, but a large amount of silica. Now, it is obvious that if the farmer continually restores all the straw to his land, but neglects, from want of knowledge, or means, to replace the early matter of the grain, the land will be exhausted, and he cannot continue to grow wheat upon it. Moreover, if he make an effort to maintain the fertility of the land for wheat, he must restore to it every ingredient of which it becomes exhausted by his crop in a proper proportion. To know this proportion essential to the growth of every particular crop, he must have recourse to information supplied by chemistry. One of the earthy constituents of wheat enters so largely into many other crops, that the amount taken off the land everywhere is very great, and constitutes a considerable proportion of the total amount contained in ordinary land, so that the loss has already, even in the present state of science, excited attention, and aroused the efforts of the farmer to repair it. We allude to phosphoric acid. Now, the chemist has shown, that in the bones of animals a great part of this material which has been drawn from land in the growth of vegetables, is to be found, stored up in a form suitable for its restoration.—*Proposal for establishing a College of Chemistry.*—*Ag. Gaz.*

Painting.

Over and over again we endeavored to impress upon our readers the economy of covering wood work with paint. The most economical people in the world do it universally.—Moreover, the most offensive color to the eye is the dingy unt that weather imparts to wood—how different the lively, cheerful green and white of a well painted house, from the dark, gloomy appearance of unpainted weatherboarding. For our own part we would freely dispense with one half of the cheer under which a Virgiman table groans for a single coat of paint upon the outside of the house. To send for a professed painter and have his three-coat work measured by the yard, at the usual rate, is a pretty expensive business; but there is no need to do any such thing. you can buy twenty-five pounds of white lead from an apothecary for two dollars and twenty-five cents; it comes ready ground and mixed with oil; all you have to do is to rub it up on a stone or in a paint mill with an additional quantity of linseed oil until it is thinned to the proper consistency, of which a few trials will enable you to judge better than any description.

To make white paint, the lead alone will suffice; lead color is formed by mixing lampblack into a paste with spirits of turpentine and then adding it to the point until the proper shade is obtained; for a red, Venetian red, for a blue, Prussian blue must be pounded and ground or rubbed in with the paint, and so on. When you are done with your brushes, either cleanse them of the paint with spirits of turpentine, or keep them immersed in water, which will prevent their hardening. For putting on the paint, which in plain work is so simple that any boy may be learned to do it in a couple of hours, we copy the following directions from the Scientific American, which by-the-by, is an old and valued friend under a new name:

PLAIN PAINTING IN OIL COLORS.

The beauty of this kind of painting depends principally on the uniformity and smoothness of its finish; and this is effected by distributing the paint equally on every part of the work, and finishing by drawing the brush lightly and steadily over the work, in the direction of the grain of the wood. Care is required to avoid leaving a superfluous quantity of paint in the quirls and corners; all such accumulation must be brushed out. In painting houses outside, the workman should

be particularly careful to paint the edges of the clapboards and all the hollow corners; and for this purpose, the brush must be held with the handle inclining downward, that the brush part may work upward, filing the edges and corners. Paint, for inside work, usually requires an ingredient more drying than raw linseed oil; and for this purpose, an article called litharge, being finely ground, is added to the paint, in the proportion of one ounce to each pound of paint;—more or less, according to circumstances. This litharge is evidently the best dryer for floor paint that is known; paints tempered with this, dry harder, and wear better, than any other: but painters have in general use a fluid article, called *drying japan*, which is very convenient as a dryer, and is excellent for carriage and ornamental work, but is in more general use than it should be, in house painting. This japan consists of oil, gum shellac, litharge, and red lead, united by being boiled together. Red lead is, of itself, a good dryer, in such colors as are not injured by its use; but when a delicate white is required, a sulphate of zinc, known as *white vitriol*, must be used. It is a general custom with painters, however, to prepare a thin oil, by boiling it, that it may the more readily dry, even without any other dryer. The usual mode of boiling the oil, is to place several gallons in an iron kettle over a slow fire, and when it begins to boil, add four ounces of litharge and an equal quantity of red lead, to each gallon of oil: the oil is continued boiling, being almost constantly stirred about with a stick, for about half an hour, or until it boils clear, without frothing; it is then taken off to cool. This oil can be always procured ready boiled; at the paint shops; but prints mixed with this, will not prove so durable when exposed to the weather or to wear, as those ground in raw oil, and having good opportunity to dry. Raw oil, with litharge for a dryer, is best for floors or other inside work, in warm, dry weather. In giving the work a second or third coat, however, it is requisite to mix spirits of turpentine with the oil, to prevent too sharp a gloss, and render the paint more firm and hard. The paint is first mixed with oil, and the spirits of turpentine is added, in the proportion of a pint to two quarts of oil; the proportion varying, however, according to circumstances. If the paint is required to be left *flat*, or without any gloss, the spirits may be used in the proportion of one half, or even two to one: but such paint will not wear

so well. Alcohol is sometimes used instead of spirits of turpentine, but neither of these should be used in any considerable quantity in outside work or warm weather: in cold weather they are convenient to make the paint flow more freely. As a general rule, after the first coat of paint is dry, and when the second is to be applied, the work must be examined, and all the cracks, seams and holes, filled up smoothly with putty, (a simple mixture of oil and Spanish whiting,) and all the rough parts smoothed with sand-paper or glass-paper and after smoothing, the dust must be carefully removed with a dry brush. A general but improper custom which prevails with most painters, is to apply the putty with the fingers merely, in filling the cavities of nails and brads, but instead of this, the putty should be always smoothed with a chisel-shaped piece of wood. When any uneven parts of the surface is to be smoothed, the putty should have a little white lead paint mixed with it, to make it adhere better. If an old room is to be painted, such parts of the surface as have been discolored with smoke, or have been exposed to wear, should be washed over with a dilute mixture of lime and water, and allowed to dry before the paint is applied: and such parts of a floor as have become bare, or from which the paint is worn off, should be first painted with very thin or diluted paint, and become dry before the whole is painted: as the same paint cannot be suitable for the painted and the unpainted parts. We shall next proceed to instructions in producing and compounding various colors.—*Southern Planter.*

Chemistry and Agriculture.—Ashes.

The ashes is the earth of the plant, though it is not all that has been derived from the soil. Could we produce plants that contained no earthy salts, the land would not be so rapidly impoverished as experience shows that it is. But no such crops can be found. Every plant must take up a certain portion of the soil. This is an inviolable law of nature. Different plants require various proportions of these elements. They must all have potash, lime and phosphoric acid. These crops that contain the most ashes exhausts the fields soonest. The ashes exist in solution in the sap of plants.

The soil rarely contains five per cent. of those earths that are found in plants, and often much less. The quantity of these earths that are consumed in the ordinary course of cultivation is not far from one hundred to one hundred and fifty pounds per acre per year, three fourths of this is sand in combination with potash. Could we re-

store the earthy salts with the carbon and nitrogen to the soil from which it came we might continue to reap the same kind of crop year after year without material diminution in its productive powers. This is what takes place in spontaneous vegetation, the plant perishes where it grew, and thus pays back what it had borrowed.

The same salts may be found in ashes as in the evacuations of animals. If what has been said be true, it follows that ashes is one of the most valuable of manures, and this is sustained by experience. I have been informed that large quantities of leached ashes are shipped to New York, from the northern part of that State, for the use of the Poudrette manufacturers, &c. It sells at from 10 to 12 cents per bushel. Leached ashes consist chiefly of phosphate of lime or bone earth, lime, marl, plaster of Paris, potash, charcoal and sand.

Ashes is found of most service on a heavy clay soil, abounding in inert vegetable matter. Light sandy soils require but small doses. The quantity that has been applied, varies from four to eighty bushels to the acre; when applied in the latter quantity the good effects continue manifest for 15 to 20 years. It has been found beneficial on turnips, potatoes, clover and grass. It may be plowed in or used as a top dressing.

As the season for slaughtering hogs has arrived, a few words on the method of turning their offal to advantage may not be unacceptable. In France the refuse of the slaughter houses is boiled so as to make a thick soup; this is mixed with a quantity of garden mould, and used as a top dressing.

According to Dr. Dana, one pound of animal matter will impregnate ten pounds of vegetable mould; or 100 lbs. is sufficient to convert a cord of swamp muck into the richest manure. The same high authority recommends a compost of one part of leached ashes, to three of swamp muck.

CHARLES H. RAYMOND.

Cincinnati, Nov. 1815.

—Ohio Cult.

To Cure Sheep Skins with the Wool on.—Take a spoonful of alum and two of saltpetre; pulverize and mix well together, then sprinkle the powder on the flesh side of the skin, and lay the two flesh sides together, leaving the wool outside. Then fold up the skin as tight as you can, and hang it in a dry place. In two or three days, as soon as it is dry, take it down and scrape it with a blunt knife, till clean and supple. This completes the process, and makes you a most excellent saddle cover. If, when you kill your mutton, you treat the skins this way, you can get more for them from the saddler, than you can get for the wool and skin separately disposed of otherwise.

Other skins which you desire to cure with the fur or hair on, may be treated in the same way. —*Emigrant's Hand-Book.*

To preserve Plants from Slugs.—Strew well-cut chaff round the plants.

