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AGRICULTURAL JOURNAL,

AND

TRANSACTIONS

OF THE

Lower Canada Agricultural Society.

VOL. 1.

MONTREAL, MAY, 1843.

NO. 5.

CULTIVATION OF BARLEY, OATS, AND PEAS.

Barley requires a light, rich, loamy soil, which retains moisture, without, however, suffering from damp—a soil which contains from fifty to sixty-five parts in a hundred of sand, and the rest chiefly clay. If having the former of these proportions, it is situated in a dry position, and having the latter in a moist one, it will be rendered still more adapted for the production of barley. This grain will thrive very well on strong clay lands where there is a sufficient quantity of manure to prevent the soil from being too tenacious; in short, it will thrive on any soil that may be classed as good wheat land.

Land in which barley is to be sown should be thoroughly loosened and pulverised. When sown after another grain, the land should, if possible, receive two or three ploughings for its reception; but when the soil has been thoroughly loosened, during the previous year, by well cultivated root or hoed crops, one ploughing will be sufficient. In cases where the land is not considered sufficiently fertile for barley, without applying manure to the crop, the tender nature of the grain renders it necessary that the nutrition intended for it should be easy of digestion, and properly prepared for and adapted to its organs.

Barley is not liable to any particular disease, except smut, and that seldom injures it much. The ears attacked by it are chiefly the early ones, and when the healthy ears attain maturity, scarcely any trace of the others remain. Pickling and liming are said to have no effect

whatever in preventing smut in barley. All kinds of barley sown in spring require a tolerably thick covering of earth; the seed may be covered by the plough three or four inches deep, and in fact, when sown in a very light soil, it should be placed at this depth below the surface. The land, however, should always first be allowed to be thoroughly dry. In general, nothing is more conducive to the success of this grain, than a period of dry weather, succeeding to the sowing; and on the contrary, nothing is more injurious than heavy rains, immediately succeeding the sowing, and we had proof of this in Canada last year.

Perfectly ripe seeds which have not become heated in the sheaf or granary, will always produce the most healthy plants. The seed should be free from all other seeds, of weeds, &c., and would be better for being washed. The root of a plant of barley, grown in soil properly prepared, and where the seed is covered sufficiently deep in the soil, is much stronger and larger every way, than the roots of the same plant grown in stiff and badly prepared soil, where the seed has been sown upon the surface.

Barley succeeds well in Canada, where justice is done in its cultivation. The wheat-fly damages it in a greater or less degree, according to the situation of the field and other circumstances, but the extent of injury is not material.

Oats are generally grown in Canada only in places where it is not deemed advisable to sow any other grain, and this, together with late

sowing, accounts for their inferior quality. The soil for oats may be of any kind whatever, provided it be sufficiently, but not too dry; this grain is said to have such vigorous organs that they can dissolve and appropriate nutritious particles which would be of no use to any other kind of grain. It will grow on the most tenacious, cold, or clayey soils, as well as on marshy, gravelly, and sandy soils. It suffers from unfavourable and inclement weather, but recovers itself much sooner than barley, when the weather begins to improve. But although oats may grow upon any soil—when they are cultivated upon good and fertile soils, they are much more profitable. On strong wheat land, they are considered to pay better than barley would on the same soil. On broken-up turf or grass land, where the herbage is not decomposed, oats will always succeed well, particularly if sown in good time, and they would be still better if the plough was passed along the furrows, and the loose soil shovelled each side upon the ridges, after the seed was harrowed in. When clover lea is ploughed up in the fall, it will answer well for oats, and it is recommended by some agriculturists, to harrow the land again when the plants are just above the ground—a kind of cultivation which this grain is said to bear better than any other. When oats is sown after other grain, the soil should, if possible, receive two or three ploughings, and the last number is best. Where oats are sown after other grain, on land that has been previously infested with weeds, three ploughings are necessary to check the growth of weeds in the oat crop. Fresh manure agrees well with oats, and the greater part of it will be left in the soil for the next crop. To ensure the success of a crop of oats, it is necessary that the seed should be plump, fresh, and uninjured by fermentation or frost, previous to harvesting. Oats which have acquired an unpleasant taste or smell, while in the stack or store-house, may come up from the ground, like others, but they produce a weakly plant,

which often perishes at the flowering season, and does not come to perfection.

The great difficulty with oats is the number of weeds that grow with them here, in consequence of defective cultivation; wild mustard particularly, which must weaken the crop materially. We have heard of harrowing being tried, with good effect, after the oats have appeared above the ground. The wild mustard grows very rapidly after the oats is sown, and it was found that by a light harrowing, when the mustard appeared, it greatly checked their growth, without injuring the oats. This operation must, however, be left to the farmer's own judgment. The light harrowing, if it did not disturb the oat plants, could not fail to be beneficial, as the young mustard have a very little root in the soil when they first appear. Our samples of oats are, at present, very much deteriorated, mixed, and require a total change for seed. The black glossy oat is an excellent variety for every purpose, but we have not seen a pure unmixed sample of it for a long time.

The Pea.—There are many varieties of this grain. There are some kinds in which the pods form and ripen early, and the hulk is not so strong as in others. These are looked upon as a more certain crop; the husk of the pea is thought to be finer, and the pea itself more tender; but the larger variety often yields the greatest amount of produce, both as regards peas and hulk. That, however, to which, in the majority of cases, preference should be given is the early variety, it not being so liable to be attacked by mildew before the pods are fully formed, and from being ready to gather early. A clayey, sandy, calcareous soil, which is not too much exposed to cold, wet, or drought, is the best for peas. It is universally admitted that peas succeed best on a loose, well pulverized soil. It is said that if manure is applied, whether it is decomposed, or fresh and strawy, when spread over the soil after the sowing, is not only more advantageous to peas sown as

sandy clays, than it would have been if buried by ploughing, but that it is also more beneficial to the grain crop that is to succeed the peas. Manuring peas generally produces a heavy crop which checks the growth of the weeds, and when the crop is light it leaves the soil very much infested with weeds. We have seen it recommended to cover a field sown with peas, lightly with straw, leaving the peas to find their way through it, and then vegetate; by this means the weeds are said to be all stifled, the soil kept moist, and the stems, which fall to the ground, kept from rotting. We have no doubt the plan would be advantageous, where there is plenty of straw, and the straw will not be lost. If the soil be light and sufficiently pulverized, and dry, it is a good plan to plough in the seed lightly; the hulk is much stronger when this mode of sowing is adopted. They may also be sown in drills, formed with the plough, and harrowed over. It is advisable to sow them as early as possible, as frost, unless very severe, will not injure them. The produce of peas is not easy to estimate—no crop varying more in this respect, as they are liable to many casualties in every period of their growth.

To the Editor of the AGRICULTURAL JOURNAL.

SIR,—I am convinced that the only way to show the merchants (and many others who *merely talk* in favor of the farmer) the importance of Agriculture, is to present them with statistics. In this country, where it is imagined that the United Kingdom could not, by any possibility, raise sufficient food for its population, it will scarcely be believed, that if one bare fallowing, in *eight* years, could be made to serve the purposes of one in *four*, the United Kingdom would be an *exporting* country.

If the plan of thin sowing, so strongly advocated by Hewitt Leavis, and other experienced farmers, were universally practised, the United Kingdom would be an *exporting* country.

What would Canada be if her farmers kept pace with the improvements of the Mother Country? What a different appearance would our towns and villages present! Would the hard times be felt as they are now? Would the value of property in the city of Montreal have decreased as it has latterly done?

If you, Mr. Editor, or any of your readers, answer the queries published in your last number, such a statement as will then be made, showing the difference which a good and bad system of Agriculture will produce, will, I am sure, astonish very many. It will convince many, who are well disposed towards Agriculture, that even they have not done what they ought to have done towards its improvement.

I hope that the Agricultural Society will yet confer great benefit upon Lower Canada. I believe that a change in the law, regulating the grants to the Agricultural Societies, could be made with advantage.

Would not part of the money given for the cattle be better employed in the purchase of seeds of new grasses, or improved varieties of grain—of new or improved instruments of Agriculture? These are questions which I should like to see discussed by some of your correspondents.

OBSERVER.

Montreal, 4th April, 1848.

[For the Agricultural Journal.]

We will never become fully acquainted with our deficiencies, as farmers, until we become fully alive to what our neighbors, under no better circumstances, have done, and as a consequence, of what we *we can* and *should* do.

Could any dairy-farmer, near Montreal, furnish you with a statement of the average yield of butter of his cows, and the average weight of pork which he raises? I, unfortunately, cannot do so. I seek for information. I want to know why our farming community is not more prosperous. Is it their fault, or is it not?

I find the following statement made by the Rev. Henry Colman, in his second Report on the Agriculture of Massachusetts. I copy it, because it is the one which is the nearest to the one which might be furnished you. Other dairy-farmers show a profit of from \$20 to \$24 per cow :

2. In *Ohio*.—Twenty cows gave 5000 lbs. new milk cheese for sale; each averaging also 25 lbs. of butter; 600 lbs. of cheese were also used in the family.

| | |
|----------------------------|---------|
| Cow, Cr. | |
| 280 lbs. cheese at 8c..... | \$22 40 |
| 25 " butter at 20c..... | 5 00 |
| Calf..... | 4 00 |
| Pork, 26 lbs. at 6c..... | 1 56 |
| | \$32 96 |

| | |
|--|---------|
| Cow, Dr. | |
| Wintering..... | \$12 00 |
| Pasturing..... | 5 00 |
| Interest on cost of cow \$15—10 perct. | 1 50 |
| Labor and attendance..... | 2 16 |
| | 20 66 |

Balance in favor of cow..... \$12 30

This was in Massachusetts, which, at the time this statement was made, did not raise sufficient wheat for home consumption. It was then that Colman declared he felt "that in most parts, Massachusetts may easily supply her own wheaten bread," and Colman was right. A better system of farming was adopted, and the earth yielded its increase.

The trade in butter to England will be an extensive one. An Act for the inspection of butter has just passed. If our butter can obtain a good name in the English market, it will always command a remunerating price.

We are now importers to some extent of most villainous cheese from the United States, which is sold sufficiently high for a better article. I presume our people eat this cheese because the English cheese is too dear. Cannot our farmers make a better article, and thus drive away this compound which deserves any other name than cheese? I know they can if they will do it, for I have eaten much better Canadian cheese than any imported from the United States, that I have ever tasted.

Dr. Ure remarks, in one of his recent works, that "it is computed a cow which gives eighteen hundred quarts (old English) of milk per annum, eats, in that time, eight thousand pounds of hay, and produces one hundred and forty pounds of butter. Two pounds and a quarter of hay correspond to one quart of good milk; and a cow which eats sixteen thousand five hundred pounds of hay, will produce three hundred pounds of butter per annum." Is this correct?

QUIRIST.

To the Editor of the AGRICULTURAL JOURNAL

SIR,—I have been much instructed in reading the Report of the Agricultural Journal of Miramichi, and with your permission, will notice some of its remarks. The climate of Miramichi and that of Montreal, I take to be much alike—perhaps the cold easterly winds are less felt here. It is therefore doubly interesting for us to be informed of what our fellow-colonists of New Brunswick have done, and what they propose to do, in the farming line, because we may be assured that we cannot but receive instruction from those who, like ourselves, inhabit a northerly climate. I say this without at all meaning to insinuate that we cannot learn much from our English brethren. The Report particularly refers to the three following points:

1st. On the improvement of our breed of cattle, &c.

2nd. On the propriety of improving the quality and enlarging the size of our manure heaps.

3rd. On the most advantageous method of feeding stock, with a view to their comfort, the production of manure, and the extension of the farm.

As to the first point, I think it necessary to quote merely the following remark, which one regrets to find is needed:—"Put aside the choicest progeny of your stock, and never permit the butcher, or any other man, to pluck them off your hands, however great the temptation."

On the second point, the remarks seem to me

so good that all will read them with pleasure. The Report declares :

"One of the most distinguished Statesmen of the day has said 'The manure heap should always be the Farmer's care.' To the eye of every one who would farm profitably, it should form, as it were, the nucleus of the farm. Now the truth of this remark none will deny, yet although our farmers—to their credit be it spoken—are proverbially expert at scraping up and keeping together whatever tends to money making—how very few of them display much care in the way of scraping up and keeping together that which, of all things, would help to fill their purses the fastest, viz., manures.

"What an immense quantity of valuable manure we see sinfully wasted or thrown away, the liquid—by far the most valuable portion suffered to escape as if it were of no value, the solid dung very frequently allowed to remain reeking in heaps, while its virtues rapidly escape into the atmosphere; and when the mess has been rendered comparatively worthless by turning it, when little but straw and rubbish are left, it is applied to the land, and what of necessity must follow? Why, disappointment. Dung-heaps—when it can possibly be done,—should be composed of manure and soil in alternate layers, because the soil, thus laid on, secures the ammonia, by far the most valuable portion of the ingredients."

The third point is discussed at greater length. Soiling is advocated as a means of keeping a greater number of cattle, and yielding a larger profit. In the absence of any well or badly conducted experiment, I can express no opinion. Should not a Premium be given for this object by the District of Montreal Agricultural Society?

The Society complains that too few farmers take an interest in its proceedings. Is it different with us?

Were not the following extract so very applicable to too many would-be-great farmers among us, who, being well to do in the world, and knowing as much (and no more) about farming, as their forefathers did *fifty* years ago, will not allow any one else to give an opinion upon Agricultural questions. Such people are "wise in their own conceit;" but I would just ask them what kind of farmers *they, themselves*, would be, if their forefathers had been as conceited and obstinate as they are?

But there is another and greater barrier which stands in the way of our agricultural advance-

ment; it is this, a rooted and grounded conviction in the breasts of certain farmers, around us, that because they know how to plough, harrow and sow, they have nothing to learn; they are perfect farmers; and acting upon this belief, they despise Agricultural Societies, and every other mean or method of becoming wiser.—Now than this foolish notion, nothing can be more detrimental to the course of improvement. Surely when it can be proved to such men, that lands which were considered sterile and worthless twenty years ago are now producing yearly abundant crops—that the arable lands of the mother country are now made to yield double their wonted produce; and that all this has been effected mainly by the aid which science has lent to agriculture, one would think these persons would be compelled to yield to such irresistible proofs of their error and ignorance?