Experiments on Mr. Pell's Farm.

In a short and imperfect account which appeared in our last volume of the farm of Mr. Pell, in Ulster County, our readers will recollect we intimated, that we hoped at a future day to be able to give some of his valuable experiments to the public. We now commence, and shall continue them from month to month, trusting his example may be followed by others of our friends, and that from them also we may be allowed to record an account of the same in our pages.

CULTURE OF WHEAT.

First Experiment.—On the 1st of September, 1842, a field containing 20 acres was prepared for wheat. The seed used was the white flint, weighing 60 lbs. per bushel. It was prepared for sowing by soaking it in strong brine four hours, then drained through a sieve, and spread upon the barn floor, and a dry composition, highly fertilizing, sifted upon it, at the rate of one bushel of composition to ten of the seed wheat, which adhered to the seed as it dried. It was then sown at the rate of three bushels per acre, and 300 bushels of oyster-shell lime spread over the field, and the whole harrowed together. Two men followed the harrow, one sowing clover seed, at the rate of a bushel per acre, and the other, on the same land, at the rate of half a bushel of timothy seed per acre. After that the ground was twice harrowed and rolled. The wheat and grass grew luxuriantly during the following season, and presented throughout a perfectly healthy and deep green appearance. Adjoining this another field, containing 10 acres, was sown with the same kind of wheat, in a dry state. This land was not limed. The wheat grew well the next season until it blossomed, after which it appeared sickly. About this time the grain was formed, insects attacked it, and the crop was totally destroyed. The straw was covered with rust, and unfit for any purpose except manure. The wheat on the 20 acre lot was cut in the milk, commencing on Monday morning, on the Saturday following it was ground into flour. The grain weighed 64½ lbs. per bushel, and was awarded a premium by the American Institute, as the best of forty-three parcels exhibited.

It was supposed by many farmers, that so large a quantity of lime as 300 bushels per acre would have injured the land, it being a sandy loam. The grass seed grew finely, and has yielded since three tons of hay per acre.

Second Experiment.—In September, 1843, a field of 30 acres was sown with prepared wheat, and top-dressed with charcoal dust, at the rate of 52 bushels per acre. It grew rapidly, was not attacked by rust, mildew or blight, when fields near it were almost destroyed. A small portion of the lot, which had received by accident a large supply of charcoal dust, produced at the rate of 78½ bushels of wheat per acre. The grain was cut when the straw presented a yellow appearance four inches above the ground. At that stage of its growth, a milky substance could be expressed readily from the kernels, by gentle pressure of the forefinger and thumb. It was allowed to remain three days on the field, when it was carried to the barn and threshed out immediately. It weighed 64 lbs. per bushel, and sold for 12½ cents above the market price by weight. A few acres were left standing, and cut three weeks after, when others in the neighborhood harvested their wheat. This proved small, shrivelled, and weighed 56 lbs. per bushel. The straw had lost its most nutritious substances, was much lighter than that cut earlier, and was consequently less valuable. Mr. Pell thinks that after the stem turns yellow near the ground (there being no connection between the root and the tassel), the kernel wastes daily. By early cutting, nearly all the saccharine matter is preserved in the straw, and it is thus rendered almost as valuable for fodder as hay. If the straw could be returned immediately to the field and plowed under, it would doubtless prove a more valuable manure than if concocted into excrement by passing through the animal, for this reason by the analysis of Sprengel, it contains potash, soda, lime, magnesia, alumina with a trace of iron, silica, sulphuric acid, and chlorine. In passing through the animal it assists to form the whole animal economy; and as manure is devoid of a large portion of all the substances mentioned, the grain contains precisely the same substances, in different quantities. To prove this, Mr. Pell sowed some wheat on a pane of glass, and covered it with straw, not allowing any earth to come in contact with it. This grew as well as if it had been sown in earth, but unfortunately was destroyed by accident before it came to maturity. In France the same experiment was tried, and fully succeeded.

Third Experiment.—On the 9th of October, 1844, the tops from a potatoe field were gathered into a heap and burnt, and the ashes returned

with a view of sowing wheat. The seed was then prepared thus: soaked four hours in brine that would buoy up an egg; then scalded with boiling hot salt water mixed with pearl-ash passed through a sieve; distributed thinly over the barn floor, and a dry composition sifted on it, composed of the following substances. Oyster-shell lime; charcoal dust; oleaginous charcoal dust; ashes; Jersey blue sand; brown sugar; salt; Peruvian guano; silicate of potash; nitrate of soda; and sulphate of ammonia. After sprinkling this composition on the wheat, the sun was permitted to shine upon it half an hour, when the particles became as it were crystalized upon the grain. In this state it was sown at the rate of $2\frac{1}{2}$ bushels per acre, directly on the potatoe ground, from which the tops only had been removed, and plowed in to the depth of 5 inches, harrowed once; a bushel of timothy seed then sown to the acre, and harrowed twice. At the expiration of 15 days the wheat was so far above ground, as to be pronounced by a neighbor in advance of his which had been sown on the 1st of September, in the usual manner, without any preparation. Contiguous to this, prepared wheat was sown on carrot and turnip ground, the tops not having been removed, and plowed in together with like success. Another field adjoining, 3 bushels of wheat were sown per acre, in a dry state, on potatoe ground first plowed and harrowed, and after sowing, twice harrowed. The first parcel, which was plowed in to the depth of 5 inches, was $2\frac{1}{2}$ inches high before the last appeared above ground.

The following composition of Mr Pell's own compounding was then spread by hand broadcast over the whole field, at an expense of $\$3$ per acre: stable manure; dry charcoal dust, hickory wood soot; bone dust; oleaginous charcoal dust, oyster-shell lime; decayed leaves, leached ashes, unleached ashes; guano; sal soda, nitrate of potash; fine salt; pouquette, horn shavings, refuse sugar; ammoniacal liquor; blood, sulphuric acid; magnesia; plaster of Paris, plaster from walls ground; decayed grass; decayed straw; decayed weeds; fish; refuse oil, sea weed; oxide of iron; and oxide of manganese.

The object being to furnish food for the growing crop, every substance required for its sustenance was sought for in this composition. By Sprengel's analysis, all cereal grain, peas, beans, carrots, potatoes, turnips, clovers, and grasses, contain chlorine, potash, phosphoric acid, soda,

sulphuric acid, lime, silica, magnesia, oxide of manganese, alumina, and oxide of iron, with the exception of wheat, which has no oxide of manganese, and but a small portion of iron.

Fourth Experiment.—On the 29th of October, 1844, eight bushels of wheat were sown to the acre on sod ground, and then plowed in beam deep and harrowed four times. The result of this will be given next fall.

If the two last above experiments should result favorably, the farmer will be enabled to use his corn, potatoe, and other root ground—which is always left in the best possible tith by these crops—for wheat or rye, instead of allowing it to remain idle, as is the present custom, until the ensuing spring.

SOILING.

Treatment of Milk Cows.—During the summer, Mr. Pell's cows are kept in the barn yard and soiled. They are fed three times per day, at stated hours, and in addition to their ordinary food, receive at 12 o'clock each day eight quarts of wheat bran, wet with water. The general feed is dry hay, green grass, green corn stalks, occasionally a few potatoes, and salt whenever the cows feel a disposition for it. Water they have free access to at all times of the day and night, and should never be without it. An experiment was tried of giving the cows water only three times each day, immediately after eating their food, and they seem satisfied. They were then constantly supplied, and drank freely nine times in one day, taking apparently as much at each draft as when allowed water only three times, so that, in reality, when permitted to drink only three times a day, they must have suffered much from thirst in the intervals.

When the weather is very hot or rainy, the cows have sheds made partially under ground, into which they can retire and ruminant undisturbed. With this treatment they constantly take on fat, and secrete twice the quantity of milk that they would if allowed to run at large. During the past summer the cows gave an average of 16 quarts of milk daily, and in the fall were fit for the butcher. In winter they are kept in stalls in a warm barn, luted freely, as occasion requires, and daily curried and rubbed. When the weather is fine, they are turned into the barn-yard for exercise in the middle of the day. Twice a day they are fed with cut oat and wheat straw, with a small quantity of bran sprinkled over it,

for the sake of which they eat their allowance entirely up, and once a day cut hay; they are salted four times a week, and have roots, such as beets, carrots, potatoes, or turnips once a week. By cutting the straw and hay, cattle are enabled to eat their meal in 25 minutes; whereas, if uncut, they are engaged in masticating their food half the night, the labor and fatigue of which deprives them of the necessary time required for their rest.

Advantages of this Soiling Stock.—Mr. Pell carted from his barn-yard 230 loads of manure on the 10th of May, which was made in the preceding six months. On the 10th of November, from the same yard, he carted 236 loads more, averaging 30 bushels per load, made within the six months following the 10th of May. Five cows only were kept, which thus made 460 loads of good manure in one year. During the summer, leaves, straw, &c., were constantly thrown into the yard, and occasionally covered with charcoal dust. Each cow voided in six months 6,000 lbs. of urine, which was absorbed by the refuse, and its strength retained by the charcoal dust, gypsum, &c; the manure, therefore, was intrinsically worth the New York city price, viz., \$1 the wagon load, or \$466.

In addition to making this great quantity of manure, the other advantages of soiling are: 1. No cross fences are required on the farm. 2. The cows give twice as much milk as when running at large. 3. They are fit for the shambles in the fall, being fat. 4. They are always ready to be milked. 5. They are never worried by being driven to and from the pasture. 6. They eat all the refuse grass, which would otherwise be lost. 7. Eight acres will keep the a longer and better than 40 would depastured. 8. The fields are always in order, not being poached by their feet in wet weather. 9. The person is not much longer in cutting their food and giving it to them, than he would be in driving them to and from their pasture. 10. Manure enough is saved to pay the interest on a large farm. Numerous other good reasons might be given if the above are not considered sufficient.

The above experiment of Mr. Pell, showing the superiority of the soiling system, is strongly corroborated by others made in Europe, though probably unknown to Mr. P. when he commenced his. We quote from a speech recently made before a meeting of the Larne Farming Society, in Ireland, by Mr. Donaghy, Superintendent of the

Agricultural Department of the Larne National School.

“Mr. Smith, of Deanston, a gentleman, whose scientific and practical knowledge, as an agriculturist, has placed him in the first rank of the improvers of the soil, is no mean authority in support of the soiling system. In the summer of 1841, he made an experiment on a dairy of twenty cows, pasturing the one-half and house-feeding the other. He selected them as equally as possible, in point of carcase, condition, and milking quality. The result of his experiment was, that the cows house-fed gave their milk more uniformly, and more plentifully, and continued throughout in excellent health, and improved in condition from 30s to 40s per head over those at pasture. The cows house-fed were kept on three-quarters of a statute acre each, whilst those that were pastured required one and a quarter acres of pasture, and a quarter acre of cut grass and vetches, making one acre and a-half for each, so that, upon the whole, about the one-half of the extent of ground necessary for the keep of cows at pasture, was sufficient for those kept in the house. I could adduce abundance of other proof, from equally respectable gentlemen, in support of the superiority of this system to that in general practice; but I shall content myself in merely saying, that if, according to Mr. Blacker, a gentleman who deserves the best thanks of the agricultural community, three cows could be kept on the same extent of ground as is at present required to keep one—and I have not the slightest doubt but that, by proper management, they could—the benefit thus resulting to the farming interest would be immense. But the increase of milk and butter consequent on its adoption, would not be the only resulting advantage—the increase of the manure heap would be equally advantageous. No farmer, I care not how good his practice in other respects may be, can farm profitably, without a plenitude of manure. Now, it has been calculated, on an average, that cows are not kept in the house, at present, more than eight hours each day, throughout the year. If such be the case, and I have no reason to question the correctness of the calculation, would not a cow, which is house-fed, summer and winter, produce three times as much available manure as one pastured? If, then, according to Mr. Smith's opinion, two cows could be kept in the place of one, six times as much manure, could be made—if Mr. Blacker's views

be correct, nine times as much manure could be realized. I contend, therefore, that the general adoption of this system would do away with a great deal of the poverty, privations, and misery, with which the small farmers are at present beset. And how? By increasing the means of subsistence. If we look at Belgium, with a population of 321 to the square mile (and an inferior soil to ours), and compare the condition of its inhabitants with that of the inhabitants of our own country, in which the population does not exceed 263 to the square mile, the contrast, on our part, is melancholy. But the Belgians pursue a regular rotation of cropping, house-feed their cattle, keep urine tanks, &c., and, by superior management, are in the enjoyment of a degree of comfort and happiness to which the lower classes of Irishmen are utter strangers."—*Am. Ag.*

Breaking Steers.

Now is a good time to commence breaking steers. For this purpose, bows and yokes of a suitable size must be prepared, which should be first put on them standing together in the stable after they have eaten their morning's fodder. When they have worn this an hour or so each day, for several days, they may be taken into the yard and be allowed to walk round a short time, and then unyoked. When well accustomed to their yoke, they should be placed between two other pair of cattle, and driven off a short distance without any load. Then they may be attached with the other team to a load, and depend upon it they will learn what is wanted of them, from seeing what other cattle do, faster and easier than in any other way. Never whip them or speak harshly. If they do not perform instantly all that is required, it is from ignorance generally, and not, as it is too often supposed, from obstinacy or viciousness. Then all you have got to do is, to teach them from the example of other well broke cattle. But when one has not other cattle to break them with, more attention will be necessary, and they will require guiding in their movements by a cord attached to their horns. The teamsters in New England excel in breaking and driving cattle, and they frequently have them so well taught, that they will perform single or together, in the yoke or out of it, by mere word of command, anything reasonable which can be required of them.

The finest breed of working cattle is the De-

von and its crosses. These are of a deep, bright red color, with orange colored noses, an orange-rim round the eye, and a beautiful clean upturned horn of a clear yellowish white. Our farmers in this vicinity frequently send to Connecticut for such oxen. They are active, hardy, fine made animals, and capable of drawing very large loads. We have seen a pair of four year old steers start off at full gallop with a load of 6000 lbs. at the cattle shows in New England, and then turn round and back the load on level ground with ease. Thus, however, is a large load for such young animals, and great care should be used lest they strain themselves in their ambitious efforts to move it. These oxen will plough an acre of ground as quick as a pair of horses, indeed, they oftener beat than get beaten at the plowing matches. We greatly admire such animals, and always kept them on our farm for work instead of horses. We found them more serviceable in the generality of farm work, while their gearing and food did not cost near as much as those of horses, and then if any accident happened to them they could be killed for beef, as we always kept them in good order. If an accident happens to a horse he is a dead loss, save his hide and shoes.

We do wish, boys, you could persuade your fathers to be more careful in their selections of bulls and cows to breed from. The beautiful pure Devons can be had at quite reasonable prices now. But you will use them at least, we hope, when you get to be grown men. Let the eye once get accustomed to the beauty and good points of this choice breed of cattle, and you would never forget them. How we wish your schoolmasters were able to instruct in such things. We would engage to teach you more in a few hours conversation, with some good live animals before us to illustrate it, than you could learn from books or by yourselves in half a life. Thus taught, you could not be imposed upon by those miserable cheating pedlars, with their grade animals, which they are continually piling off upon an ignorant public at low prices, for thorough breeds.—*Am. Ag.*

To destroy Slugs on Land.—Sprinkle over it powdered fresh slaked lime, or chimney soot.

For Sprains and Bruises.—Mix equal parts of beef-gall and vinegar; apply it often to the part injured, and dry it by the fire.

Constitution of the Newmarket Agricultural, Horticultural, and Mechanical Club.

ARTICLES.

I. This association shall be known as the "Newmarket Agricultural, Horticultural, and Mechanical Club."

II. The object of the Club shall be the circulation of general intelligence and practical instruction in all the branches of Agriculture, Horticulture, and Mechanism:—

1. By the establishment of a permanent Library of the best books on those subjects.
2. By the establishment of a correspondence with other Associations seeking the same objects.
3. By the establishment of Lectures, Discussions, an Annual Dinner for the Members and their friends, and other means for the general circulation of knowledge on the subject embraced by the Club.
4. By supplying each member, who desires it, with a free copy of a cheap Agricultural Magazine, published in Canada.

III. The officers of the Club shall consist of a President, three Vice-Presidents, a Secretary, a Treasurer, a Librarian, and three standing Committees of three persons each: one on Agriculture, one on Horticulture, and one on Mechanism; and a Board of Directors to be composed of the President, Vice-Presidents, Secretary, Treasurer, Librarian, and the Chairmen of the standing Committees. which Board shall have the charge and general management of the property and business of the Club, subject, however, to the order and direction thereof.

IV. All the officers shall be chosen at the Annual Meeting of the Club; which shall be holden in Newmarket on the last Saturday in each year, at the hour of two o'clock p. m., at such place as the Directors shall order.

V. All special meetings of the Club shall be called by the Secretary on the requisition of a majority of the Directors, and notice thereof, as well as of all regular meetings, shall be published in the magazine patronised by the Club, or by hand-bills, at least seven days previous to such meeting.

VI. Any person may become a member of the Club by the payment of one dollar, and an annual subscription of the same amount, to be paid into the treasury in the month of January in each year.

VII. This Constitution may be altered or amended at any of the regular meetings of the Club, provided that notice thereof be given at least one month previous to the amendment being adopted.

BYE-LAWS.

1. Any member who may fail to pay his fines or forfeits on books taken from the Library, at the time of returning the book, shall be debarred the use of the Library until such fines and forfeits be paid.

2. All Books, save such as the Board of Directors may except, may be taken from the Library by the members, but only one book shall be in the possession of a member at one time.

3. Members residing within five miles of Newmarket may keep a Book out of the Library *one month*. No member shall detain a book from the Library longer than the period allowed, under a penalty of three-pence for each week so detained, and any member lending a book belonging to the Club shall pay, as a penalty, the sum of one dollar.

4. Any member who may lose a Book belonging to the Library shall pay the value of the volume or set, as assessed by the Board.