It is true that many have undertaken to write on agricultural science, who have proved incompetent to the task, that many volumes have been written, filled "with words of learned length and thundering sound," which only "lead to bewilder, and dazzle to blind." It is admitted also that many of the true laws of Agricultural science, have not as yet been fully developed by any man; but what of that? much has been done—much is doing, and if we but wait awhile, we shall see the labours of many great men, who are diving deeply into the mysteries of science, for the benefit of agriculture, crowned with the most beneficial results; as a trite saying is—"Rome was not built in a day," thunder and lightning were as familiar and perhaps more imposing to the host of bright intellects that adorned former ages, as they are to men of our day. Yet the causes which occasioned the phenomenon remained a profound mystery, till Franklin pierced the veil. The Heavenly bodies were to the gifted minds of past ages, objects of interest and contemplation, yet no clue to their mysteries was attained, till the days of our immortal NEWTON. Let us not imagine, then, that because some of the mysterious truths of Agricultural Science have not been discovered as yet, that they are therefore unattainable. Let not our ignorance lead us to despise—merely because we cannot comprehend—the great things already accomplished by sciences for Agriculture. Nor let any farmer flatter himself that because he happened to know the art of farming as practised in his native land some twenty or thirty years ago, that he has now nothing to learn, or that he is a perfect farmer; but rather, encouraged by the success which has of late years distinguished Northumberland as an Agricultural County, let us all view ourselves as being as yet but in the *baby clothes* of learning, and diligently use every available means to increase our Agricultural information. Above all, let farmers learn to appreciate their calling; Scripture tells us, that while in a state of innocency, man's first business was to till the ground. Were not Job and Abraham farmers? and in every age of the world, have not

many of its brightest and best inhabitants been farmers? Yet, strange to say, a sentiment prevails very generally, and no where more evidently than at this place, that the practical farmer occupies a place in society, many grades lower than the merchant, the professional man, or even the lumberman, and this silly sentiment is greedily swallowed by many of our emigrants and native young men.

AGRICOLA.

To the Editor of the AGRICULTURAL JOURNAL.

THE AGRICULTURE OF THE DISTRICT OF GASPÉ.

I think I see a good many of your readers smiling at the heading of this article. The Agriculture of Gaspé! what can possibly be said of it? are there any farmers there? Such questions are likely to be put. The District of Gaspé is unknown: it is supposed here that its inhabitants live on fish, fish, and nothing but fish. This is a very great mistake. Bouchette says that "the land in general is of excellent quality"; and of the County of Bonaventure, he says, "there is much land in this county well adapted for the cultivation of grain in general, and also for hemp and flax. The land on the Bay of Chaleurs, from Port Daniel to New Richmond, a distance of more than fifty miles, extending, on an average, two miles inland, is a rich soil consisting of a red clay, covered with a rich coating of vegetable mould, easy of cultivation, and producing the finest crops." I am forced to confine my remarks more particularly to the County of Bonaventure, as I am acquainted with but a small portion of the County of Gaspé. I may, however, add, that the latter county has an Agricultural Society, which promises to do a great deal of good. The Report of its doings for the year 1846, I read with great interest; but, having unfortunately mislaid it, I am prevented from speaking of it as I would otherwise do. It is but a very few years since the settlers have turned their attention to farming, the fisheries and lumber trade being the general occupation. Fortunately, the change has taken place, and there are now many whose sole occupation is farming, and he who is industrious and thrifty does not regret the change.

As fine wheat was raised last year in the Township of Restigouche as was raised in any part of Canada. It was grown upon land manured

with sea-weed, thus shewing the benefit of salt to the wheat crop. The wheat crop not having been as yet attacked by the wheat fly, the old varieties of wheat are grown. Apples will grow well; but there are no orchards,—a few trees only. It is to be hoped that a new generation will not be unmindful of the comforts, as well as of the necessaries, of life.

That the soil is not unfavorable, nor the farming bad, it is only necessary to give the weights of the wheat, barley, and oats, which obtained the premium at New Carlisle, in February last:

- | | | |
|----|------------------------------|---------------|
| 1. | Wheat, James Henderson, | 68 lb. |
| 2. | " Robt. M'Nair, | 66 lb. 12 oz. |
| 3. | " W. M'Donald, | 68 lb. 9 oz. |
| 1. | Barley (2-rowed), R. M'Nair, | 60 lb. 12 oz. |
| 2. | " " J. Campbell, | 60 lb. 8 oz. |
| 1. | " (6-rowed), O. Sheran, | 52 lb. 12 oz. |
| 2. | " " P. Vibert, | 52 lb. 8 oz. |
| 3. | " " P. Porrier, | 47 lb. 2 oz. |
| 1. | Oats (white), John M'Kay, | 50 lb. 8 oz. |
| 2. | " (black), D. Fairservice, | 43 lb. |
| 2. | " " Rd. Smith, | 41 lb. 1 oz. |

The stock of cattle throughout this county is as good as in the generality of the counties of Lower Canada. I must confess that the inhabitants of the Canada side of the River Restigouche have not shown that interest in the improvement of the breed of cattle that their New Brunswick neighbors on the other side of the river have done. The Agricultural Society of Bonaventure has, however, done the most which its slender means allowed it to do, and in time, I have no doubt, it will accomplish a good deal more. An improved variety of sheep, and particularly of pigs, would add largely to the wealth of the community. The alligator breed of the latter ought to be utterly destroyed; it ought not to be allowed to live another year, but to be utterly exterminated.

Butter and cheese of the finest quality are made in the county. A trade in these articles to a considerable extent might spring up.

I have spoken very disrespectfully of the swinish multitude,—perhaps, some may think, too much so when they are informed that in some parts of the district lobsters are cooked for them. Hear that, ye gourmands!

Some manure with fish; the barn-yard manure is neglected; and, as a matter of course, the crop is not what it would be under a different management.

Now that the lumber trade has so many votaries, I anticipate a great progress in the District

of Gaspé, and I trust that your Journal will also be the means of aiding the present movement.

I shall close my remarks for the present, which, with your permission, I shall continue at a future period.

A.

Montreal, 7th April, 1848.

To the Editor of the AGRICULTURAL JOURNAL.

SIR,—Availing myself of the invitation given, in your last number, to correspondents, I venture to express the gratification I have derived from the perusal of your Journal, and more particularly from the pleasing announcement of the extensive circulation which it has already attained.

It is peculiarly encouraging to find, that, in this early stage of the existence of the Society, so much good is already resulting from its labours, since the large circulation which the Journal of its Transactions has obtained, may be regarded as a satisfactory indication of a coming awakening on the part of the farming interest, to the necessity and importance of increasing the facilities for the attainment of a scientific and theoretic, as well as practical, knowledge of the art of tillage and the culture of the soil.

On the development of the resources and the extension of the agricultural productions of the land depends the fate of Canada. We are at a critical time and in a critical position, and, bearing this in mind, it should not be overlooked, that on the prosperity or adversity of the farmer, mainly depends the prosperity or adversity of all the other classes into which the community is divided. Agricultural pursuits are as yet "the thews and sinews" of this Province, and it is of the utmost importance to its vitality and prosperity that sufficient aliment should be supplied in order to invigorate and prepare them for their important functions. It has far too long been the practice of our farmers "to prefer the old way, and to farm like their fathers before them," regardless of the manifold improvements which are daily being

introduced in Britain and the adjoining States. Well will it be for our country when they are weaned from their misplaced reverence for the things of "the olden time." The fact is indisputable, that a farmer, possessed of some scientific knowledge, in addition to practical acquaintance with his pursuits, is enabled to turn his farm to much better advantage, and, by keeping up a rotation, obtains much larger crops without impoverishing the soil, than another, who knows nothing of his business but what he has acquired by a plodding adherence to the beaten track and customs of fifty years ago. A wide-spread dissemination of useful practical information on agricultural subjects will be productive of much benefit, but has hitherto been very difficult of attainment. Now, however, the clouds are dissipating, and there is every encouragement to go on and prosper in the undertaking, inspired by the hope that your exertions will contribute to the advancement and prosperity of the country, and cheered by the reflection, that, though the difficulties in the way are numerous, yet he who succeeds "in making two blades of grass grow where only one grew before," is a benefactor to his kind.

The increasing interest with which your publication is being regarded, I look upon as the forerunner of better things,—the harbinger of much good,—the dawn of that day when the vast natural capabilities of this Province will be rightly appreciated and turned to profitable account.

Your obedient servant,

RUSTICUS.

Montreal, April 10, 1848.

EFFECTS OF CULTIVATION.—Buffon asserts that wheat is a factitious grain, and that there is scarcely a vegetable, whatever its present character on our farms, that can be found growing naturally. Rye, rice, barley, and even oats, cannot be found wild; that is to say, growing naturally, in their present perfect state, in any part of the world.

(For the Agricultural Journal)

FLAX.—BY AGRICOLA.

I now propose making a few further remarks on Flax, and, as I do not intend troubling you with long articles, I may address you frequently. My object is to keep the subject before the people, and to give them a *monthly hint*.

We must not be discouraged because our fellow-countrymen are so listless to all agricultural improvements. The Belfast Society at first began with but one mill—now, there are twenty-five mills in Belfast, and from fifty to sixty thousand persons employed in the trade. The objection that Flax exhausts the ground, ought not to be considered a very serious one. If the flax be steeped in a pit about ten feet deep, and, after the flax is removed, this pit should be filled with weeds and bog stuff, peat or mould, this will make manure of the best quality, and restore to the soil what the flax drew from it.

Why do we import linseed oil in Canada, a country so favorable to the production of flax? We should not only manufacture all the linseed oil we require, but we should not allow a pound of linseed cake to be exported: we should consume it all here,—feed it to cattle, the manure from which would be famous for the lands upon which a flax crop is to be raised. Linseed cake is sold in the city of Montreal at an extravagant price: this is the effect of want of competition.

I am persuaded that Flax Mills would be of great benefit to the whole country. They would employ the poor,—introduce a new crop,—make good farming more profitable. In Flanders, flax is a staple crop. The industrious and intelligent farmers of that country must be satisfied that it is a remunerating crop, or they would not engage in it.

I perceive by the *Toronto Cultivator* that Messrs. M'Gee & Co., proprietors of the Patent Hemp, Flax, and Oil Mills, at Toronto, advertise that "having secured by Royal Letters Patent, the invention of an entirely new process, especially adapted for this country, for the preparation of Hemp and Flax, hereby give notice that they are now ready to enter into engagements to an unlimited extent with all persons wishing to sow the same." I should like to see a similar announcement from a Montreal house, in a succeeding number of the CANADIAN AGRICULTURAL

JOURNAL. The Lachine Canal offers, for various reasons, one of the most favorable spots for the erection of such mills. If by no other means, could not such mills be erected by the establishment of Joint Stock Companies?

To the Editor of the AGRICULTURAL JOURNAL.

SIR,—When we reflect upon the happy and rich condition of the Lower Canada farmers generally, previous to the appearance of the wheat-fly, and calculate the millions of pounds lost in consequence, extending over a period of fifteen years, without any probability of these flies leaving us, unless we resort to means to exterminate them, it will be clear that no proposition can be of greater importance than one that should offer a probability of getting rid of this great infliction.

All parties are interested in this question—landed proprietors, farmers, merchants, mechanics, &c. &c. I feel fully convinced; that if all would use their influence to prevent a single bushel of wheat being sown before the 25th of May, of each year, for the next three years, not only would the farmer be benefited, each year, but, at the end of that period, the wheat-fly would have been starved out and exterminated, and we might then resort to sowing wheat, as in the good old times, and the lands of Lower Canada, and Lower Canada farmers, no longer afford ground for the unfavourable comparisons so often made.

Ten years ago, I gave, in the public prints, my opinion upon the nature and habits of the wheat-fly, and the means of destroying it, and the ten years of observation, since, have but the more confirmed me in the opinion then expressed.

My opinion then was, that wheat alone, of all the grain we sow, remains a sufficiently long time in the soft, milky state, to feed the maggot, the length of time it requires food, before entering upon the chrysalis state, for all other grain ripens too quick; and although, in the absence of wheat, the fly may have deposited its eggs in barley or rye, and may partially injure both these crops, yet the maggot or worm dies, for want of sufficient nourishment, and cannot, therefore, enter into the chrysalis state.

It is in the state of chrysalis that it remains dormant until the next year's greatest summer heat, (always about the first week in July,) when the worm of last summer assumes the perfect

state of the fly, and commences at once to seek whereon to lay its eggs, to continue its species.

Early sown wheat will be in the state to alone afford sufficient nourishment; therefore, by sowing no wheat whatever—not a single grain for two or three years—before the 25th May, of each year,—I feel perfectly satisfied that we should entirely get rid of the fly; but so long as one or another sows a few bushels, only as experiments, they not only lose such crop generally, but the fly is perpetuated, to their own injury and that of their neighbours.

The period for sowing is now approaching, and I feel so convinced that my opinion is correct, that perhaps these few remarks may bring out the expression of opinion of others, of more weight in the agricultural class, to ensure the necessary measures being taken to effect so great a good.

I am, Sir,

Your obedient servant,

R. U. H.

From the second year of the wheat-fly appearance in Canada, we have recommended discontinuing altogether the sowing of wheat, for a few years, as the only remedy against the ravages of the fly, or to obtain a variety of wheat that would be proof against their ravages, as some varieties are reported to be. The recommendation of our respected correspondent is the only remedy in our power to guard against the fly, and it is extraordinary, after all the warnings and experience that farmers have had for the last fourteen years, that many persist in sowing as early as the soil is fit for working. We do not perfectly agree with our correspondent, that we can get rid of the fly altogether by late sowing. We cannot account for its first appearance, and though we save our crop by late sowing, we very much doubt that we should be able to banish this destructive insect by that means, so as to enable us to sow our wheat at the period we did heretofore, previous to the appearance of the fly in Canada.

To the Editor of the AGRICULTURAL JOURNAL.

Sir,—While glancing over the last number of your Journal, I was forcibly impressed with the greatness of the changes which have been introduced within a few years in the Agricultural branches of industry.

Science is now brought to bear upon the cultivation of the soil, and the farmer is enabled, by the aid of a chemical analysis, to ascertain for what description of crop his land is best suited. He also is informed, what ingredient necessary for the formation of vegetable matter is most required by the soil, and how he may most readily supply the lack, or correct the superabundance, as the case may be.

The attention of scientific men has latterly been much turned to these subjects, and the fruits of their labours have been reaped, not only in increased production, but also in a lessening of the toil which is more or less indispensable to obtaining the increase of the ground. The press has teemed with works on Agricultural subjects, and Agricultural Chemistry has had its due share of attention. While you are, from time to time, presenting your readers with extracts from the latest works on these subjects, and with the latest notion “of the fitness of things” applicable to their pursuits, it has occurred that a retrospective glance at the state of Agriculture, as it was two hundred years ago, might prove at least amusing to some of your readers. In accordance with this design, I will occasionally (should the suggestion meet your approval) present you with an extract or two from a quaint old book, published in the year 1638, and intitled, “A Way to get Rich,” containing “sixe principalle vocations or callings wherein every good husband or housewife may lawfully employ themselves.” One of these “principalle vocations” is a system of “cheape and good husbandry for the well-ordering of all beasts and fowles, and for the generall cure of their diseases.” All which, we are informed in the preface, has been “gathered together for the generall good and

A PRIME PORKER.—Mr. George Wilkinson, of Lower Wyersdale, slaughtered a pig on Wednesday, under eight months old, which weighed near 400 lbs.

profit of this whole realm, by exact and assured experience from English practices, both certain, asie, and cheap; differing from all former and foraine experiments, which either agreed not with our clime, or were too hard to come by, or over costly, and to little purpose."

Yours obediently,

RUSTICUS.

Montreal, April 11, 1848.

We have received a communication from a correspondent at St. Ours, on the subject of "Birds," and although we do not give insertion to the whole in this number, we perfectly coincide with our friend in what he says respecting birds, that every species and variety of them are much more useful than injurious to the farmer or gardener. There are certainly many of our small harmless birds shot down here, without apparent motive except the pleasure of killing, and the discreditable practice should be put down, if possible. We have always thought that birds were not sufficiently numerous here, and regretted to see them wantonly destroyed, by men as well as boys. The farmers, in particular, should endeavour to protect the birds, which, undoubtedly, will do them much more good, in the destruction of insects and other vermin, than will amply compensate for any grain or other produce they may take a little of occasionally. We can scarcely believe that any true lover of the country, and its beauties, would wish to diminish the number of our birds, even though they should be less useful than they are. So far as our own experience of the matter goes, the wanton destruction of birds is chiefly the work of those that are not farmers, or lovers of the country, and its beauties; and we should be glad to see a heavy penalty inflicted upon all trespassers who visit the country for the indiscriminate destruction of any birds they happen to meet in their rambles.

We shall be glad to hear again from our correspondent, "Rusticus." It is by corres-

pondence that this Journal can be made truly useful, and accomplish the object proposed by its publication. We did not, and do not, wish to give our own ideas on agricultural subjects, in preference to the opinions of others; but on the contrary, we would be delighted to have the Journal generally approved of for its usefulness, and we hope all those who can add to its usefulness will communicate with us.

The following description of a Dairy, &c., is taken from "Evans' Treatise on Agriculture," and in future numbers we shall give further extracts from the same work on the making of butter and cheese:—

The dairy house for general purposes should consist of three separate apartments, the milk room, the dairy or working room, and the cheese or store room. The properties requisite in a good milk house are, that it be cool in summer, and moderately warm in winter, so as to preserve if possible a temperature nearly the same throughout the year, or about 50 degrees; and that it be so dry as to admit of being kept clean and sweet at all times. This can only be obtained in Canada by having the milk house partly under ground, or well banked with earth on the outside of the walls, and if possible, under the shade of trees, so that the sun can have no influence on the roof or walls in summer, and the frost must be entirely excluded in winter; the latter, however, cannot be done effectually unless by keeping a stove and fire in the milk house, or changing it into the dwelling house at that season.

The management of a dairy in Gloucestershire is thus given: "It is acknowledged by every one at all acquainted with the subject, that the quality of cheese does not depend upon the superior richness of the soil or the fineness of the herbage, for cheese of the first quality is frequently made from land of an inferior description, and from herbage of a coarse nature. Nor does the quality of the cheese depend on the breed of the cows, for cheese of the best quality is made from the milk of cows of all the different breeds that are to be found in the country; we think it principally depends on the management of the cows as to their food, &c., of the milk in converting it into cheese, and of the cheese, till it is fit for market.

The following circumstances are injurious to the quality of cheese:—Allowing the cows to get rank or ill-flavoured grass or hay, these conveying a bad flavour to the milk and cheese; allowing the cows to run and heat themselves; driving them far to be milked, which makes the milk froth much in milking; carrying the milk from the place of milking to the dairy, and allowing it to

remain long after it is milked, before it is set with the rennet.

The greatest dependence is upon the dairy maid; and the chief art of making cheese of the finest quality lies in her management. The superintendence of the dairy invariably devolves upon the farmer's wife.

The management of the dairy should be conducted with the greatest regularity. Every operation should be performed precisely at the proper time. Either hastening or delaying the execution of it will cause cheese of an inferior quality to be made of milk from which the best may be obtained. A dairy maid is selected for skill, cleanliness, and strict attention to her business. Her work commences at four o'clock in the morning and continues without intermission till bed-time.

The dairy house should be kept at a temperature of between 50 and 60 degrees; and the drier it is kept the better, as both milk and cream retain their sweetness much longer in dry than in damp air. Every time, therefore, the dairy is washed, it is dried as quickly as possible.

Around two sides of the dairy there are broad shelves, made of elm, for putting the vessels that hold the milk and cream, and the newly made cheese upon. On another side there is a frame with three large stone cheese-presses. In the middle of the north side is the door; and in the corner, on the left, is the stair leading up to the cheese lofts; and behind the door is a single cheese press, which is generally used in pressing the cheese the first time, before it is cut down and put through the mill. In the middle of the floor stand three leaden vessels, large enough to hold all the whey of one "meal," or milking; and by the side of these stands the cheese tub.

Above the dairy there are two cheese lofts around the sides of which there are broad shelves for holding cheese; and in the middle stands a frame for holding two rows of boards, called here "cheese-tacs," which being only about eight inches apart, contain a much greater quantity of cheese than could be disposed of on the floor. The stair to the cheese lofts is of oak, and seems to be the pride of the dairy maid, for it is dried, rubbed and polished so smooth, that it is dangerous to walk upon; but this sort of pride is encouraged only as evincing attention to cleanliness.

Along the north side of the dairy there is a shed which communicates with the dwelling house. In this shed the utensils are kept upon a stand for the purpose, the cream is churned, and other work performed, nothing being done in the dairy, but the making of the cheese, and the making up of the butter.

Opposite to the door of the dairy, and detached from the shed, is a wash house, with a pump well at the door of it. In this wash house, the water and the milk are heated in boilers for the purpose; and all cleaning working is performed.

Utensils.—The milking pails are made of maple,

on account of the lightness of the wood, and its cleanliness of appearance; they hold about six gallons each, and the cheese tub is of a size large enough to hold the whole of the milk; the ladder, the skimming dish and the bowl, are of maple; the sieve for straining the milk is about fifteen inches in diameter, and has a hair cloth bottom.

There are a number of cheese vats, sufficient to hold all the cheese made in four or five days. They are made of elm, and turned out of the solid. That which will give five cheeses to the hundred, is considered the best size for double Gloucester, the inside diameter of which is fifteen inches and a half, and depth two and a half. Round boards called "suity boards," made of elm, of the diameter of the cheese vats, and thicker in the middle than at the edges, are occasionally necessary to place on the cheeses, when in the press, if the vats are not quite full. Without the assistance of these boards, the cheeses will be round in the edges, (a proof of not being well pressed,) and not so handsome. The cheese presses are made of stone, as being considered the cleanest material for the purpose, and of steadiest prussure. They weigh about seven hundred each; they are raised by a block and pulley; and the whole apparatus is painted white.

From the whey leads, which are oblong, and about eight inches deep, there are leaden pipes which convey the whey into an under ground cistern, near the pig-house, where by means of a pump, it is raised when wanted for the pigs. Leaden keep the whey longer sweet than wooden vessels, and are much easier kept clean. This is done by scouring them with ashes of wood, and washing them well every time they are emptied, which is every 36 hours.

Tin vessels are used in preference to earthenware for holding the milk that is set for the cream. Those used for cream hold about four gallons each, and are made with a lid for the convenience of shifting the cream from one of these into the other. This is done once every day during summer; and there is a wooden slice, or knife, always kept in the vessel, with which the cream is frequently stirred during the day, to prevent a skin from forming on the top of it, which is injurious to the quality of the butter. The skimming dish, used for taking the cream off the milk, differs from that used in cheese-making, being made of tin, with holes in it, to let the milk run out that may be taken up with the cream.

The butter scales, prints, and butter boards, are of maple. The boards for making up the butter in half-pound rolls are about one foot long and nine inches wide. The barrel churn is made of the best oak, and great attention is paid to its cleanliness. The butter-milk, is never allowed to remain in it: but washed, scalded, and put up to dry as soon as the butter is taken out.

Milking.—This is performed in three separate courts, to which the cows come from their several fields. The milking should be as near as possi-

ble at equal divisions of the day, commencing at about four o'clock in the morning, and three in the afternoon. To each milker eight cows are assigned, and one man carries the milk from all the milkers to the dairy. The milking should be finished in an hour. The dairy maid sees that the milkers do their duty, and that all the cows are milked clean; for the milk that comes last is the richest; and, besides, if the cows are not clean milked, there will be a gradual diminution of the milk perceptible daily; for these reasons the greatest care is taken that the cows are clean milked.

THE DAIRY.—We have seen a very good description of "The Dairy" in the "Rural Cyclopædia," and it would be very desirable if farmers generally could have such dairies, but as this would scarcely be possible, under our present circumstances, we give the description, that those who are in circumstances to have the dairy complete, may find useful suggestions, and those who cannot afford such an outlay may, nevertheless, have their dairies so constructed as to admit of making good butter and cheese:—

THE DAIRY.

The Dairy-house should be situated on a porous soil, and in circumstances thoroughly favorable to constant ventilation, pure air, and entire freedom from vapours and noxious gasses; and it should also enjoy shelter, whether by the configuration of its site or by screens of trees, from notherly, easterly and south-easterly winds. The principal parts of a dairy-house are the milk-room, the work-room, and the cheese-room.

The milk-house ought to be of sufficient capacity to contain one day's milk of all the cows which are kept upon the farm. It must be cool, of uniform temperature throughout the year, thoroughly ventilated, and perfectly free from damp vapours and bad smells; and it must always be kept clean, dry, and sweet aired. Its temperature in any part of the year must not rise above 55° nor fall below 50°, else it will certainly injure the milk; and this temperature can be maintained only by means of deep cooling shade in the season of intense sunshine, and of a stove, or some kindred appliance, in the season of cold winds and of frost. It may be constructed either by sinking the floor some feet under ground, and making the roof a prolonged arch of stone or brick, or by having the floor on a level with the surrounding surface, and forming the roof in the ordinary manner, with a covering, not of slates or of tiles, but of straw-thatch, to enjoy the shade of overhanging trees. The distance between floor and ceiling

ought to be at least ten feet; the floor should be a close pavement of polished sandstone, or of tiles, with all its seams so completely puttied as to prevent the entrance or stagnation of even the smallest portion of liquid, and with a prevailing inclination toward a drain for carrying off the water; and the bench or table for holding the milk-pans should consist of polished marble, or of beech or plane-tree, or at worst of polished sandstone, and should extend round the walls—if the milk-house be a sunken one—at a line a little below the level of the outer ground, or, in any case, not more than three feet from the floor. Two windows may open towards respectively the north and the north-east, and should be covered with a sieve of brass wire, or zinc wire, impenetrable to mice, and a sheet of gauze-cloth within the wire, such as to exclude flies and yet to admit light and a current of air. If only one window can be thus constructed, or the two be insufficient in size for abundant ventilation, air-holes, covered with wire, should be cut a little above the milk-bench and on opposite sides of the room; and if the windows cannot be opened towards the north or the north-east, but look in some other direction, each must be shaded with a board, so placed as to admit a current of air, and at the same time to exclude the rays and heat of the sun. Glazed windows may be added for the winter; yet, except in either very cold or very hot weather, they are quite useless, and ought always to stand open. "A complete ventilation," remarks Sir John Sinclair, "may be preserved by a number of openings in the outside walls near the floor, covered canvass or wire-cloth, to which sliding shutters are fitted on the inside. If there is no apartment above, a ventilator should be made on the roof, covered with weather boarding, and communicating with the ceiling of the milk-room by an enclosed box or case formed betwixt the scantlings, with openings both on the under side next the ceiling, and on the upper side to the ventilator in the roof. Where there is no apartment above, the case in the ceiling should have openings at the ends through the walls, with wire-cloth coverings. Two of these cases should be made in the ceiling, with two openings to each from it, about one foot square, perforated with holes or covered with wire-cloth." The milk-bench, the floor, and the walls, of the house, ought all to be so closely constructed as not to admit of the lodgment of milk, dirty water, dampness, or any impurity, the milk-bench and the floor ought to be carefully washed and dried every time that milk or water is dropped on them; the walls and the ceiling ought to be frequently swept, so that no dust may accumulate or cobwebs be formed; and the drain which carries off the water should be kept as clean as the floor itself, and should communicate, not with any sink or pond, but with an outward channel of perfectly free and open conveyance. When a little rill of water from a closely adjacent spring can be made

to flow along the drain of a milk-room, it has a finely cooling and purifying effect, carrying off effluvia, keeping up continual ventilation, and maintaining constant freshness and sweetness in the air. The work-room requires to be as near as possible to the milk-house for convenience, and yet to be sufficiently distant and separate not to communicate to the milk-house any of the steam from its boiler or of the effluvia from its floor. It must have a closely paved floor, and be quite clean, and perfectly free from stagnations of milk, from putrefaction of curd, from lodgments of dust, from foul vapours, and from all other kinds of impurities. On all small farms, the work-room ought to be of ample capacity for all the operations of the dairy, both direct and subsidiary; on all large farms, it ought to comprise three apartments—one for churning, or for making cheese, and one for cleansing the utensils and vessels. A verandah round both milk-house and work-room is also a very desirable contrivance, shading the milk-house from the sun in summer, somewhat aiding its warmth in winter, and allowing the dairy utensils to be dried and aired in rainy weather. The cheese-room ought, in every instance, to be a separate apartment, no matter in what part of the farm-yard, but clean, moderately cool, perfectly dry, and quite free from bad vapours and gasses.—*Rural Cyclopædia*.

CULTIVATION OF MELONS.

There are many varieties of the melon (*Cucumis melo*), of which the best may be considered as "Skilman's Netted," the "Green-fleshed Citron," the "Green-fleshed Nutmeg," the "Large Yellow Cantaloup," the "Green-fleshed Persian," the "Musk-scented," and the Pineapple." Of these, the first three are generally cultivated throughout the United States, and abound in our markets for at least three months in the year. It is already known to many of our readers that this city is greatly indebted for this luxury to several families by the name of Bergen, who annually cultivate some hundred acres, near Gowanus, Long Island, and at Shrewsbury, New Jersey. Although not a sure crop, we have been informed that an acre of their land, well tilled, will yield from \$100 to \$400 worth of melons in a season.