5. The Treasurer, at each Annual Meeting, and as often as he may be required, shall render an account of all receipts and disbursements of the Club for the year then past.

6. The Secretary shall keep the records of the Meetings, and at each Annual Meeting shall report a list of the members of the Club, and also of those who may have forfeited their rights as members.

7. The Librarian shall keep a Catalogue of all the books in the Library; collect the ~~fees~~ for loss, damage, or detention of any book therein; and also keep an account of all the books loaned to members.

8. The Club shall hold monthly meetings for the purpose of hearing addresses, discussing questions, and receiving reports on the several subjects embraced by the Club.

9. The benefit arising from the annual dinner party, and the donations received from friends, shall be appropriated in employing a competent travelling Agent to obtain members and collect subscriptions to the Club.

10. No alteration shall be made in any Bye-law except at one of the regular meetings, written notice having been given at a previous regular meeting.

THE FORCE OF HABIT.

My experience teaches me that I fail much oftener from inattention to *little matters*, than for want of general knowledge in the practice of farming. And this inattention in nine cases out of ten, is the legitimate offspring of habit; and the reason why habit takes such an erroneous direction arises from the fact that our minds are naturally attracted by the *magnitude* of objects, without considering that this magnitude is only attained by the accumulation of single atoms.

To illustrate the importance of this idea, we will suppose two farmers, A and B, start at once in the business of farming, with \$1000 capital each. A saves six per cent. a year by exact economy, whilst B sinks property at the same rate. For a time, perhaps, we shall hardly be able to notice any difference in their thrift; but in the course of a few years, we find A a wealthy farmer, and B fast sinking to poverty. A fraction short of twelve years, would suffice, at compound interest, to place A in possession of \$2000, and B with \$500. Twelve years more would give A \$4000, and B \$250. Another twelve years would give A \$8000, and B \$125. Thus we see the result of habit in these two men in the important results produced, supposing Providence favored both alike. But this is not all. habits generally acquire strength with the lapse of time. The man who sinks in the ratio of six per cent. at first, would soon reach twelve, and so on, until he was ruined.

Suppose, now, we look at the practice of these men a little in detail. They neither of them are dissipated men in their general habits, and are good at work. But A has learned to calculate a little closer. He knows that it requires no more to keep a good cow than a bad one. Hence, then, we find him in possession of a little better stock. His cows give at least a quart of milk each per day more than B's; his sheep yield a little more wool, and his wool, in addition, is a little finer.—Here, then, he saves a few dollars. A also seizes with avidity a few leisure hours to haul his muck, etc for manure, whilst B, feeling a little tired, or the oxen being in the pasture at some distance, thinks it best to omit it until he can hire a hand a day and get a good lot of it. Thus A has a little more manure, and of course a little better crop. So we see A not only producing more, but the foundation of his prosperity widening in every direction.

But perhaps some one will say we can't help habit—it's second nature. Asking your pardon, sirs, I demur to this statement. You have the power of reasoning and the faculty of judging given you by your Creator, and no earthly power can hinder your exercising it. Accustom yourself, then, in every branch of your business, to ask this one question—is the method I propose, the best, all things considered? Make a calculation of the profit and loss of every crop, and increase or diminish each kind, as more or less profitable, having reference to the permanent improvement of the soil. I have frequently been surprised at the results I have obtained in such calculations, and frequently altered my course, very much to my advantage.

But you may not only improve your own habits by the discreet use of your judgment, but your domestic animals have habits which you may mould to your advantage. I will illustrate this by one very simple incident. I have a considerable range of woodland pasture, and I find by giving my cattle their salt at night near the outlet of the pasture, they soon learn to resort to that spot at that time of the day. Another incident may be worth relating. I had come to the conclusion that a small lot of hens would more than pay for their keeping, in destroying worms, &c., without any reference to their eggs or chickens, provided I could learn them to keep out of the grain. Now, for two years past, I have not had a mite of trouble with them, though running at large all the time, and grain within ten yards of the house and barn. The simple expedient adopted was, the tanning down a lot of grain for them to go to as they pleased. And the way they turned out the eggs in consequence, was a caution to those who neglect to feed biddies.

J. H. JENNE.

—Am. Ag.

Sentiments of a Great Man.—The more I am acquainted with agricultural affairs, the better I am pleased with them; inasmuch that I can nowhere find so great satisfaction as in those innocent and useful pursuits. In indulging these feelings, I am led to reflect how much more delightful in the undebauched mind is the task of making improvements on the earth, than all the vain glory which can be acquired from ravaging it by the most uninterrupted career of conquest.—*Washington.*

Newmarket Agricultural Club.

The constitution of this association we publish in this number as a model for those friends of improvement who may be disposed to assist in organizing similar institutions in their respective localities. It will be seen that the principal object of the club is to widely disseminate useful information on the important business of Husbandry, Mechanism in all its branches, and Horticulture: these several pursuits employ nineteen twentieths of the population of Canada, and those who do not belong to these classes are interested in their welfare. The productive wealth of the country has been brought into being by their industry and sagacity, and without these classes this province would have been an unproductive wilderness. With all the industry of the Canadian population, it is nevertheless a fact which cannot be controverted, that in point of general improvement and information, they are far behind their neighbours of the United States. There is no good reason why this state of things should any longer exist, and we trust that all true lovers of their country will benevolently unite their efforts in endeavoring to improve both its intellectual and physical character. Various methods have been recommended to develop the industrial resources of British America, but probably none would be so well calculated to expand the genius of the people and cultivate a friendly feeling among all classes of the population, as that of establishing and carrying out the objects of such clubs as the one which is established at Newmarket. The club simply proposes to circulate the most practical information that can be had upon the several branches embraced in its constitution, and also to hold meetings to discuss disputed points, and compare the results of the various experiments made by its members. The farmers of the vicinity of Newmarket, with their talent and respectability, have nothing to fear from the changes which may take place in the fiscal relations that exist between this and the mother country. They will doubtless profit by the example of the commercial world, which always evinces great readiness to adopt any improvement which would benefit their condition. Knowledge would no longer be only in the possession of the *drones* of society, if the same zeal was manifested by the farmers generally in acquiring useful information, as is done by many of the farmers of this neighbourhood. It is scarcely

necessary that we should further expatiate on the happy results that would flow to this country if one of those clubs were established and efficiently supported in each township, inasmuch as all who have an opportunity to carefully peruse the consultation which we have previously adverted to, will no doubt be satisfied that such institutions would be productive of great good when carried out in their proper spirit.

We shall occasionally give a condensed report of the proceedings of the Newmarket Farmers' Club, and hope that this source for imparting knowledge will influence the friends of improvements in other societies to adopt a similar course. Reports upon practical subjects emanating from such institutions, will always be thankfully received, and shall find a place in our columns if possible.

Wintering Stock.—M. P. EMERY, Esq. was of opinion that no subject was of greater importance to the farmer at the present time than the one for the evening's discussion. Only a few years since the winter was so severe and protracted that the authorities in some of the Districts granted large sums of money out of the public treasury, to purchase hay and other provender to keep the stock from starving; and there can be no doubt but that the drought of last summer has had the influence of lessening the hay and other crops to such an extent that, in many cases, and will be as much required this winter as the one alluded to. As the meeting was chiefly composed of practical farmers, and those too who are well qualified to offer valuable hints upon the matter under investigation, he would without further remarks resume his seat, and make way for those who are more practically acquainted with the details of the subject.

GEORGE PLAYTER was a particular friend to root crops, especially turnips. It would cost a skilful farmer no more to cultivate an acre of turnips than to properly summer fallow that quantity of land, and after the turnips are fed or removed off the ground, it can be made in a fit state for spring wheat with a single ploughing, with which crop the land may be seeded down with clover. He had made no experiments in preparing turnip seed, as a means of preventing the depredations of the fly, but he had found by frequent trials that where two pounds of seed were drilled per acre, the plants come up so thick that the flies would leave a sufficient number to en-

sure a full crop. The turnip crop had become such a favourite with him, that he would scarcely know how to winter his stock without a good supply of this valuable root. Every animal on his farm is stabled, and by keeping his stock in warm and comfortable apartments, he finds by experience that one half the food is saved, over the old method; and besides the saving in provender the animals look better in the spring, and the manure heap is not only improved in quality, but generally increased in quantity. He feeds his horses and colts with hay and oats cut in the sheaf. By pursuing this method the horses sufficiently masticate the whole oats, so that both time and expense are saved over the usual course of thrashing and grinding them into meal. Cows are fed on straw, and only one peck of turnips each per night. In feeding bullocks he gives each animal only one bushel per day, a greater quantity than this per day was both useless and detrimental to the animal's health.

LOU HARTMAN feeds his horses on cut oats without thrashing, and finds that they keep in equally as good condition, and upon much less hay and oats, than when he fed hay and clean oats. He feeds his sheep on pea straw and finds that they do much better than if fed upon the best of hay. He sows a very large crop of peas upon land which he intends for fall wheat, with a view of making pork with the peas, and wintering his sheep upon the straw. The experiment has proved so successful in every instance, that he has tried it, that he has now become so well satisfied with this mode of farming that he is determined to practice it on a more extensive scale. Most of his fall wheat was sown after the peas the past season, and he considers that upon his land he has a better chance for a good crop of wheat than if it had been summer fallowed in the best possible manner.