The soil best suited for the melon, in open culture, is a light, sandy loam similar to that of the southerly end of Long Island and adjacent shores of New Jersey. The ground should be plowed or spaded, from 12 to 18 inches deep, and well pulverized with a harrow or rake. The proper season for sowing is at the time the peach tree is in bloom; for, if planted earlier, there would be fear of their being cut off by frosts. The seeds may be sown in broad hills, 18 inches in diameter, and 5 feet apart from centre to centre, each supplied with a shovelful of well-rotted stable, or barn-yard manure. In order to guard against accidents, at least 20 seeds should be scattered in a hill, which should be covered with finely-pul-

verized earth at about the same depth as in planting Indian corn.

Soon after the plants are up, and begin to show their second leaves, they may be weeded with a hoe, and a portion of them thinned out, still leaving enough to guard against accidents or the depredation of worms. In the course of the summer, before the vines begin to spread, two furrows should be run between the rows, with a cultivator or plow, turning the earth directly from the plants, which should again be freed of weeds, and reduced in number to five or six in each hill. A few weeks later, a second plowing should take place, turning the earth towards the vines, when a broad, flat hill should be formed, slightly hollowing in the middle, so as to receive and retain the water supplied by irrigation or from the fall of rains. After this, no further attention will be required, except in keeping down the weeds, and in guarding against worms.—*American Agriculturist*.

One great deficiency in our cultivation is, that it is too slovenly for wheat. We do not in some cases, take pains to have our lands thoroughly drained, so that no water may stand upon them, and the ground not be left saturated with water during winter, where winter wheat is sowed, or after rains late in the season. Nothing is more prejudicial to wheat than this neglect. In the next place, our grounds are surcharged with weeds. Wheat is, for example, often sown after potatoes. What can be more rare than a clean potato crop? In general potatoes are manured with the coarsest manure; and much of it the sweepings of the barn floor, full of chaff; and then they are seldom hoed more than twice, more frequently perhaps but once in a season, so that the weed ripen their seeds and fill the ground with a pernicious growth for the next season, among which we could scarcely expect that wheat should flourish. It is not uncommon to see an attempt at raising wheat where the weeds entirely overpower the grain. Success under such circumstances, is certainly not to be looked for. "Can a man gather grapes of thorns or figs of thistles?" In the account given of the agriculture of Norfolk, England, it is said that Lord Erskine, in riding over the farm of the distinguished Mr. Coke, and surveying his extensive fields of wheat, discovered a single plant of lavender among the growing grain. This was deemed quite remarkable; and a premium was offered for any one who would discover any weeds in the growing crop. Mr. Coke, we believe, not unfrequently gets six and seven quarters (eight bushels to a quarter) of wheat to the acre. Our farmers have no patience for any such cultivation as this, and with ground half prepared, full of weeds, without water furrows to drain off the wet, and perhaps with seed poorly selected and but half cleaned, we complain that we cannot raise wheat. It is matter of more just surprise, that, with our modes of cultivation, if modes they can be called, we can raise anything.—*Selected*.

CULTURE OF INDIAN CORN.

EDITORS OF THE CULTIVATOR.—It must be apparent to every one, that the aggregate value of the Corn Crop is immense to our country, and as almost every cultivator of the soil, throughout all its varied climate, and on all its variety of soils, is a grower of this crop to a greater or less extent, it becomes a matter of importance that it should be managed to the best advantage. I know of no better way to arrive at the desired result than the practical experience of successful corn-growers, made public through the columns of the agricultural press. We may all learn something from one another; indeed I never had a hired man even, in my life, however ignorant, that had not a way of his own of doing *something* from which I obtained a new and profitable idea. These considerations must be my apology for any apparent egotism in the frequent use of the personal pronoun in this communication.

I do not expect to add anything new in information upon my present subject, which has been so often and so ably handled by others before me, but simply to show by what process I have been successful in raising much larger crops of corn to the acre than would be considered an average yield in this section, at least. The *average* yield of my corn crop, on 8 to 12 acres annually, has not fallen so low as 60 bushels per acre in 10 years, while in the more favourable seasons and on my best lands, it will come up to 80 to 90 bushels per acre. It is proper also to state, that some of the fields would not cut 500 lbs. of hay to the acre 10 years ago.

The land intended for corn is always broken up from 6 to 9 inches deep, varying with the quality of the soil, late in the fall, in order to that perfect pulverization of the soil which the frost of winter contributes so essentially to secure. The plowing is performed with great care and precision. No baulks—no crooked or imperfectly turned furrows are at all allowed, but the whole soil to the required depth is turned over.

The heaps of compost manure are made up on this land in August or after, beds being plowed up to receive them. These heaps are ranged at convenient distances to load into the cart in the spring, and spread on the land with the best economy of travel, and contain 30 to 40 loads each, which is the quantity usually applied to the acre. Thirty-five or forty bushels is called a load. In the spring the manure is laid on the land in small heaps; the rows of heaps about four paces apart, and the heaps in the rows a little less distance apart, because a given number of loads, fine manure particularly, can be spread with more ease and expedition by making more heaps of a load, and placing them near together, than by following the more common practice of making larger heaps wider apart.

The harrow, going twice in a place, is started

as soon as the workmen commence spreading the manure, in order that it shall be immediately incorporated with the soil without the loss of its valuable properties by evaporation, and also to divide and pulverize the soil above the sod, so that the plow afterwards may be used in a light furrow without disturbing it. Great improvements have been made in harrows by constructing them in two parts, connected together with hinges—the plow, up or down, upon the hinges of either half, enables the harrow to adjust itself to the surface of the land in all places; and, whether smooth or uneven, it will always hug down close, and “keep digging.” No farmer who has ever used a hinge harrow would be without one for five times the cost of making. When the harrowing is completed, the plow, with a sharp point, and a roller on the beam gauged to the proper depth, covers the manure 3 to 4 inches, which, after a trial of all ways, I consider about the right depth for fine compost.

The land is then furrowed out as nearly north and south as the shape and surface of the field will admit, and also east and west, the rows being 3½ feet apart each way. I prefer this distance to planting nearer. In my earlier farming operations, I used to plant corn considerably nearer both ways, of course growing a greater number of stalks and ears to the acre. In a favorable season, as to moisture, probably a few more bushels may be obtained by closer planting; but in offset the labor is also considerably increased. There are more hills to plant and hoe, and the ears being usually much smaller, the labor of husking a given number of bushels is greater, and no man can husk small ears and “nubbins” as fast as large ones. Besides, I find by actual experiment, that a closely planted field will not stand a drought nearly as long as a field planted wider apart. Every stalk requires its due proportion of moisture from the earth in order to carry the ear of corn to full perfection, and of course, the greater the number of stalks to the acre, the greater the draught upon the soil for moisture. In planting on a scale of 8 to 12 acres, therefore, I go for more space between the hills, notwithstanding there has been much said in favor of *shading the ground* by close planting, to prevent the effects of drought. It is of considerable importance to have straight rows both ways, the use of the horse and cultivator being much more effective in this case than in crooked rows; besides, no farmer having a spark of honest pride, wishes to gaze all summer at so unsightly an object as crooked corn rows, or expose the same to the gaze of others.

In planting the corn, which is a nice operation, care is used to scatter it well in the hill, putting in 6 to 8 kernels. I always direct the planters to occupy 8 to 12 inches square with each hill. This may appear a small matter to some, but it is a fact that corn planted thus will ear heavier, and there will be more stalks bearing two good ears,

than if the common practice of tumbling the corn into the hill at hap-hazard is pursued. Indeed one could better afford to pay a man two dollars a day, to plant corn in the way I have recommended, than the common price, planted in the common way. The corn is covered at least 3 inches deep in sandy and gravelly soils, for two reasons. In this section of country we frequently have late spring frosts which nip the corn after it is up, and if covered but slightly the vitality of the tender plant is often destroyed by freezing down to the roots, whereas if covered 3 inches deep, no permanent injury is done. Again, we sometimes have dry weather about planting time, and if the earth dries down to the corn after it has sprouted, it may not come up at all; if it does it will be a long time about it, and at the end of three weeks will not be nearly as vigorous as that planted deeper. The seed is planted dry. I have tried a variety of steepers for seed corn, but have settled down to the impression that it is as well planted dry as any way. The most effectual "scare-crow" I have ever found, is a line of white twine strung round the field, and supported by long stakes.

In working the corn after it is up, the main dependence is upon the horse and cultivator. The construction of many of the cultivators in use is faulty. The upper part of the tooth is so short, and the frame work in consequence is brought so near the ground, that the implement goes bobbing about over the top of the weeds, clogging up with every impediment it meets—the weeds of course are not cut off or rooted up in a thorough or desirable manner, although I grant they are somewhat *mangled*. In a future communication I may give a drawing and description of a cultivator, made at my suggestion, by an ingenious blacksmith in this place, which is not liable to the above objections. At weeding time the horse and cultivator pass through the rows both ways, perfectly pulverizing and mellowing the soil, and as the rows are *always straight*, the soil is worked up close to the hills each way, rendering the labor of weeding with the hoe comparatively light. The corn is again worked both ways with the horse and cultivator at the second hoeing, the feeble stalks are pulled out, leaving 4 to 6 standing in a hill, and a broad, *flat* hill made. I find it cheaper for me, so far as labor is concerned, to earth up a little than to hoe perfectly level, and the hills being made broad and flat, it is, for anything I can discover, equally as well for the corn.

I never hoe but twice. Having plowed the land the previous autumn, nothing green started up before the winter set in, and the frost immediately following, the grass roots were killed. In the spring the land was well harrowed and plowed above the sod; there were no seeds of weeds in the manure, it being well fermented compost, and thus the work of the season was in a great measure *done* before the seed was planted. After the

second hoeing the corn has the entire occupation of the ground, no further trouble being experienced from weeds of any kind. The thorough working of the land before planting, and also by the use of the horse and cultivator through straight rows *both ways*, at the first and second hoeing, has the further advantage of bringing the corn along through the fore part of the season with great rapidity, which is of essential importance, particularly in our northern latitudes.

There is no variety of corn that is not either improved or deteriorated by the manner in which the seed is selected. As soon as the earliest ears are thoroughly glazed, I go over the field, selecting those for seed that are early and vigorous, and from stalks producing *two good* ears. The corn is immediately braided up and hung in a dry, airy place. I have a kind of very long-cured, eight-rowed corn, which I have planted for several years, selecting the seed in the field each year in the way described, and which will yield a quarter more, the quality and cultivation of the land being the same, than it would when I began raising it—the corn is also at least ten days earlier in ripening. At first it was difficult to find double eared stalks, but now, it would seem to an observer in passing over the field, that a large proportion of the stalks produce twin ears measuring, the two together, 24 to 26 inches in length; many of the single ears will measure 14 or 15 inches long. Of course no kind of corn can produce to any extent, two ears upon a stalk, of this length, unless the land and cultivation are both good. It is to be hoped there is "a good time coming," when no land will be planted with this luxuriant grain that is not good, or *made good*, by the liberal management of its proprietor.

As my communication is already too long, I will say nothing at present of the various modes of harvesting the crop; perhaps, at some future time, I may do so, and if I should my remarks will show the results of some practical experiments which I have instituted.

F. HOLBROOK.

Brattleboro, Vt., Dec. 14, 1847.

DIRECTIONS FOR PUTTING ON GUTTA PERCHA SOLES.—Dry the old sole, and rough it well with a rasp. Put on a thin coat of solution with the finger; rub it well in, let it dry, then hold it to the fire, and whilst warm, put on a second coat of solution thicker than the first; let it dry, then take the gutta percha sole, and put it in hot water until it is soft; take it out, wipe it, and hold the sole in one hand and the shoe in the other to the fire and then they will become sticky; immediately lay the sole on, beginning at the toe, and proceed gradually. In half an hour, take a knife and pare it. The solution should be warmed, by putting as much as you want to use in a cup, and placing it in hot water, taking care that no water mixes with the solution.

Agricultural Journal

AND

TRANSACTIONS

OF THE

LOWER CANADA AGRICULTURAL SOCIETY.

MONTREAL, MAY, 1848.

Never was a period when the improvement of Canadian Agriculture was more urgent than the present. Whatever opinions may have been formed of the general crop of Lower Canada, when harvested last year, it is now well ascertained that it was very far from abundant. It may not be perfectly understood, that the only real sources of wealth any country can possess, are her own productions. This fact will become more manifest every day to those who will take the trouble to consider the subject properly. The languishing state of trade and commerce complained of in Canada may, we have no doubt, be attributed chiefly to the deficiency of her annual productions, compared with her population and annual expenditure. All attempts to secure a prosperous commerce to Canada will prove abortive, so long as her annual products are so deficient as at present. There is a large amount of capital expended in our cities that can only yield profitable returns by a prosperous trade and commerce, and such prosperity is impossible, without our products are sufficiently abundant to give employment to trade and commerce. We submit these facts in order to show the policy, as well as necessity, of providing for the improvement and prosperous condition of Agriculture—the whole population of town and country being, we might say, equally interested in the matter. It is in vain that we boast of our naturally fine lands, and not unfavourable climate, if we do not improve them to the uttermost. "Perfect Agriculture is the true foundation of all trade and industry—it is the foundation of the riches of States," and to no country do these lines apply more

correctly than to Canada. The products of a perfect Agriculture are the only riches we can rely upon, and call our own, and they must form the foundation of our own trade, commerce and industry. The Lower Canada Agricultural Society has been organized with a view to effect the amelioration of Agriculture, but to enable them to do this, general support is necessary. If it is possible to advance the general interests, by promoting the improvement of husbandry, it cannot be expected, nor would it be reasonable, that the whole burthen and expense should rest upon the Directors of the Society. The modes of improvement they have proposed are, we believe, approved of and considered necessary, but without adequate funds they cannot be carried out. If all who would benefit hereafter by the improvements required, would contribute even the small amount that constitutes an annual member, the Society would very soon be able to commence one Model Farm, and Agricultural School, that would shew what might be done. Any general improvement manifestly required should receive general support and encouragement. The Society have commenced, and it now rests with the public at large to come forward to their support to enable them to go on successfully.

SOWING OF WHEAT.—We scarcely need remind our agricultural friends that the time for wheat sowing should be from the 20th to the end of May, as this period for sowing has proved to be the safest to prevent the ravages of the fly injuring the crop. We have heard from several quarters that what is known as the "Black Sea Wheat" is no longer proof against the disease of rust, as it used to be when first introduced. It was from the circumstance of this variety of wheat coming to maturity in three months from the time of sowing, and being exempt from rust, however late sown, that made it so valuable, as it could be sown at such a time as would ensure its safety from the fly. We think it very possible that

the samples may have got mixed with other varieties of wheat,—indeed, we are certain it has in many instances. No doubt that any wheat imported from a foreign country, and cultivated here for several years without any renewal of seed, may produce a very great change in the plant. The only remedy for this is, the importation, as soon as possible, of fresh seed of the same variety of wheat. This is a matter of so much consequence to the country that it should be provided for by all means. We have sown here a sample of beautiful wheat from New South Wales, and it became so rusted as to be totally useless. We have no desire to alarm farmers, nor have we had an opportunity of seeing the reported rust on the “Black Sea wheat,” but, from the respectable sources from which we have derived our information, we have no doubt on the subject. We have heard of “three months wheat,” imported from Genessee, in the United States. Some persons speak highly of it, while others report it to be a worthless variety, that does not succeed well here. We beg further information on a subject of so vast consequence to Canada.

WASH FOR SEED WHEAT.—No farmer should neglect to prepare his seed wheat by washing, and drying with lime or ashes, previous to sowing. The safest wash is water a little warm, to which urine may or may not be added, and common salt, so that the mixture will swim an egg. Into this fluid the wheat must be thrown, and stirred about until all the light and imperfect grains float, and are skimmed off. This must be carefully done by those who wish their wheat to be free from smut. The wheat should then be allowed to drain for a short time, and afterwards powdered with newly-slacked lime or wood ashes, at the rate of about one bushel of lime to twelve bushels of wheat. It might then be left untouched for a night, or ten or twelve hours previous to sowing, and then stirred up thoroughly; and spread out on the barn floor to

allow it to dry. It must not be put into bags until it is dry. The sooner the wheat is sown after this preparation, the better it will be, lest it should heat and get injured. There are various steeps recommended, but, from experience, we can answer for this being a good mode of preparing seed wheat, and will effectually prevent smut, if the washing is properly executed and the defective grains skimmed off, which may be done perfectly by a little care. If the steep is strong enough, grains of oats and other seeds will also float, and may be separated from the wheat. We do not recommend any poisonous substance to be dissolved in the wash, as we know it is not necessary, and such substances are extremely dangerous about a farmer's barn.

FENCES.—It would be very desirable if a more economical plan of fencing than that which we have at present could be introduced in Canada. The general mode of fencing is both expensive, unsightly to the eye, and insufficient, in consequence of its liability to derangement by the frost, and constant need of repair. We are aware that it would not be possible to introduce at once a total change in our mode of fencing, but a commencement might be made. However convenient, and necessary straight roads, and long, straight lines of dead wooden fences, may be, we could never discover that they improved the beauty of the landscape, and they are more objectionable from the circumstance of the great difficulty of keeping such fences in a proper state of repair. The custom is here to have drains along the line fences between neighbours, and these drains are generally so close to the fences that the frost has additional power to disarrange the posts composing the fence, and this makes necessary constant repair. From this custom being general, the drains cannot be kept in the best state of efficiency, so close to the line fences. The only way that drains can be kept in a constant state of usefulness is to slope them off on each side, cart-

ing away the slope to the compost heap,—to fill up hollows,—or to top-dress other land of different quality of soil. This, we believe, would ultimately be the most economical mode of draining, because the drains would not be liable to fill up, and the slopes would produce grass nearly to the bottom of the drain. In proportion to the quantity of water to be discharged, a small channel might be kept free of grass at the bottom, and in times of high floods the sloped part of the drain would afford ample discharge for the water. In this drain so formed, the fence might be constructed a little on one side of the centre, so as not to obstruct the discharge of the water at ordinary times. Of course, in drains where large quantities of water would have to be discharged, the fences could not be constructed so, but we believe that they might be so constructed in three-fourths of our drains. The fences would thus be nearly out of sight, and not be so liable to derangement by frost or wind. Stone fences might be constructed, built from the bottom of the drain, against the bank on one side. We have proved this plan to be a good one, and the walls stand better than when placed on the surface. It might not be a sufficient fence for both sides, but by putting one rail about eighteen inches above the wall no animal would pass it on either side. The sloped drains, with the fences placed nearly at the bottom, where fences are necessary, would be a great improvement, and if the work is properly executed, it will stand well and answer every purpose. The cross fences on almost every farm might be constructed in this way. The earth carried off the slopes would amply repay the farmer's trouble if properly applied to the compost heap or as top-dressing. Fences of live thorn and other wood might be planted, and in a few years would make a fence requiring no further labour, and improve the appearance of the country. Perhaps it would not be advantageous to arable culture to create too much shelter, but there is not much danger of this while we have scarcely a live fence in the

country. We offer these suggestions, and hope it may induce others to consider this subject and give their opinion upon it.

Butter and cheese are articles of produce which might be made of great value to Canada. Our milk, as it comes from the cow, is admitted to be of most excellent quality, equal to that of any other country. It must, therefore, be our own mismanagement of it, in manufacturing it into butter and cheese, that is the cause of these articles being generally of inferior quality. It is undoubtedly very discreditable to us, that when nature gives us milk of the best quality, we should make butter and cheese from it, very frequently, of the most inferior quality. This, we maintain, is altogether from the want of suitable dairies, and skilful management of the milk in the process of manufacturing into butter and cheese. We have, in this number, given a description of what would be suitable dairies, and we may safely state that few, if any, farmers have such dairies. They might be constructed on a judicious plan, and to answer the farmer's purpose without incurring a great outlay. We do not expect that farmers generally should have them equal in every respect to those we have described, but they might approximate to the plan, if they would only see the necessity of the dairy being the most well finished, best ventilated, and appropriately furnished apartment on their premises, for the uses for which it is intended. If cleanliness, a perfect ventilation, coolness, and pure dry air, are actually necessary in any place appropriated to the keeping of milk, and making butter and cheese, how many such dairies have we in Canada? We may safely answer, there is scarcely one! The milk is very generally kept here in a portion of the cellar of the dwelling house, partly, if not altogether, below the level of the ground, and not having sufficient ventilation. In the same cellar is kept all sorts of vegetables, meat, fish, and other articles, not perhaps in the same apartment with the milk, but in a situation to impregnate

the air of the entire cellar with all sorts of smell, and it is well known that milk and butter is sure to partake of any foul air in the immediate vicinity of where it is kept. The floors of cellars are usually damp, and loose planks are usually placed on this damp floor, where milk is frequently spilled, and creates a most foul smell. The walls are also damp, and indeed the whole thing is as unfit for a dairy as possible, and never can be washed, cleaned, and aired, as it should be. How then can we expect to have good butter and cheese under such circumstances? The thing is impossible. We know there are many farmers who have neat little buildings for summer dairies, detached from all the other buildings, but they are generally without any shade, and defective in their construction. It is not possible to make good butter or cheese in our climate, however good our milk, without suitable dairies, proper temperature, and skilful management. We know the best quality of both cheese and butter are made in Canada, and therefore we are certain there is nothing in our soil—the milk produced from it—or in our climate, to prevent the general production of good butter and cheese, whenever we adopt the means required for its proper manufacture.

AGRICULTURAL REPORT FOR APRIL.

The month of April commenced as favourably as could be desired by the farmer—nearly all the snow disappeared, and ploughing might be executed in the first week of the month, and in the second week, sowing, in many places. We have seen as early springs, but they are unusual. We suppose farmers have taken advantage of the early season, and sown oats, peas, and potatoes on every soil that was fit for working. These seeds cannot be put in too soon, in spring, after the soil is fit for them, and we believe the extremely bad quality of our oats, at present, is chiefly to be attributed to late sowing, and not maturing properly. It is also generally admitted, that potatoes early

planted, will not be so liable to disease as the produce of late planting. They would be sooner ripe, and they might be taken up dry and secured in that state. By careful cultivation, not applying large quantities of fresh dung to them in planting, and planting in dry soil, reasonable crops may yet be raised of this excellent root; but if they are forced to a large size, by abundant quantities of manure, they will not keep or be good for the table. Soot, ashes, lime, and salt, would be preferable for potatoes, to farm-yard manure. There is sufficient ashes made in Canada to apply to this crop, if saved for the purpose, and we can assure farmers that ashes applied to the manufacture of food will be much more conducive to general and individual interest, than employing them in any other manufacture. The ashes of the wood of our forests, which constituted the whole produce of the soil, must manifestly be the best and most powerful manure that can be employed in producing other crops. What is farm-yard manure but the refuse of cultivated crops, and the *ashes* of trees *must* be much more powerful and valuable in every respect, as a manure. It is most extraordinary how little regard we have for the best manure in the country. Soot, a most valuable manure, is generally wasted in Montreal, thrown in the streets and washed into the river. We know the great value of this substance, as a manure, by experience. We hope salt will be imported, this year, in sufficient quantity to allow farmers to make use of it in agriculture. If it cannot be had for a shilling or fifteen pence the minim, farmers cannot use it advantageously. It is obtainable in the British Isles, for this purpose, for six pence the cwt. It is a great bar to improvement here that special manures are so exorbitantly high. It prevents any experiments being made when there is not a due proportion between the produce and cost of production. It is not with us as in the Mother Country; we have not abundant capital to try experiments, if very expensive, and uncertain in their results, and

if they cannot be made at a moderate outlay, and with sure prospects of remuneration, few experiments will be made with us. We must, therefore, endeavour to profit by experiments made in other countries, and it is in our power to do so. Although we have had a very clear atmosphere the greater part of the month of April, the soil did not dry fast generally, and we attribute this to the frost penetrating the soil to a considerable depth, in consequence of the small quantity of snow last winter, and the frost not being yet out of the ground. The weather became cold on the 18th, and we had snow sufficient to cover the ground, which, however, disappeared on the 19th, and the weather again become moderate. We believe there has not been so much seed sown, up to the 24th, as we were first led to suppose, but this is not very material if other work has been forwarded, so that sowing will not be retarded by the time the soil becomes warm, and in a state to produce a more rapid vegetation than it could do at its present temperature.

Sowing should, by all means, be executed as soon as the soil is fit to work, provided it be the proper time for the seed that is to be sown; but it is not necessary nor expedient to put the seed in the soil while the frost is still in the ground, and keeping the surface in a damp state, unless, perhaps, where the soil is of a moory quality, that retains the frost until the summer is advanced. We do not think, from present appearances, that grass land has suffered much last winter, though, no doubt, it would have been better for it to have had a covering of snow, as in other winters. Vegetation is backward, considering the fine weather we have had. This, we conceive, is owing to there being scarcely any rain up to this time. The meat market is well supplied for the season, but prices are high, as they are in all other places. Butter is to be had at moderate rates in proportion to other produce. The grand effort of farmers now should be to do everything in *their* power to ensure good crops.

The season, of course, will have a great influence, but when we do our own part properly, the seasons are not often unpropitious. There is another difficulty which many have to encounter—the want of sufficient capital to employ labour to execute all the necessary work properly. This is a great draw-back to our agriculture, and an insurmountable bar to improvement in numerous instances, and not likely to be remedied very soon.—*25th April.*

We beg to remind subscribers to this Journal that it would be desirable the trifling amount of subscription should be paid as soon as possible, as the expenses of collection in the country places would amount to, perhaps, half the subscriptions. Subscribers residing in the same neighbourhood might forward their subscriptions together in one letter, and save some postage by this means. All letters addressed to the Secretary should be post-paid, and we trust the subscriptions will all be paid up before the end of May.

We beg to acquaint the members of the Lower Canada Agricultural Society that the Council have arranged with their Seeds-man, Mr. George Shepherd, to furnish for the present, apartments in the building occupied by him as a seed store, opposite the City Hall, Notre Dame Street for the Society's meetings, for a Library and Museum. The Secretary of the Society will attend at the place on Tuesdays and Fridays from eleven to one o'clock, from the first of May next, for transacting any business connected with the Society or the Agricultural Journals.

The Council presume that many friends to Agricultural improvement may be disposed to contribute works on Agriculture, to furnish their Library, and such favors will be thankfully received and acknowledged. Agricultural implements sent as specimens, will be received in the Museum for exhibition, and any orders that may be received for implements shall be sent to the owners of the implements.

In the last number of the Farmers' Gazette, published in Dublin, the following reply is made to a query as to the "quantity of milk, per day, yielded by a cow?"—

"Cows in full milk with us vary in produce, daily, from ten to thirty quarts. Cows of a medium size and ordinary appearance, without much *breeding*, produce the latter quantity, whilst others, called *highly-bred*, of an immense size, beautiful in appearance, and consuming twice the amount of food, in some cases, produce even less than the former quantity." The conductors of the "Farmers' Gazette" are practical and extensive farmers in the neighbourhood of Dublin.—[EDITOR OF AGRICULTURAL JOURNAL.]

From the same paper we take the following:—

"A County Westmeath farmer writes:—'Be so good as to inform me whether the *same quantity* of milk will give a *quart of cream*, as will produce a pound of butter?' The quality of milk will have much influence as regards the quantity of butter that may be produced. As an example—we have more than once known a cow to produce 20 quarts of milk, daily, on which there was a produce of butter amounting to 10 lbs., weekly, whilst other cows, producing 30 quarts of milk, daily, did not produce over 5 lbs. of butter, weekly."

We believe that Canadian cows, selected with skill, and properly kept in winter and summer, will yield more butter, in proportion to the milk they produce, than any other breed of cows in this country. In any attempt to improve the Canadian breed of cattle, the bulls selected for this purpose, should not, at the first cross, be of a very large size.

FLAX.—We give insertion to an article sent us on the cultivation of Flax. We have always considered the cultivation of Flax and Hemp should be encouraged with a view of increasing the quantity and value of our produce for exportation. Under the present circumstances of the country, with our thin population, the most prudent use we could make of these products would be to prepare them for exportation. The time may arrive when it would be proper to manufacture the articles here, but we believe it is not the present. To

prepare hemp and flax for exportation, mill machinery is essentially necessary. We give in this number a description of a large vat used for steeping flax. It would be a very suitable appendage to a flax mill, but rather expensive for a farmer. If farmers had pits for steeping flax, and filled them up as our correspondent suggests, it would doubtless be a good plan. But without making use of the steep water, we are convinced flax and hemp might be profitably grown to a certain extent, and with great profit, if properly cultivated. As to the seed, we should think it would be all consumed in Canada for the feeding of stock; the balls containing the seed, when dried, ground up with the seed, and thus prepared for cattle. This mode would vastly increase the quantity, and it is found that the balls make excellent food. The whole is prepared by boiling, as the seed is when separated from the balls. We have never seen in this country one acre of land properly cultivated for producing a good crop of flax, and without suitable cultivation it would be anything but a profitable crop to the farmer.