JOHN CLINE feeds his horses on hay, wheat chaff, and barley meal, and believes it to be an economical method of wintering working horses. He has a flock of sheep consisting of 100, which eat daily one cwt. of hay, and they get also what pea straw they can eat.

JOHN PHILIPS has a neighbor who cuts out straw, which he mixes with bran for his horses, and that food with good hay three times a day, is sufficient to keep the animals in good working condition. The same person sows an early variety of peas upon land intended for fall wheat, by

which means he has an abundance of winter food for sheep, and good crops of peas and wheat. A seven-acre field managed in this way two years since, yielded 45 bushels of peas per acre, and 286 dozen sheaves of wheat, which will average, when thrashed, about one bushel of wheat to the dozen. From his own experience in feeding horses, he was of opinion that they will do with one third less oats when cut in the sheaf, than if fed in a clean state.

P. PEARSON.—In point of economy no subject was of greater importance to the farmer than the one under discussion. Some farmers can winter their stock upon half the food that is required by others, and at the same time their animals are in better condition. He has not fed clean oats to his horses for the past 12 years, and finds a great saving in thrashing and grinding his oats, and cutting the straw; he mixes the chopped oats with the cut straw, and feeds his horses three times per day upon this feed, and gives them hay only at night. A saving of at least one half has thus been effected over the old method of feeding what hay they would eat, and clean oats; and his animals never looked better than they do at present. He approves of a straw cutter, to be driven by horse power; such a machine would save more than sufficient to pay its original cost in a single season, where an ordinary stock of cattle is to be wintered. Pea straw well secured is better than hay for wintering sheep. Last winter he gave his sheep what hay they would eat, and they did not do so well as they have done this winter on pea straw. His pea crop averaged upwards of 40 bushels per acre, and was harvested before they were quite ripe. The straw is highly relished by the horses and horned cattle, but it is so well adapted to the constitution of the sheep, that it is fed almost exclusively to those animals. He braces his wheat and barley straw for his horned cattle and colts. He has found by experience that nothing equalled rape for autumn food for sheep, and tares for soiling during the summer months. He cut his tares twice in a season. He has given up the idea of making naked summer fallows; turnips can be cultivated for the same cost, and they may be successfully grown in this country; has made an experiment with plaster, and found two applications with this substance upon young plants, proof against the fly. A farmer who has 50 acres of cleared land should have at least five acres cultivated with root crop yearly.

For want of space, the Secretary's speech, which was a long one, cannot conveniently find place in this number.

Boys' Department.

To the Young Farmer.

Judge Buel, in his address before the Berkshire Agricultural Society in 1837, said, that every age demands a greater degree of mental culture, than the one which preceded it; and it behoves you to qualify yourselves for that which now dawns upon your mental vision. The more you learn to depend upon yourselves, the more you will find developed capacities and energies, of which you are yet unconscious of possessing—the more likely you will be to prosper in life. The sapling which is sheltered by the towering pine, or wide-spreading oak, is neither so strong nor so graceful, as that which grows up without shelter, and acquires strength and solidity from the buffetings of the winds and storms. The plant that is nurtured in the shade is not so beautiful—its blossoms are not so fragrant nor its fruit so rich, as the fern, the flower, and the fruit of that which grows in the glare of solar light.

The culture of the mind should engage your serious attention, that you may sooner profit by its counsels and its powers. Mind is the great master power, which instructs, guides and abridges human labor—the grand source of intellectual pleasure—a faculty which distinguishes man from the brute, and which, as it is more or less cultivated, marks the gradations in civilized society. Say not that you have no leisure for this, that your time is engrossed in providing for your animal wants. Franklin found time to bestow upon his mind high and useful culture, amid the cares and labors of a mechanic's life. The hours that the avocations of the farm allow to study amount in the aggregate of early life, to months and to years. Knowledge is power; it is wealth; it is respectability; it is happiness, it endures with life. The mind may be likened to the soil. Both are given to be improved; and the measures of our enjoyments, and the welfare of society, depend upon the good or bad culture we bestow upon them. Indolence may be compared to the coarse marsh plants, which feed upon the soil and taint the air, without yielding anything comely or useful in return, for man or beast;—intemperance, to broken down fences, which permit beasts to enter and consume the earnings of industry, and beggar the offspring of the owner—litigation, to the thorns and thistles, which rob the soil of its fertility, and mar the beauty of the

landscape. While, on the other hand, the faithful application of knowledge to the useful purposes of life, may be likened to the draining and manuring, which give fertility to the soil; the good habits which we establish, to the good culture bestowed by the husbandman—indicative alike of cheerfulness and plenty—and the embellishments of the mind in literature, science, and taste, to the gardens and grounds, abounding in all that is grateful to the senses, which should surround and adorn our rural dwellings, and beautify the country.

You have chosen an employment, which is honorable, profitable, and independent. Devote to it your best powers, till you have become master of the art, or of such branches of it as you design to follow—and until you have acquired so much of the science—knowledge of the why and wherefore—of the great laws of nature, upon which good husbandry is based, as shall enable you to conduct your operations with judgment and success. "Who aims at excellence will be above mediocrity; who aims at mediocrity, will fall short of it." So the adage teaches, and so it is the response of experience.—*Bost. Cult.*

A Father's Care for his Son.—Beautiful and becoming in the eyes of the paternal God, is the unvaried attachment of the parent to the child! Alas! how little does the unthinking spirit of youth know of the extent of its devotedness. There sits the froward, fretful, indolent boy. The care that keeps perpetual watch over his moral and physical safety, he misnames unjust restriction. The foresight that denies itself many a comfort to provide for his future wants, he denounces as sordid avarice.—He turns from his father's face in coldness or in anger. Boy! boy! the cloud upon that toil-worn brow has been placed there by anxiety,—not for self, but for an impatient, peevish son, whose pillow he would gladly strew with roses, though thorns should thicken around his own.—Even at the moment when his arm is raised to inflict chastisement on thy folly, thou shouldst bend and bless thy parent. The heart loathes the hand that corrects thy errors: and not for worlds would he use "the rod of reproof" did he not perceive the necessity of crushing his own feelings, to save thee from thyself.—*Amulet*, 1829.

Honoring Parents.—As a stranger went into the church-yard of a pretty village, he beheld

three children at a newly made grave. A boy about ten years of age was busily engaged in placing plants of turf about it, while a girl, who appeared a year or two younger, held in her apron a few roots of wild flowers. The third child, still younger, was sitting on the grass, watching with thoughtful look the movements of the other two. They wore pieces of crape on their straw hats, and a few signs of mourning such as are sometimes worn by the poor who struggle between their poverty and their afflictions.

The girl soon began planting some of her wild flowers around the head of the grave, when the stranger addressed them:

"Whose grave is this, children, about which you are so busily engaged?"

"Mother's grave, sir," said the boy.

"And did your father send you to place these flowers around your mother's grave?"

"No sir, father lies here too, and little Willy and sister Jane."

"When did they die?"

"Mother was buried a fortnight yesterday, sir, but father died last winter, they all lie here."

"Then who told you to do this?"

"Nobody, sir," replied the girl.

"Then why do you do it?"

They appeared at a loss for an answer, but the stranger looked so kindly at them that at length the eldest replied, as the tears started to his eyes:

"Oh, we do love them, sir!"

"Then you put these grass turfs and wild flowers where your parents are laid, because you love them?"

They all eagerly replied.

"Is there more beautiful than such exhibition of children honoring the memory of deceased parents? Never forget the dear parents who loved and cherished you in your infant days! Ever remember their parental kindness! Honor their memory by doing those things which you know would please them were they now alive, by a particular regard to their dying commands, and carrying on their plans of usefulness! Are your parents spared to you? Ever treat them as you will wish you had done, when you stand a lonely orphan at their graves? How will a remembrance of kind affectionate conduct, towards those departed friends, then help to soothe your grief and heal your wounded heart!—*Del Gaz.*

Cancer.—A cure of Cancer is recorded, by the use of the ashes of white ash bark, mixed with pure water. The disease was in an early stage, and the cure was completed in a fortnight.

Necessity of Studying Chemistry.—I wish to explain to the boys the necessity of their studying this important science. Every plant that grows upon a farm has to be fed, as well as animals; and they require, or at least do better, upon particular kinds of food. When they have it, under favorable circumstances, they attain their most perfect growth. Now, how are we to find out what plants live upon, and what is their particular food? Some would at once answer, I would apply stable manure—that gives me good crops. Others would say, I would use guano, marl, lime, plaster, or I would plow under green crops, &c.; but all these modes have been tried unsuccessfully in some cases. Now, a chemist would at once ascertain the cause of the failure, and advise the best application of nourishment. He would analyze the soil, and would also analyze the plants that the farmer wished to grow. He would ascertain perhaps that there was everything requisite in the soil but lime, and that by the application of it, the land would at once be fitted to produce the crop required, or it might want potash, then ashes would be the remedy; or it might want azotised substances, and then he would recommend stable manure, &c.