We copy the following article, on Model Farms, from an excellent paper, "The Irish Agriculturist," published in Belfast. The plan suggested would be as suitable for us as for the people of Ireland. We conceive that any information on this subject should be submitted, in order to enable us to adopt a perfect plan, as it would be better not to attempt the establishment of Model Farms, if not upon such a plan as would answer fully the purpose proposed:—

We think, then, that the great leading features of an agricultural model farm should be profit and publicity. With respect to these, we are not aware to what extent they have been observed on those few model farms already established in this country; but they obviously lie at the very foundation of their existence and usefulness. As to the former, we do not mean self-supporting farms, understanding by that phrase a farm which merely keeps itself afloat; we mean that the model farm shall make an actual yearly profit, greater than that which is made on a farm of the same extent, and in the same locality, cultivated

on an unimproved system, and that plans be taken to make the amount of this profit and the fact itself universally known. It is admitted, that Irish farmers, taken as a body, are not only ignorant of their profession, but singularly apt, in their desire of clinging to old systems, to catch at any errors or failures in the new; to attribute these rather to the possibility of new plans being successful, than to any mismanagement, or want of judgment being exhibited in their details. We have frequently heard, when urging on small farmers the necessity of growing roots to feed their cattle, the reply, that it was not difficult for persons with money to do so, but that, in their opinion, they cost more than they were worth, alluding to the labour, the perfect cleaning of the ground, the early and late attention to weeding and hoeing, which are needed and essential, but all which the experienced agriculturist knows are amply repaid. It is also an observation, sometimes made by the same class of persons, when a model farm is spoken of that it is an easy matter to make good work in an establishment of such a kind, because money comes from Dublin to do it, or the landlord keeps it up, or all the gentlemen of the country contribute to its support. We think, therefore, that to extinguish, to put an utter end to such objections and prejudices, to leave such persons, in fact, not the shadow of an argument to cling to, that it should be shewn, by indisputable facts and figures, that the model farm is more profitable than their own; that everything is charged,—rent, taxes, labour, seed,—to the very utmost, and that a considerable profit remains. This is our idea of one of the essentials of a model farm, and we consider that if it be not based on the principle of making money, it can be no model for imitation, and the sooner it is abandoned the better. Publicity, also, should be gained by publishing yearly, and circulating extensively in the district, a strict balance-sheet, exhibiting the proceedings of the farm in such a form as to be easily understood, charging, on one side, every item of cost or expenditure, even the labour of the boys or pupils in the school, and shewing on the other the amount of produce obtained, and the prices at which it was sold. If it were nothing more than an example of farm book-keeping, in which Irish farmers are generally very deficient, this would be a useful and important measure. It should, also, be stated in this balance-sheet or report, that any farmer in the district who doubted its accuracy, or who wished for additional information respecting its details, would be entitled to claim such information from the superintendent of the farm, who should be bound to submit to any scrutiny for that purpose, and patiently to afford answers and explanations to the several inquiries.

It is also desirable, that a model farm should be in such a locality as would be most useful, or, in other words, be a model for the greatest number of farms. For this reason, it would not be

advantageous to have it near a town, but out at a distance in the country, surrounded on all sides by those similar farms which were to be benefited by its example. Neither should the best land in the district be selected for the purpose, but as nearly as possible that of the average quality of the neighbourhood; nor, even if offered, should it be taken at a lower rent than its full letting value, as such a procedure would defeat the object in view, by giving ground of complaint, that the model farm possessed advantages peculiar to itself. We have also a strong opinion as to the necessity of placing some model farms in some very unimproved districts, in which agriculture is the very lowest ebb, such districts being, we fear, more numerous in the country than is generally apprehended. We have known several cases of persons who had been farm-servants in England and Scotland, where they had not only seen, but had actually themselves practised the improved methods of culture, settling in small farms in such places. They were anxious, at first, to practise, on their own little holdings, the system they had elsewhere been accustomed to, and of the advantages of which they were fully convinced. They soon ceased to do so—because, in fact, “more Irish than the Irish themselves,” so difficult is it for a solitary individual long to retain practices or opinions opposed to those of the great mass by which he is surrounded. Now, an agricultural model farm could not suffer from such a cause, in an unimproved district, but would have a sustaining power, and would be carried on with a steady perseverance, certain at length to lead to a favourable result. We would also suggest, that on every model farm some little expense might be gone into in forming a good garden, and planting a few trees for ornament. The place, in fact, should be made one which the inhabitants of the surrounding district would delight to visit, which they should, by all means, be encouraged to visit, by which a taste and desire for imitating it would gradually be created.

In connexion with this, however, there is another consideration to which we think fit to draw attention. It is a rule laid down, we believe, by agricultural writers, that the sunk capital of a farm, that is, the money expended on the house and offices, should not exceed three years' rent of the farm itself. We consider the rule a just one, though, perhaps, not capable of being strictly adhered to in all cases. In instituting a model farm, therefore, some caution should be exercised not to overstep too far what seems a fair and necessary adjustment of farming capital, for if buildings are erected at an expense greatly beyond this prescribed limit, the farm, it is possible, might have to bear a burden, in the shape of interest for sunk capital, that would swallow up too much of the profit, and in so far affect its usefulness. If not so charged, indeed, the objection might assume another form; farmers of a prejudiced and uncalculating turn of mind, perhaps laying the

superior productiveness of the model farm in some measure to the account of accommodations and extraneous advantages, not possessed by themselves. Nor do we conceive any great necessity exists for extensive school building. The science of agriculture must, undoubtedly, be taught, and a general literary education imparted; but the great school of the pupils in the establishment would be the active operations of the farm; the field, the garden, the cattle houses, are the places in which the most important part of their education is to be acquired.

By the foregoing observations it must not be thought that we have lost sight of the necessity of the study of agricultural chemistry. The competent teacher of an agricultural model farm must be thoroughly grounded in scientific knowledge, and competent to impart it to his pupils; their character as agriculturists, and their success in their pursuits in after life, being greatly dependent on an early and intimate acquaintance with the science of their profession.

On the choice of the manager of a model farm, its success must, in a great measure, depend. From none but a skilful, practical, and scientific agriculturist could success be hoped for, accompanied with a genuine taste for the pursuit, the most strict economy, and the most untiring perseverance. All these qualities, we know, will be difficult to procure, but without them failure will certainly ensue. We had intended to offer a few suggestions as to the arrangements to be made for the remuneration of managers, but will probably resume the subject on some future occasion, when we hope to be able to report favourably on the progress which this important question shall have made in public opinion.

In the field, air is incessantly in motion; even when not a breath seems to move over the surface of the turnip crop, streams, laden with the food which heaven provides, are flowing in all directions, bathing the leaves, and penetrating to the roots, wherever a pore can be found in the soil. Should it not, therefore, be the care of the farmer to remove every obstacle to their free progress? Diligently should he stir up the soil, and with the fork and subsoil plough open new channels for the fertilizing current. It was by such means that old Tull used to reap twelve successive crops of wheat from the same land, without applying manure; and though we condemn his system of cropping, yet his success should encourage a more thorough working of the soil than we are accustomed to practise. The plough and the horse-hoe of the old English farmer minutely divided the particles of the soil, allowed to the air everywhere to penetrate to his crops, so as to give them food, and to cook for their use the matters of the field. Let the farmer and the gardener, therefore, give their plants air, if they would have them thrive. Confine a man to a close apartment, and his health fails; shut up a plant in a badly-

ventilated hothouse, and it ceases to flourish. The gardener knows how poor, in colour and flavour, are the fruits of a close, ill-managed hothouse, compared with those grown in the open air, and allowed to quaff deep draughts of the pure and ever-moving stream. Air, abundant air, we repeat, is necessary to the healthy existence of both plants and animals; yet, how many of our gardeners, who should be better informed, suffocate their plants with mats, and other contrivances, when a free current of air, a free supply of food should be allowed. How many of our farmers squeeze up, in a small space, their green crops, which live so much in the air. They treat them like the monkeys in the close cages, and the consequence is, that many of them die; or like the children brought up in the miserable garrets and cellars of our ill-ventilated, crowded cities, are rendered poor, and half-developed. Let any one compare the poor, starveling, suffocated turnip, produced in the hard, badly-worked soil of the careless husbandman, with the noble bulb, of portly dimensions, grown by the farmer who knows that his crops, as well as his cattle, require air.—
Irish Agriculturist. A SOWER.

A late writer on the agriculture of the countries which border the Rhine has given an account of the management of an Agricultural College, in the neighbourhood of the fashionable baths of Wiesbaden, in the Duchy of Nassau, which cannot but prove interesting to our readers

"The manager of this College, M. Albrecht, is a gentleman highly respected for his scientific acquirements, and indefatigable in discharging the duties he has undertaken. A walk up to the Geisberg will well repay the visiter to that fashionable watering-place, especially in the Summer and Autumn, when he will find, in the experimental farm, the most interesting varieties of cultivation collected together, from numerous districts. The origin of the farm is no less interesting than the results obtained by the comparatively small means at its command. The chief funds consist in the subscriptions of the members of the Agricultural Society of the Duchy of Nassau, the contributions to which are rated so low as not to debar almost the poorest from joining. Five shillings per annum, collected from about 1,500 members, with some other sources of revenue, suffice to pay the interest on the purchase-money of the farm, to keep it at work, and to publish a weekly journal, containing useful agricultural intelligence. The other sources of revenue consist in the sale of the produce of the farm, which is not of much moment, as the experiments are of course not all suited to the wants of the neighbourhood. Attached to the farm is a seminary, in which lectures are held, that have a bearing on agriculture. Natural history, mineralogy, botany, zoology, the theory of agriculture, and technology, besides veterinary surgery, and agricultural book-

keeping, form a course that is completed by students easily in three Winter half-years. The Summer they are recommended to spend on some farms, where they can learn the practice of husbandry. Natives of the Duchy have free instruction at this College, in consideration of a yearly addition to its revenue, granted by the State. Strangers pay 44 florins (about £4,) for the half-year's instruction, which is conducted by highly-qualified Professors. The grounds are divided into portions, on which the agricultural systems of England and Flanders, Mecklenburg, Holstein, and the improved ordinary village course are followed, and the results thus made intelligible to the scholars. Irrigated meadows form one part, and a garden and nursery another part of the grounds. A third, adjoining a public walk, is devoted to experiments on various seeds and plants, hops, vines, &c. The buildings join a spacious farm-yard, although only milch-cows are kept, the labour being all done by contract. The slender fund of the Agricultural Society still suffices to afford a distribution of prizes to agricultural servants, for good conduct, and to keep up a small collection of models, and a library. A veterinary Hospital is kept in one part of the buildings, to which the farmers of the neighbourhood and the people of the town resort. The influence of the establishment has been great; chiefly because the Government has made it the direct organ for encouraging improvements. The Director, M. Albrecht, is not only encouraged to suggest improvements, but has been employed as commissary, for years together, in the carrying out a grand plan formed for improving the state of the heights of the Westerwald. The brooks and little streams of a large district in those mountains have been united, where practicable, and led into situations that allow them to overflow and irrigate a large extent of meadow land, in the fashion of the meadows of Siegen. Besides the meadows attached to the farm, there are others near Wiesbaden which bear testimony to the gain resulting from the small exertion required to let the water run over the land occasionally."—*Irish Agriculturist*.

TEMPLEMOYLE AGRICULTURAL SEMINARY.

To the Editor of the IRISH AGRICULTURIST.

SIR,—The Agricultural Seminary of Templemoyle is distant, east north-east from Londonderry six miles, from Newtownlimavady about eight, from Muff one, and from the mail-coach road, leading from Belfast to Londonderry, a mile and a-half. Its situation is, in every respect, favourable to the purposes for which it was intended, being elevated about one hundred and eighty feet above the level of the sea, and isolated as it were from everything that could tend to direct the attention of the pupils either from their literary or agricultural pursuits. It commands a

beautiful view of Lough Foyle, of the Ennishowen Mountains, of the Benneyvenagh Mountains,—a precipitous basaltic range which terminates abruptly near Magilligan Point, and of the village of Muff. The plantations of the Grocers' Company, also, tend to heighten the beauty of the landscape, and deck with trees the rugged sides of Muff Glen. The plan originated with the members of the North-West Society, in the year 1827, and who contributed, in shares of £25 each, about £3,000 towards its establishment. The Grocers' Company, the landlords of the estate, also, advanced the sum of £1,200. The house and offices were then built, at an expense of £2,400; since that period the Committee of Management has erected considerable additions to both, thereby enabling it to accommodate a greater number of pupils, and, consequently, to promote, to a greater extent, the objects of the institution—skillful and widely-diffused agriculture. In making these additions, the Committee was not actuated by motives peculiarly local, as it is considered, from the fact of so many young men coming to study, from almost every County in Ireland, that it partook a national character. The Committee, therefore, appealed, with success, to all those who had the agricultural and true interests of this country at heart. The house consists of two school rooms, of which No. 1 is 40 feet long, 21½ wide, and 15 high; No. 2, 21½ feet long, 21½ wide, and 15 high. Five dormitories, of which No. 1 is 40 feet long, 21½ wide, and 15 high; No. 2, 40 feet long, 21½ wide, and 15 high; No. 3, 35 feet long, 16 wide, and 14 high; No. 4, 23 feet long, 21½ wide, and 15 high; No. 5, 21½ feet long, 21½ wide, and 15 high; the whole containing 85 beds, each pupil having one for himself. A dining-room, 45 feet long, 15½ wide, and 15 high; and other rooms for the use of the Committee, for the different masters, matron, &c. &c.; besides a kitchen, a store-room, and other requisite apartments; and, as offices, two large rooms for pupils' boxes, lumber rooms, wash-room, hospital, dairy, agricultural museum, head farmer's office, stables, harness-room, barn, cow-houses, tool-house, and piggeries.

The farm consists of 172 Statute acres, has a north-easterly aspect, and rises gradually to the height of 312 feet. The soil is a thin retentive clay, resting on a micaceous gravelly clay subsoil. From these unfavourable circumstances, the Committee has to contend with many great difficulties and pecuniary outlay, and is obliged to have recourse to draining, subsoiling, &c., &c., as much as the funds of the institution will permit, thereby affording a valuable lesson to the pupils. The farm is under the management of a head farmer, who is assisted by a second farmer, selected from the more advanced pupils, a ploughman, and a gardener. The system of cropping adopted on the farm is the four and five-shift rotations, 45 Statute acres being under the four-shift, and 118 Statute acres under the five-shift.

The arrangements for instruction are ample. The literary department is under the superintendence of a head master, who has under him two assistants. The pupils are taught English grammar, geography, arithmetic, mensuration, book-keeping, geometry, trigonometry, (plain and spherical), algebra, use of the globes, use of the theodolite, water level, chain, mapping, land surveying, geology, as applicable to agriculture and botany.