Many would ask, how can a chemist do this? I answer, by analysis. Well, what is analysis? Analysis means the separation of substances so as to ascertain their composition. A chemist does this, by employing certain chemical manipulations and tests. He separates every substance that soils and plants contain. He detects and weighs them, so that every particle is accounted for, and their respective value ascertained. When this is known, the farmer is able to apply the substance required, and in that way he not only makes the proper application, but also oftentimes saves himself a great expense in purchasing manure which his farm does not require. Thus he makes money, while his neighbour loses.—*Abh. Cult.*

Cure for Rheumatism.—Dissolve half an ounce of saltpetre in a pint of brandy, and take a table-spoonful every day. It is said, by those who have tried the experiment to be a most excellent antidote for that double twisting, painful complaint.

To extinguish fire in chimneys. Put a wet blanket over the whole front of the fire place, which soon stops the current of air, and extinguishes the flame.

Backwoodsman's Department.

The business of chopping, clearing, and bringing forest land into cultivation, may be performed in a variety of ways, to suit the taste of the owner or the circumstances of the case, these methods will in their turn receive attention at our hands. In the course of our remarks we purpose to point out the errors that many fall into in their practices of cropping land recently cleared from the forest; and also to lay down a series of plans by which every Canadian pioneer or Backwoodsman may glean some hints worthy of practice.

In the present number we shall suppose an individual has purchased 200 acres of hard-timbered land in "the Queen's Bush" or some other locality equally propitious for agricultural pursuits, which cost 10s. per acre, or £100 for the lot. The owner of this lot should be in possession of at least £100 in cash in order to make a successful and easy beginning on his bush farm. Not less than 15 acres should be chopped, cleared, fenced, and sowed with fall wheat before a house or any other preparations for a home for his family be made. This quantity of ground may be properly cleared and cropped for £4 per acre, and as the average crop upon new land may be safely put down at 25 bushels per acre, it will be seen that the first crop will pay the entire expense of bringing the land into cultivation, and harvesting and marketing the produce. The ground should be seeded down with clover and timothy, with the first crop, and in that state be allowed to remain until the process of chopping and clearing be completed, which would require eight years at the rate of clearing 20 acres per annum. In addition to the 15 acres that should be chopped, cleared, and sowed annually with fall wheat, if the land be adapted to that crop, there should be at least other five acres cleared for spring wheat and root crops. No land is so well adapted for grassing as new land; the herbage being sweeter and more abundant than upon old land, it therefore appears an unwise practice to disturb land covered with stumps and roots, with a plough, until they have become sufficiently decayed to be easily removed. Besides, whilst the business of chopping, clearing, and fencing the farm is in progress, no other employment should be allowed to interfere with their seasonable operations, and where the whole farm is annually cropped with grains,

nothing is done in season, and the obvious result of such a course, is poverty and bankruptcy.

The business of stock-growing, especially that of horned cattle, may be engaged in with a certainty of success, after the lapse of the first year. Not less than 50 head of full-grown horned cattle could be wintered upon the hay and wheat straw that would be annually produced upon a farm cropped in this manner we have described; and if well wintered a summer's run in the woods would in a majority of cases put them in a condition that they would not require much artificial food to fit them for the shambles.

The turnip crop upon new land is one which pays better than any other, especially where a judicious course of feeding them to horned cattle for the shambles is adopted. An acre will yield, in an average of cases, about 600 bushels, and even 1000 bushels have been frequently gathered from an acre of new land turnips. The alkalies in the soil thoroughly prevents the depredations of the fly upon the plants, and they require no hoeing as the ground in its natural state is free from weeds. An enterprising bush farmer would find it profitable to sow a large breadth of land with the Swedish turnip. By applying a heavy harrow to the ground, after the removal of the turnip crop, it would be in a good state of cultivation for spring wheat, with which crop the land should be seeded down with clover and timothy.

When the bringing of land into cultivation upon a regular scale is engaged in, the wheat crop will do but little more than pay the expense of clearing the land and marketing the crop, therefore the interest upon invested capital, and the profit upon the business, will have to be realised from the other products of the farm. These products will consist in a great measure in beef, pork, and dairy produce. In some localities hay will find a remunerating market; and in such cases it would probably be wise to so arrange matters that from 20 to 30 tons could be disposed of annually. To secure a certain large yield of hay many particulars are necessary to be observed, but for want of space we shall at this time only mention one. Where the ashes are not converted into potash, they should be gathered and housed, and about the first week in May they should be applied upon the meadows at the rate of 10 bushels per acre; or if they are leached, 60 bushels per acre should be applied.

Upon a 200 acre farm, 50 acres should be re-

served for wood, and the other 150 brought under cultivation as soon as circumstances would admit. This might be done in eight years, at the expiration of which time the field which was first cleared should be broken up early in the spring for summer fallow, to be sown with fall wheat. Each field should receive a summer fallowing in its proper order, so that in the course of 16 years the whole farm will have been subjected to a uniform system of cropping and cultivation. By a judicious rotation of crops and a careful system of husbandry, no summer-fallowing will be necessary but the one we have mentioned, for a century to come.

Want of time and space forbids an enlargement upon these topics at this time.

The Gapes, or Pip.

Mr Bement, in his *Poultry Companion*, has gathered together all the supposed causes of this fatal disease in chickens, which we shall condense in a few lines for the benefit of our young readers. 1. It is attributed to catarrh, similar to the influenza in human beings; producing a thickened state of the membrane lining the nostrils, mouth, and tongue. 2. Small red worms in the windpipe. 3. Breeding from old cocks (which is doubtless an old woman's notion). 4. Scanting the chickens in their food. 5. Giving them too much Indian meal pudding. 6. Want of pure water.

The symptoms of the gapes are so various, that we have no doubt they should be classed as different diseases, the same as physicians do those of the human family. It would be quite absurd to say a child was affected with scarlet fever, when he only had a cold, or that it was suffering with worms, when gasping for breath with the croup; and yet these diseases do not seem at all more distinct to our comprehension, than those mentioned above under the head of "Gapes or Pip." It would be well worth while for some skilful surgeon to investigate these diseases, and write a work upon the subject.

The remedy for the catarrh, is to tear off the scale on the tongue with the nails of the forefinger and thumb, and then push down the throat a large lump of fresh butter which has previously been well mixed with Scotch snuff. But we think two or three spoonful of gravy, made with equal parts of butter, honey and vinegar, would be better. To remove the worms, hold the chicken

with his mouth wide open over tobacco smoke from one to two minutes; or what is better and more humane, tie the wings and legs of the chicken to prevent its struggling, take a small hen's feather, and strip it clean excepting a tuft of about an inch at the end, wet this slightly in spirits of turpentine, draw the neck of the chicken out straight, open its mouth wide, seize the tongue gently with a piece of muslin between the fingers to prevent its slipping, and then push the feathers lightly down its windpipe two or three inches and twist it round, and this will bring up more or less worms, and the chicken will usually sneeze out the remainder; if it does not, repeat the operation not more than two or three times the same day, till the windpipe is clear of them.

The gapes are said to be prevented by mixing a small quantity of spirits of turpentine with the food of chickens, wetting up the meal of their food with soap suds, or molasses, or a little asafoetida pounded fine, or vinegar, in which *non* has been standing, or snuff, or rhubarb and cayenne pepper, or feeding them with coarse homony, and a pepper-corn now and then, or a piece of garlic.

Some think that the worm is the offspring of the lice on hens, which we think is impossible; others, that it is more generally picked up by the chicken out of dung heaps, either in the egg, or just after being hatched; others, that they are spawned in the windpipe by the parent worm and hatch out there; others, that the eggs are deposited on the nostrils of the chicken by a winged insect, and then hatch, and find their way into the windpipe.

Chickens are most affected with gapes in wet weather, when worms are most likely to breed; also when catarrhal complaints are most frequent. Keeping them up in a dry warm place during wet weather is a good protection. In addition to this the hen house should be kept clean, warm, and dry, and be thoroughly whitewashed inside and out every spring and fall, with a wash made of lime pretty well sprinkled with salt.

We feel quite culpable in condensing so much from Mr Bennett's excellent little work; yet this should tempt our young readers now to purchase it, for they will find not only this subject but most others regarding poultry fully treated, together with handsome woodcut illustrations of the text. With this work in his library, and strict attention to its precepts, every boy would be able to raise fowls successfully and profitably.

—An. Ag.

A Glossary of Technical Terms used in Agriculture.

Absorption, the conversion of a gaseous fluid into a liquid or solid.

Acetate, salt formed by the combination of any base with the acetate acid.

Acetate of Lead, sugar of lead.

Acetic Acid, concentrated vinegar.

Acids, compounds of basis with oxygen, hydrogen, &c.

Aether, a volatile liquid, formed of alcohol and an acid.

Affinity, a force by which substances of different kinds unite.

Alkali, (*fossil*, or *mineral*.) soda.

Alkali, (*veg. table*.) potash.

Alkali, (*volatile*.) ammonia.