As the primary object of the institution is to make the young men practical, and so far as is consistent with the funds of the seminary, scientific farmers, the pupils learn to perform the various manual operations of the farm, while they are brought home to their comprehensions by the head farmer, who comes into the school-room in the evenings, and renders anything not previously understood intelligible. It is much to be regretted, that the funds of the institution are so low as to prevent it from having the assistance of a practical chemist, to direct the attention of the pupils more properly to the advantages which chemistry is calculated to point out to the farmer. Notwithstanding this loss, it is highly gratifying to find, that numbers of the young men, who are educated here, possess, from self-application, a considerable knowledge of agricultural chemistry. I trust, however, that the seminary will obtain that support which it truly merits, and which would enable it to keep pace with the growing intelligence of the times. I have not the slightest dread in asserting, that, if it had the service of a chemist, joined to those of its present superintendents, that it would *very far* excel all others in practical utility, hitherto established in Ireland. There can be no more convincing proof of the services which it has rendered this country, in an agricultural point of view, than the numbers of young men who have left it, and obtained situations, as agents, assisting agents, land-stewards, &c. &c. These are now generally giving satisfaction to their employers, and, by their abilities, are maintaining the high reputation of the institution in which they were educated. But the usefulness of the Templemoyle Seminary has not been confined to those parties who have directed their attention merely to agriculture, for numbers of the pupils, after having gone through a regular course of draining, are now filling responsible situations, such as County surveyors, engineers, land surveyors, &c. &c.

I need not, I presume, acquaint you, that the seminary is supported by an annual fee of £10 from each pupil, and by the produce of the farm. The natural consequence, resulting from the many advantages which an education in the Templemoyle Seminary presents, is an increasing demand for admission; numbers are obliged to be on the Secretary's books for upwards of a year, before a vacancy can be procured for them at the seminary.

At present, the number of young men who are studying at it is about 82.

The very great improvements which have taken place on the Templemoyle Farm, cannot fail to strike the most superficial observer; and, notwithstanding the badness of the soil, the still worse sub-soil, and the elevation of the farm, the Committee has been enabled to demonstrate to the pupils, and to the surrounding farmers, the happy results of skilful husbandry. The example which the Templemoyle Model Farm has set has been attended with the most salutary effects on the neighbourhood. The more intelligent farmers are beginning to attend to a regular rotation of cropping, and casting away the old and heart-breaking system of tillage—corn crop succeeding corn crop. Though the intelligent part of the farmers are steadily pursuing this course, it is to be exceedingly regretted that numbers of the less intelligent are still persisting in their wretched old system of agriculture; shutting their eyes, as it were, to the benefits which their more wise brethren are receiving from the soil, and living in dirt and poverty when they might live in cleanliness and comfort on their farms, if properly conducted. But we can never fully estimate the influence which the operations of the Templemoyle Institution have had on any particular locality, scattered, as its pupils are, over every part of Ireland, and even the colonies: it is, however, to be hoped, that they are now putting in practice, what they saw carried successfully into effect at Templemoyle.

I trust, Sir, that we are on the eve of a more happy epoch in the agricultural history of our country, and that a better system of agriculture will speedily supersede the ruinous one so long established throughout the greater part of Ireland, and be attended with the wished-for results. Indeed, Sir, when we consider the extreme ignorance of the parties, and the fact of its being handed down to them from their progenitors, we cannot feel much astonished at their reluctance in relinquishing it. The great anxiety of the Government to have the people educated and instructed in agriculture, will, under God, be the means of dispelling the gloom of ignorance whereby their minds are enveloped, and enable The Royal Agricultural Improvement Society of Ireland,—The Chemico-Agricultural Society of Ulster,—The Royal Flax Improvement Society of Ireland,—The Templemoyle Agricultural Seminary, and all such kindred societies and institutions to carry their operations more fully into effect.—I have the honour to be, Sir, yours, respectfully,

HUGH BOYD.

—Templemoyle Agricultural Seminary.

CAUTION IN APPLYING SALT TO FRUIT TREES.
—Common salt may be scattered on the surface of the ground at the rate of 300lbs. per acre, with perfect safety, so far as vegetables are concerned; but it is a dangerous substance to apply to fruit trees.—*Gardener's Chronicle.*

OF THE RESIDUES OF DIFFERENT CROPS.

The vegetable matter which is produced in the course of a season, is never found entirely in the crop. A certain quantity of it, for instance, always remains in the ground. It is, therefore, a point of interest to ascertain what quantity of elementary matter is left in the soil after each kind of crop in the rotation; precise knowledge of this description may even be important in calculating rotations, for it is obvious that the remains of the crop now on the ground must influence that which is to follow, and in the course of a rotation, the sum of the residuary matters must be regarded as a supplement or addition to the manure put into the ground at its commencement.

In the systems of rotation very generally followed at the present time, the influence of these residuary matters is manifest, and it is partly by this means that we can explain how a quantity of manure, frequently very moderate, should suffice for the whole of the crops in a productive rotation. The remarkable effect of clover has not failed to arrest attention even from the most unobserving. The wheat crop which comes after our drill crop, in Alsace, best of potatoes, average from 18 to 20 bushels per acre; but the wheat crop that succeeds our clover averages from 23 to 26 bushels per acre.

"The improvement of the soil, so obvious, in connection with clover, in all probability, also occurs, in connection with the residues of other crops; but as, in most instances, the residues merely compensate the loss, or lessens its extent, the effect produced is less remarkable, and is less, indeed, in amount. All the world acknowledge, then, that the residues of the crops that enter into a rotation, compensate, in a greater or less degree, for what is carried away in the shape of harvest, and that in some cases they even add to the fertility of the soil, for in growing crops they have a large quantity of residue; it is precisely as if a similar quantity were taken from a given extent of surface.

"Here follow tables, showing the results of several experiments made with potatoes, field-beet, wheat, clover and oats. The article then concludes:—In the five years' rotation, it may be observed that there are two crops—the head crop and the forage crop—which yield substances to the ground, that are both abundant in quantity and rich in azotized matter, and it is unquestionable that these crops are favourable to the cereals that succeed them; but data are wanting for the appreciation of their specific utility to the general rotation. We see, for instance, that despite the large proportion of residuary matter left by the beet or *mangel-wurzel*, this plant lessens considerably the produce of the wheat crop that comes after it. The potato, though it leaves much less refuse than the beet, seems, nevertheless, to act less unfavourably than this vegetable.

Clover leaves more residue than the potato, and on this ground alone, ought to favour the cereal that follows it; but it has a favourable influence out of all proportion with its quantity, contrasting this with the residue of either of the head crops: a fact from which we learn that the visible appreciable influence of the residuary matters of preceding crops, upon the luxuriance of succeeding crops, does not result solely from their mass, even supposing each to be possessed of equal quantities; this other additional effect, especially, depends upon the influence exerted on the soil by the crops which leave them. Had these crops been powerfully exhausting, we should expect that their refuse or residue, however considerable in quality, could do no more than lessen the amount of exhaustion produced, in which case, its useful influence, however real, would pass unnoticed, were it estimated by the produce of the succeeding crop. If, on the contrary, a crop has been but slightly scourging, whether in consequence of the smallness of its quantity, or because it may have derived from the air the major part of its constituent elements, the useful influence of the residue will not fail to be conspicuous. When the relative value of the different systems of the rotation is discussed in the way we have done, we, in fact, estimate the value of the elementary matter derived from the atmosphere by an aggregate of crops; but the procedure generally followed is silent when the question is to assign to each crop in particular the special share which it has had in the total profit. To reply to this question, of which a knowledge of the various residues is one of the elements, we must first ascertain the quantity of elementary matter supplied by the soil and the atmosphere, with reference to each of the crops which enter into the rotation; in other words, the same investigation must be undertaken, in reference to each plant considered by itself, that have been made relative to the series collectively."

The whole of this article, on rotations, is most interesting, and we shall refer to it again. The conclusion the author comes to is as follows:—

"It may be inferred from the foregoing, that in the most frequent case, namely, that of arable lands, not sufficiently rich to do without manure, there can be no continuous cultivation without annexation of meadow; in a word, one part of the farm must yield crops without consuming manure, so as to replace the alkaline and earthy salts that are constantly withdrawn by successive harvests from another part."—*Boussingault*.

What the author means by "meadow" is land under grass, producing food for stock both in summer and winter, that will give manure for maintaining the fertility of the land kept in

able culture. The lands of Canada are most suitable for clover, and a due proportion of this crop should be on every farm, as a means of promoting the improvement of the whole of the land. It will check the growth of weeds, and yield a large amount of provender for stock, without diminishing the fertility of the farm. Of course, the soil would require to be in a clean state when sown with clover; but if the clover once take root properly, it will soon prevent the growth of weeds. Clover having very large roots, if sown very thick, will leave a large quantity of residue in the soil when ploughed up for other crops. When sown without mixture of any other grass seed, from 5 to 12 lbs. of seed is necessary to the acre. We strongly recommend farmers to cultivate more of this plant. After land has been properly summer fallowed, it will be in the very best condition to produce clover sown with the first crop. Each of these means of improvement is in the power of almost every farmer, and no better can be adopted, under the circumstance of our country not being suitable for a very extensive cultivation of turnips.

COTTAGE HUSBANDRY IN BELGIUM.

In the greater part of the flat country of Belgium, the soil is light and sandy, and easily worked; but its productive powers are certainly inferior to the general soil of Ireland, and the climate does not appear to be superior. To the soil and the climate, therefore, the Belgian does not owe his superiority in comfort and position over the Irish cultivator. The difference is rather to be sought for, in the system of cultivation pursued by the small farmers of Belgium, and in the habits of economy and forethought of the people. The cultivation of the small farms in Belgium differs from the Irish—first, in the quantity of stall-fed stock which is kept, and by which a supply of manure is regularly secured,—second, in the strict attention paid to the collection of manure, which is skilfully managed,—third, by the adoption of a system of rotation of five, six, or seven successive crops, even on the smallest farms, which is in striking contrast with the plan of cropping and fallowing the land prevalent in Ireland. In the farms of six acres we found no plough, horse, or cart; the only agricultural implement, besides the spade and wheel-barrow, which we observed, was a light wooden harrow, which might

be dragged by hand. The farmer had no assistance, besides that of his wife and children, excepting, sometimes, for a short period, in the harvest, when we found he occasionally hired a labourer at a franc (tenpence) per day. The whole of the land is dug with a spade, and trenched very deep; but, if the soil is light, the labour of digging is not great. The stock, on the small farm which we examined, consisted of a couple of cows, a calf or two, one or two pigs, sometimes a goat or two, and some poultry. The cows are altogether stall-fed on straw, turnips, clover, rye, vetches, carrots, potatoes, and a kind of soup made by boiling of potatoes, beans, pea-se, bran, cut hay, &c., into one mess, and which, being given to the cattle warm, is said to be very wholesome, and to promote the secretion of milk. In some districts, the grains of the breweries and distilleries are used for the cattle; and the failure of the Belgian distilleries has been reckoned a calamity to the agriculture of the country, on account of the loss of the supply of manure, which was produced by the cattle fed in the stalls of these establishments. The success of the Belgian farmer depends, mainly, upon the number of cattle which he can maintain, by the produce of his land, the general lightness of the soil rendering the constant application of manure absolutely necessary to the production of a crop. The attention of the cultivator is always, therefore, especially directed to obtain a supply of manure. Some small farmers, with this view, agree with a sheep-dealer to find stall-room and straw for his sheep, to attend to them, and to furnish fodder at the market price, on condition of retaining the dung. The small farmer collects, in his stable, in a fosse lined with brick, the dung and urine of his cattle. He buys sufficient lime to mingle with the scourings of his ditches, and with the decayed leaves, potato-tops, &c., which he is careful to collect in order to enrich his compost, which is dug over, two or three times, in the course of the winter. No portion of the farm is allowed to lie fallow; but it is divided into six or seven small plots, on each of which a system of rotation is adopted; and thus, with the aid of a sufficient quantity of manure, the powers of the soil are maintained unexhausted, in a state of constant activity. The order of succession in the crops is various; but we observed, on the six-acre farms, which we visited, plots of potatoes, flax, rye, carrots, turnips or parsnips, vetches and rye, for immediate use, as green food for the cattle. The flax grown is hackled and spun by the farmer's wife, chiefly during the winter; and we are told that three weeks' labour at the loom, towards the spring, enables them to weave into cloth all the thread thus prepared. The weavers are generally a distinct class from the small farmers; though the labourers, chiefly supported by the loom, commonly occupy about an acre of land, sometimes more, their labour upon the land alternating with their work at the loom. In some dis-

tricts, we are informed, every gradation in the extent of occupancy, from a quarter or half an acre to the six-acre farm, is to be found; and, in such cases, more work is done in the loom by the smaller occupiers. The labour of the field, the management of the cattle, the preparation of manure, the regulating the rotation of crops, and the necessity of carrying a certain portion of the produce to market, call for the constant exercise of industry, skill, and foresight, among the Belgian peasant farmers; and to these qualities they add a rigid economy, habitual sobriety, and a contented spirit, which finds its chief gratification beneath the domestic roof, from which the father of the family rarely wanders in search of excitement abroad. It was most gratifying to observe the comfort displayed in the whole economy of the households of these small cultivators, and the respectability in which they lived. As far as I could learn, there was no tendency to the subdivision of the small holding; I heard of none under five acres, held by the class of peasant farmers; and six, seven, or eight acres, is the more common size. The provident habits of the small farmers enable them to maintain a high standard of comfort. Their marriages are not contracted so soon as in Ireland; and the consequent struggle for subsistence among their offspring does not exist.—*Nicholl*.

AGRICULTURAL LIBRARIES.—Of all the varied occupations and pursuits of man, that of Agriculture requires the most study and research. The mechanic, after he has learned the use of tools, and a few certain rules, which always produce the same results, is master of his trade; he forms his creatures and they retain their shape; he knows what effect each blow or effort will produce. How unlike the science of agriculture: a man, in order to become a good practical farmer, must devise means in order to keep a portion of the vegetable and animal kingdom in existence, and multiply their products to the greatest extent; and to destroy or retard the growth of such as would be injurious. The farmer should study the laws of nature, and the effect that certain causes will produce; hence, the successful farmer requires more book, as well as practical knowledge, than the mechanic. As far as books are concerned, the farmer should profit by the example of those who follow the various professions. The lawyer who ever expects to become eminent or successful in practice, must not only carefully study the general principles upon which the laws of nations are founded, but make himself acquainted with the laws of the country or state in which he practices, as well as the decisions of the superior courts. It is no less necessary that the farmer should study the laws that govern the vegetable kingdom, and keep himself familiar, by attentively reading a good Agricultural paper, with all the improvements that are being made in the various modes of culture, the application of manures, the

improvements in farming implements, and new inventions, the introduction of imported stock, &c., &c. The Physician must study years before he is allowed to practice; and, then is behind the age, unless he receives a weekly or monthly medical journal, reporting the new diseases that make their appearance, and the new and different remedies applied to each. By looking over the long list of diseases that the farmer's field-crops, his garden, his fruit-yard and orchard, his horses, cattle, sheep, swine, and poultry, are liable to, all must admit that the farmer's library should be well supplied with books and periodicals, describing new diseases and giving the remedies. It is gratifying to know that there has been a great change brought about, within the last few years; the term "book-farming" is not, as formerly, a by-word—farmers are seeking information relating to their business, and science is lending her aid in advancing the general prosperity, by elevating the Agriculturist. Many valuable books and periodicals have been published; and it is hoped, that every farmer will, at least, add some one of them to his library, as well as to subscribe for and read *The Cultivator*, or some other periodical advancing their interest. While upon this subject permit me to suggest to the different County Agricultural Societies, the propriety of offering a premium, at their next fair, for the best Agricultural Library. If our farmers will but read and reflect, it will teach them what they are and what they should be. Let knowledge and labour go hand in hand, and then the practical farmer will feel that he approaches nearest to fulfilling the design of his Creator—that he can, and should be, emphatically, "the noblest work of God,—an honest man."—*Transactions of the New York State Agricultural Society*.