Alcohol, rectified spirits of wine,

Alluvial, depositions of the soil made by water.

Alum, a compound of sulphuric acid, alumine, and potash, or ammonia.

Alumina, earth of alum; pure argillaceous clay.

Anthracite, mineral coal containing no bitumen.

Areometer, a graduated glass instrument with a bulb, by which the specific gravity of liquids is taken; an hydrometer.

Arcillaceous, of the nature of clay.

Aroma, the odor which arises from certain vegetables, or their infusions.

Azote, nitrogen; the basis of atmospheric air, of ammonia, nitrous acid, &c.

Barometer, an instrument which shows the variation of atmospheric pressure.

Bell metal, an alloy of tin and copper.

Brass, an alloy of copper and zinc.

Calcareous, partaking of the nature of lime.

Caloric, the chemical term for the matter of heat.

Caloric, (*free*.) radiant heat, or that which is not in chemie union with other bodies.

Caloric, (*latent*.) the matter of heat in a state of combination; not perceptible.

Carbon, the base of diamond and of charcoal.

Carbonate of lime, the compound of carbonic acid and lime, under the name of marble, limestone, calcareous spar, chalk, &c.

Carbonate of potash, common potash, pearlash, salt of tartar.

Carbonic acid, carbon combined with oxygen.

Chalybeate, the term applied to mineral waters impregnated with iron.

Citric acid, the acid of lemons.

Cohesion, a force inherent in all the particles of bodies, by which they are prevented from falling to pieces.

Concentration, the act of increasing the specific gravity of bodies.

Decomposition, separation of the constituent principles of compound bodies.

Effervescence, an intense motion which takes place in certain bodies caused by the escape of a gaseous substance.

Efflorescence, the pulverulent form of saline bodies produced by exposure to the air, in consequence of losing their water of crystallization.

Elements, are, properly, the simple constituent

parts of bodies incapable of decomposition, or further division.

Essences, the essential oils obtained by distillation from odiferous vegetable substances.

Evaporation, dissipation of fluids by heat; evaporating fluids, into vapor by heat.

Fermentation, a peculiar spontaneous motion, which occurs in vegetable substances, if exposed to proper temperature, under certain circumstances. It is usually divided into the acetous, vinous, saccharine, and putrefactive stages.

Fluidity, a term applied to all liquid substances. Solids are converted into fluids by combining with a certain portion of caloric.

Galic acid, the acid found in gall-nuts.

Gas. All solid substances, when converted into permanently elastic fluids by caloric, are called gases.

Gelatin, a chemical term for animal jelly.

Gluten, a vegetable substance allied to gelatin.

Gravity, that property by which bodies fall to the earth.

Gravity, (*specific*), is the weight of any solid or fluid body, compared with the same measure of distilled water.

Hydrates. Those substances which have formed so intimate a union with water as to solidify the water, and render it one of its component parts, are called hydrates.

Hydrate of Lime, lime slaked in water.

Hydrogen, the base of water; inflammable air.

Hydrometer, see *Areometer*.

Incineration, the converging of vegetables to ashes by burning.

Laboratory, a room fitted up with apparatus for the performance of chemical operations.

Lime, quicklime; calcareous earth: oxide of calcium.

Lute, a composition for closing the junctures of chemical vessels, &c.

Maceration, softening a solid body by immersion, without impregnating the fluid with it.

Malic acid, acid of apples.

Malleability, that property of metals which gives them the quality of being extended into thin plates by hammering.

Mensastrum, the fluid in which a solid body is dissolved.

Mineral, any natural substance of a metallic, earthy, or saline nature.

Mordants, substances which have a chemical affinity for particular colors, as alum.

Mucilage, a vegetable principle allied to gum.

Muriates, salts formed by the combination of any base with muriatic acid.

Muriatic acid, spirit of sea salt.

Muriate of soda, common salt.

Nitrate of potash, saltpetre, nitre.

Nitrates, salts formed by the combination of any base with nitric acid.

Neutral salt, a substance formed by the union of an acid with an alkali, an earth, or a metallic oxide, in such proportions as to saturate both, the base and the acid.

Oxalic acid, the acid found in sorrel.

Oxide, any substance combined with oxygen, in a proportion not sufficient to produce acidity; rust of metals.

Oxidize, to combine oxygen with a body without producing acidity.

Oxygen, a simple substance, being one of the component parts of water and atmospheric air; vital air.

Oxygen gas, oxygen converted into gas by combining with caloric.

Pellicle, a thin skin which forms on the surface of saline and other liquids, when boiled down to a certain strength.

Pyrognic acid, an acid obtained from wood by burning.

Sal, a salt.

Saturation, the act of impregnating a fluid with another substance, till no more of it can be received or imbibed.

Silicious earths, natural substances which are composed chiefly of silica; as quartz, flint, sand, &c.

Simple substances, synonymous with elements; not divisible.

Smelting, the operation of fusing ores, to separate the metal from the sulphur, arsenic, and other matters with which it is combined.

Solution, the perfect union of a solid substance with a fluid.

Sulphates, Sulphats, Sulphites, salts formed by the combination of any base with sulphuric acid.

Sulphate of copper, blue vitriol; blue stone.

Sulphate of iron, copperas; green vitriol.

Sulphate of lime, gypsum.

Sulphate of soda, Glauber's salt.

Sulphate of zinc, white vitriol.

Sulphate of potash, a chemical salt, composed of sulphuric acid and potash. **Sulphuret of potash**, sulphur and potash fused together.

Sulphate of magnesia, Epsom salts.

Sulphuric acid, oil of vitriol, vitriolic acid.

Sulphate of potash, cream of tartar.

Sulphate of copper, verd gris.

Combinations of alkaliine earths or metals with sulphur.

Tartrac acid, the acid found in the grape.

Tartrates, Tartrites, salts formed by the combination of any base with the acid of tartar.

Thermometer, an instrument to show the relative heat of bodies and of the atmosphere.

Trituration, the pulverizing, or uniting of bodies by friction.

Torrefaction, roasting of ores.

Vacuum, a space unoccupied by matter.—From Judge Buel's Farmer's Companion.

Varnish for Gilded Articles.—Gum lac, gamboge, dragon's blood, annatto, each four parts; saffron 1 part. Dissolve each resin separately in eight parts of alcohol, and make separate tincture with the dragon's blood and annatto, also in eight parts of alcohol each, then mix the former together and add a sufficient quantity of the tinctures to give the required shade and color to the varnish.

Remedy for Wounds and Canker in Trees.—A subscriber inquires for a good mode of "doctoring" wounded trees, or for decayed places occasioned by canker. We have found in the case of wounds, after trimming off the bruised and mangled parts, that a plaster made of clay and fresh cow-dung, put on and bound on by a strip of cloth, to be a good application.

In an old number of the Massachusetts Agricultural Journal, we find the following:—The damaged parts of the tree must be cut or peeled off in the spring, and the places must be rubbed in a fine sunny day with turpentine, which becomes a sort of varnish, so that wounds will be hermetically sealed, and the tree will speedily recover.

By this simple and cheap remedy many trees have been already saved, which in spring time showed symptoms of decay. Even all the upper part of the bark has been cut away, and in the space of a year an entire cure has been effected.

In addition to this, we may add that the common gaffing cement makes a very good plaster for wounded trees—made by melting together $\frac{3}{4}$ lb. of beeswax, $\frac{1}{2}$ lb. of tallow, and 4 lbs. of rosin.—Maine Farmer.

Ringbone in Horses.—Mr. Editor:—Having read a late article in your paper, on the cure of ringbone in horses, I drop you a few lines relative to my experience in this matter in the State of New York, and also in this country. I was brought up to the taking care of those animals, and have practiced it for almost three score and ten years. Having always found that the most simple remedy is the best, I would recommend the following as a safe and sure cure, in the first stages of ringbone.

Let the part affected be dry and clean; take good common house soap, rub well into the hair on the part affected, then dry it in well with a hot iron—but not too hot. Continue this for three mornings, when a cure will probably be effected—but if not repeat the treatment. I tried the experiment lately with good effect, and think that three applications will be found sufficient. If any of your numerous readers have need, they can try it with perfect safety.

M. BENNETT.

Mendon, Mich., Nov. 17, 1845.

—Michigan Farmer.

Composition for Grafting.—Take $\frac{3}{4}$ lb. of beeswax, $\frac{1}{2}$ lb. of tallow, and 4 lbs. rosin, melt the whole well together, and when it gets cold, work it up with the hand till it becomes of a proper consistency. When used it will be necessary to warm it a little.

To Cure Butter.—1. Lump-sugar, 5 parts; saltpetre, 8 parts; common salt, 32 parts. Powder fine and sift, then use one ounce of this mixture to every pound of butter; pack in wood or vitrified jars, not glazed pans. This will keep butter for two or three years.

Ladies' Department.

Distinguishing Features in the Character of a Good Wife.

1. A good wife must possess a large share of what is called "common sense." She must know by a kind of instinct how to act on every emergency—such as it were by inspiration the leading features in the characters and dispositions of the individuals, old or young, friends or strangers, to whom she is introduced, with whom she is to act steadily or occasionally. Without this, every other talent she may possess, and every attainment she may have acquired, will be of little use either to herself or her family.

2. A good wife must be distinguished for self-command. A wife is at the head of a little society, in which are all the elements of every kind of society. But all these elements are here, in an unformed, and forming, and most fluctuating state, hence, the first and most important lesson to be studied, and to be acquired by the individual who presides over a society in this state is that she have, on all occasions, the most perfect command of herself.

3. Industry and economy form a third distinguishing feature in the character of a good wife. This is the leading feature in the character of a good wife. This is a leading feature in the detail which is given us by the Spirit of inspiration—Prov., xxi., 10.

It will be well for our country, and for our world, when this passage of holy writ shall be fully understood by every mother and daughter of our land. Happy would it have been this day for the British nation, and for these United States, had this passage been made a text-book for female education, instead of the large importations which have been made of teachers, and of education, and of maxims and habits from Italy and France. The industry and economy of a wife is particularly exhibited in having, at the intervals of time, within the whole range of her government, filled up with some necessary and profitable employment, and in taking especial care of fragments of time and fragments of property.

4. A good wife is an affectionate woman. The law of love and sincerity is written upon her heart; and in her tongue is the law of kindness. Every domestic, and every friend, and every stranger, and the friend of every distant friend and acquaintance, finds him or herself immediately at home while under her roof, and while

partaking of her hospitality. Nor in all her intercourse with strangers, or with acquaintances, does she cherish a thought, or willingly utter a syllable, with the design of injuring the feelings or the character of a single human being. She will not take up, much less will she give circulation to, a reproach against her neighbor, though this reproach be brought to her table or whispered in her bed-chamber.

5. A good wife is of domestic habits, and of a domestic disposition. She enjoys herself nowhere so well as under her own roof, and while attending to her own private affairs.—*Dr. Bisher.*

The Model Farm of Ohio.

The model farm of this State contains 100 acres, 75 of which are well cleared, and the whole under fence. 60 acres are embraced in one enclosure, and this includes all the arable and meadow land upon the farm. The buildings are all of stone, neat, durable and commodious. The dwelling is large, but capacious enough for use of the farmer and a room and a bed or two for an occasional friend. The kitchen and stables are supplied with water from the same spring. No stock but hogs and sheep are permitted to graze. The cattle and horses are constantly kept in their stalls, and are always in good order. The cows are at all times fat enough for the butchers and the growing stock at two years old attain the weight of ordinary steers at four. During the summer they are soiled, with green food, consequently, 20 acres in grass is sufficient to keep four horses and ten cows with their offspring until the young stock are ready for the market at three or four years old, when they average him \$30 per head. Of these he makes it a point to sell ten head a year. For his stock he raises about one acre of roots, sugar beets, mangel wurtzel and turnips each year, which yields him on the average about 1500 bushels. Of corn he cultivates 20 acres a year, which by proper culture and clover rotation, yields him 500 bushels. Five acres in wheat gives yearly 150 bushels. Five acres of oats, 50 bushels.

He has an orchard of eight acres, in which he has 200 apple trees, 25 pear, 25 plum, 100 peach and 50 cherry trees. This is divided into four compartments of two acres each. Two of these he plows up every year, and in the spring plants them in Jerusalem Artichokes. Here he keeps his hogs. In the two that are not plowed, he has a clover and orchard grass ley, in which the swine feed from the middle of May to the first of August, when they are let into one of the artichoke yards and range at will into the two grass yards, and thus till winter, when they are passed into the second artichoke yard, where they are kept till the grass has sufficiently advanced in one of the fields to turn them into that. Thus upon grass, roots and fruit the swine are kept so thrifty, that a few bushels of grain are sufficient to make them ready for the butcher. In this way he manages to kill thirty hogs a year, which will

average 400 lbs. each. He gives them beet wintering

His sheep range principally in the woods, with a small pasture of five acres. He keeps 75 head, which yield him 300 pounds of wool a year.

As this farmer has raised a large family, and raised them all well, having given each child a good practical education, I was curious to look into his affairs, and as he keeps a regular account current of his transactions, it gave him no trouble to inform me of the result of this mode of proceeding, which is briefly as follows:

Product of the farm—	
10 Beef Cattle, average \$30 per head,	\$300
25 Hogs at \$12 per head,	300
200 bush. Corn at 25 cts per bu.,	50
Product of sheep,	100
Product of Dairy,	200
Product of Orchard,	300
Other and smaller crops,	100

\$1,350

His hired labor cost him on an average per annum,

300

\$1,050

Thus, from 100 acres of land, even in Ohio, this man has been able to lay by, and invest at interest, on an average, \$500 a year for the last 12 years. He has now some eight or ten thousand dollars at interest, and his home is a home indeed. Who does better on a farm of 1000 acres? Or who has improved his condition by going west, more than he has by staying here? Of course, like others he has suffered somewhat from unfavorable seasons, in some of his crops, but his correct system of culture and intelligent management generally obviates every difficulty which spring from this source, and as his crops are always better than his neighbors' the advance in price more than makes up the deficiency. His system of manure making, manures, turns everything to the improvement of his soil, weeds, ashes, &c. his stock, soap suds, bones and every thing else that he can catch it, are carefully saved, and applied.

The history of this man is brief, but to the farmer, interesting. He began with the patrimony of good sense, sound health and industrious habits. Excellent so far. In 1830 he had six children and \$3,600 in cash. He bought this farm in a state of nature in 1830, for which he paid \$100. He expended \$400 more in clearing his land, in addition to his own labor. He first put up a temporary cabin in which he moved his family.—\$1000 he put out at a permanent annual interest, and the remaining \$1,200 the earlier profits of his farm, he appropriated to the erection of his buildings, which were complete in 1834. In the selection of his fruit, he sought for the best varieties, which always gave him preference in the market. So of his stock. In this he avoided the mania of high prices, and has made up in judicious crossing and breeding, what others seek at great cost in foreign countries. Everything he

does, is done well. Everything he sends to the market commands the highest price, because it is of the best kind. In his parlor is a well selected library of some 300 volumes, and these books are read. He takes one political, one religious, and two agricultural papers, and the N. A. Review; refuses all offices, is, with his family, a regular attendant at church, and is a pious, upright and conscientious man. He is the peace-maker in his neighborhood, and the chosen arbitrator in all their disputes; he loans his money at 6 per cent., and will take no more.

He says he wants no more land for his own use than he can cultivate well—no more stock than he can keep well—more land will increase his taxes, his labor and expenses will be less profitable.

Who will be happy and follow his example?—*Ohio Cult.*

ERRATA.—The following typographical errors appeared in the January number of the *Cultivator*, which would not have been the case if the Editor could have had the opportunity of correcting the proof sheet:—

- Page 6, 27th line from the top of the right column, read—*combine*.
- 6, 12th line from the bottom of the right column, read—*model*.
- 18, 12th line from the bottom of the left column, read—*appellation*.
- 19, 21st line from the top of the left column, read—*frequently seen*.
- 19, 4th line from the top of the right column, read—*wholesale*.
- 19, 23rd line from the bottom of the right column, place a *comma* instead of *as*.

ST. CATHARINES NURSERY.

THE Subscriber still continues the cultivation of the most choice kinds of FRUIT TREES, and has now a good assortment of *Apple, Peach, Plum, Nectarine, Apricot, Quince, and Cherry*. He is growing an extensive ORCHARD, consisting of all the varieties, which he offers for sale; and many of the trees have already borne Fruit, enabling him to cut his Grafts from such as are true to their names.

In this manner he hopes to attain that degree of accuracy in cultivation which will enable him to avoid these mistakes so unpleasant to purchasers.

Apple, Peach, and Quince Trees, are 1s. 3d. currency, each, or £5 per one hundred.

Apricot and Nectarine are 1s. 10d each. Cherry and Plum 2s. 6d. A liberal discount will be made to any person or company that may buy one thousand.

Catalogues will be furnished gratis to all who may apply. All orders by mail for Trees or Catalogues will receive the earliest attention if *post paid*.

Orders for trees must *invariably* be accompanied by Cash or a satisfactory reference.

C. BEADLE.

St. Catharines, January 1st, 1846.

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The collection of Ornamental Trees, Shrubs, Roses, Herbaceous Plants, &c. is quite extensive, and is offered at moderate prices. Public Grounds and other places requiring large quantities of Trees and Shrubs, will be laid out and planted by contract at low prices.

To persons at a distance we would recommend to procure their Fruit Trees in the Fall, more particularly where the soil is dry and warm: October and November, immediately after the cold weather has arrested vegetation, is esteemed the best season of all for transplanting Trees. When Trees are transplanted in Autumn, the earth becomes consolidated at their roots, and they are ready to vegetate with the first advancement of spring.

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Sept. 1845.

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(FOR 1846, NEW SERIES)

Is published on the First Day of every Month, at Toronto, by EASTWOOD & Co., to whom all orders must be addressed.

W. G. EDMUNDSON, } Proprietors.
EASTWOOD & Co. }

W. G. EDMUNDSON, Editor.

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Toronto, Jan. 1846.

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