PARIS.—The Agricultural Congress held its second sitting on Wednesday, M. Gasparin in the chair. Messrs. E. Lefebvre and Perrot informed the meeting of the decree of the Provisional Government, instituting a permanent commission at the Luxembourg to regulate the interests of French Agriculturists. This decision was hailed with expressions of great satisfaction by the members present, and it was voted that the members of the bureau should proceed on Monday to the Hotel de Ville to thank the government, and to express a hope that several of the members should be included in the commission. M. Allier, the director of the school of Petit-Bourg, then proposed, first, that in the distribution of funds to be employed in the construction of national workshops, agriculture should not be forgotten; and next, that agricultural schools or colonies should be at once established for the education of poor orphan children. After some discussion, this proposition was referred to the committee appointed to express the wishes of the Congress. The question of agricultural credit was then brought forward, and gave rise to some discussion,

and eventually the Congress, by a vote, expressed a hope that the Republican Government would, as promptly as possible, utilize the mass of information collected relative to the question of mortgage, for the purpose of improving the present system. The sitting then terminated.

PRUNING.—Every cultivator of fruit should thoroughly examine his orchard and fruit garden, before he is interrupted by the approaching busy season. Those who have large trees should give them the necessary pruning. A slight trimming every year or two, is much better than the more frequent practice of heavy pruning after years of neglect.

The work should be done as early in the month of March as possible, that the wounds may become well dried before the sap flows. There is more judgment and care needed in pruning large trees than in any other part of their management. The operator should constantly bear in mind, that a neat, handsome head is to be preserved; that the best shaped and most thrifty branches are to be left; and that the light of the sun should be admitted as far as practicable to all parts of the tree. A thrifty growth of the branches will thus be kept up; and in connexion with good cultivation of the soil, the fruit will possess the large size, and fine flavor and appearance, so eminently desirable, and usually seen on young trees. The advantages of admitting the sunlight must be obvious to every one who has noticed the difference between the rich flavor of fruit fully exposed to the solar rays, and that which has grown under a thick mass of branches and leaves. Indeed, so important is this influence, that the exposed side of an apple is often found much richer in flavor than the shaded side—the rich acid of the *Esopus Spitzenburgh*, and the sugary sweetness of the *Tallman Sweeting*, are most strikingly observable under the dark red surface of the one, and brown sunny cheek of the other.

Large wounds made in pruning, should be protected by a suitable air-tight and water-proof coating, otherwise they will dry and crack, admit rain, and finally become diseased from decay. The cheapest good coating is a mixture of tar and brick-dust, applied hot; the best and neatest is a thick solution of gum shellac in alcohol, kept corked tight, and applied with a brush.

SUBSOILING.—Mr. Pusey, in a paper read before the English Agricultural Society, gives the following interesting account of the mode adopted, in the Flemish husbandry, of bringing up the subsoil, and gradually deepening the staple:—They dig trenches about a foot deep, over the field, from the bottom of which, assuming the soil to be 10 inches deep, they have therefore dug up two inches of subsoil, and as they proceed they fling the whole over each land, on which the seed has been previously sown, which they thus cover. The trench being shifted sideways each year, and the same process renewed, at the end of a certain number of years, two inches of the whole

subsoil will have been mixed with the upper surface, and the soil deepened by that amount. The same process is then repeated, two inches deeper. In this way, after four or five courses of trenching, the soil is brought to a depth of 18 or 20 inches of uniform quality.—*Journ. Royal Ag. Society.*

MANURE FOR WHEAT.—Mr. Way, consulting chemist of the Royal Agricultural Society of England, has analysed about fifty specimens of different sorts of wheat, and has come to the conclusion that an average crop of wheat takes out of the land the following inorganic substances:—

| | |
|-----------------------------|----------------------------|
| 84 lbs. of silica, | 6 lbs. of magnesia, |
| 20 lbs. of phosphoric acid, | 1 lb. of peroxide of iron, |
| 4 lbs. of sulphuric acid, | 23 lbs. of potash, |
| 8 lbs. of lime, | 1½ lb. of soda. |

It will be seen that the most important ingredients of wheat are phosphoric acid, and the alkalies, potash and soda. If these were returned to the land in sufficient quantity, the minor mineral ingredients, such as silica, lime, magnesia, iron, &c., would in the greater number of cases be supplied by the soil. The phosphoric acid would be most conveniently returned in bone dust, which contains from 50 to 60 per cent of the phosphates. The alkalies might be supplied singly in the shape of nitrate of soda or nitrate of potash (saltpetre). Guano is valuable, inasmuch as it comprises not only a large portion of phosphates and alkalies, but also is of great importance, particularly to the young plant, a considerable portion of ammonia. The principal organic substances are found to be carbonic acid and nitrogen, both of which exist in the air; but it is from the ammonia of decaying animal and vegetable substances that plants derive their principal supply of nitrogen, ammonia being composed of nitrogen and hydrogen. When a plant is burned, the organic portions fly off into the air, whilst the ashes comprise the mineral or inorganic ingredients. Ammonia was essential to the growth of wheat, and this might be supplied to lands which abound in all the mineral ingredients, in the shape of sulphate of ammonia, which might be manufactured from the liquor obtained from the gas works of every town.—*Ibid.*

HOW TO MAKE HENS LAY ALL WINTER.—Now that eggs are at 10d. a dozen, it may be of importance to farmers' wives to know how to make their hens lay all winter. The following directions, if attended to, will secure that object:—Keep no roosters, give the hens fresh meat, chopped up like sausage-meat, once a-day, a very small portion, say half-an-ounce a-day to each hen during the winter, or from the time the insects disappear in the fall till they appear again in spring. Never allow any eggs to remain in the nest for what is called nest-eggs. When the roosters do not run with the hens, and no nest-eggs are left in the nest, the hens will not cease laying after the production of twelve or fifteen eggs, as they always do when roosters and nest-eggs are allowed, but continue laying perpetually. My hens lay all winter.—*Correspondent of Gardeners' Chronicle.*

VEGETABLE MANURES.

The principal vegetable substances employed as manure are straw of all kinds, leaves, saw-dust, bran, oil-cake, sea-wood, and green manures, or crops which are merely sown to be ploughed in, and thus afford food to a second crop, of some more valuable plant.

All these manures when mixed with soil slowly decay, and yield carbonic acid and small quantities of saline and earthy matters. They are most advantageously used when employed in combination with some kind of animal manure; this is the case in farm-yard manure. Straw alone decays but slowly, but when mixed with the dung and urine of cattle it soon begins to change, and in a short time the whole is brought into a state of decomposition.

In this case a sort of putrid fermentation is caused; the animal manure decomposes rapidly, and causes a similar change to take place in the vegetable substances with which it is mixed; decomposition proceeds rapidly, heat is evolved, and if the bulk of the mixture is large, this action becomes so energetic that the value of the manure is seriously injured by the high temperature to which it thus exposed.

The decay of vegetable manures may also be facilitated by the addition of lime; for the objection which applies to the mixture of lime with animal manures is not applicable to the ordinary vegetable manures. The latter for the most part contain but little nitrogen, their value principally depending on their mechanical action, and on the formation of carbonic acid.

Vegetable manures decay more or less rapidly, in proportion to the quantity of nitrogen which they contain; green manures contain a notable quantity of gluten and albumen, and accordingly decompose rapidly, whilst sawdust, which consists principally of woody fibre, and contains hardly any nitrogen, decomposes slowly. Sawdust is therefore a most excellent substance to mix with the excrement of animals, and other strong animal manures.

Wood sawdust is valuable as manure in proportion to the facility with which it decomposes, and the inorganic matters which it contains; that obtained from young trees decomposes with more facility than the sawdust of old wood. The wood of those trees which contain much resin decays less rapidly than other woods, and is therefore not so valuable as a constituent of mixed manures. Those woods which when burnt yield a large quantity of ashes rich in alkaline salts, are useful additions in the state of sawdust to manures rich in ammonia.—*Rural Chemistry.*

HOW TO PREVENT THE BURNING OF CHIMNEYS.
—Fires in chimneys in France have recently been prevented by placing three frames of wire work one foot above each other, near the base of the chimney; no flame will pass them.

SCHENCK'S PATENT METHOD OF WATERING FLAX.

Dr. Hodges said, that, by the kindness of the patentee, Mr. Schenck, he had been several times allowed to inspect all the operations of watering flax, according to his new method, and had also made some experiments in Mr. Schenck's establishment. He believed the method proposed had received the warm approval of several extensive flax-growers, both in this country and England. He had no doubt that the method was an immense improvement upon the uncertain plan of the farmer, and it merely remained for the spinner to ascertain that the quality of the fibre was not injured. He was informed that some of the first merchants in Belfast had stated, that its strength was not impaired. He directed the attention of the meeting to two samples of flax, both of which had been grown in the same field; one had been treated according to Mr. Schenck's method, while the other had been watered in the old manner, the same water being used in both cases. The sample treated in the old plan was much inferior to the other, the yield being 20lbs. to the 112lbs., and spinning only 96lbs., while Mr. Schenck's flax gave 24lbs. to the 112lbs. of straw, and would spin on an average 101lbs. The samples exhibited were huddled and sorted by Reishaw, of Manchester. The following is Mr. Schenck's account of the process:—

“The improvement of the new rotting process comprises the application of chemical means, governed in their operation by mechanical arrangement, whereby the glutinous matter which connects the fibres together, and holds them to the stem, is dissolved. This is effected in a short time, at a small cost, and at all seasons of the year, without loss of the useful parts, by putrefaction on the one hand, or by an incomplete separation of the fibre from the woody matter, and also without any injury to the natural strength.

“This process is accomplished by placing the flax in vats, constructed for the purpose, which may be of any convenient size, but should be proportioned to about 50 feet in length to six feet wide, and never exceed four feet in height. They may be built of wood, or brick cemented. Along the bottom of the vat are placed cast-iron pipes, commencing at one end, and returning by a bend at the other, forming two parallel lines. These pipes are connected at one end with a steam-boiler, and are laid with a gradual slope, to allow the water of condensation to run off at the other or open end.

“Above these pipes is a wooden platform, perforated with small holes, to allow a free circulation of water. Upon the platform the flax is placed, in nearly a perpendicular position, with the roots down; above the flax is placed a frame work of loose pieces, which are placed across the vats, with the ends confined under a bracket, near the top of the vat, for the purpose of keeping the

flax from rising. The water is now to be admitted, when the vat is filled, and the plants entirely covered; the steam is turned on, and the water heated to the temperature of 90 degrees Fahrenheit. The heated water begins immediately to dissolve the glutinous matter, and within a few hours acetous fermentation commences. This speedily decomposes the gluten, abstracts the colour, and leaves the fibre state to be readily separated from the stem. After remaining in the vat about 60 hours, the vat is emptied by a sluice gate, and the plants taken out to be dried."—*Irish Agriculturist*.

EXPENSE OF TILLING ONE STATUTE ACRE OF PARSNIPS, ON CAPPOQUIN HOUSE FARM, IN 1847.

| | | | |
|--|-----|----|----|
| Subsoiling 16 inches deep, with spades. | £3 | 0 | 0 |
| 40 tons farm-yard manure..... | 3 | 10 | 0 |
| Picking stones with harrows..... | 0 | 5 | 0 |
| Ploughing and Harrowing..... | 0 | 5 | 6 |
| Drilling 27 inches apart..... | 0 | 2 | 6 |
| 1½ drawing out manure (from headland) | 0 | 3 | 9 |
| 3 men filling ditto..... | 0 | 2 | 6 |
| 4 men spreading ditto..... | 0 | 3 | 4 |
| 1 horse closing drills..... | 0 | 2 | 6 |
| Seed | 0 | 4 | 6 |
| 4 boys dibbling seed..... | 0 | 1 | 8 |
| Weeding for season..... | 1 | 0 | 0 |
| Raising crop with spades..... | 0 | 10 | 0 |
| Storing ditto..... | 0 | 6 | 3 |
| Rent | 1 | 10 | 0 |
| Taxes..... | 0 | 5 | 0 |
| 400 Wellington cabbages for failures, and planting same..... | 0 | 2 | 10 |
| | £11 | 15 | 4 |

PRODUCE.

| | | | |
|--|-----|----|---|
| Produce ascertained by weighing one cart-load, and taking the number of carts (the tops being quite withered when raised)—20 tons; now selling in Cappoquin market for 4 pence per stone, £2 13s. 4d. per ton..... | £53 | 6 | 8 |
| The cabbage planted in June proved an extraordinary crop, one head weighing 26lbs.; average weight of 400 heads, 14lbs., at 2d..... | 3 | 6 | 8 |
| | 56 | 13 | 4 |
| Deduct tillage, &c..... | 11 | 15 | 4 |
| Profit on one acre of parsnips, without taking the succeeding crop into consideration | £44 | 18 | 0 |

JOHN CLEMENTS,

Steward to Sir Richard Keene, Bart.

The present wet weather so much impedes the general digging, manuring, and cutting, that it is considered very detrimental to the future prospect, and should the wet season continue a week or two longer, it may be a very serious injury, particularly in the weald of Kent, and clay soils generally.—*Kentish Observer*.

COMPLETION OF THE COUNTY OF DOWN NATIONAL AGRICULTURAL SCHOOL, IN CONNEXION WITH A MODEL FARM OF NINE ACRES.—The want of an agricultural education, for the agricultural classes, had long been felt by the landed proprietors, the gentry, and farmers around Holywood; and after a lengthened negotiation with the Board of Education, and overcoming many difficulties which occurred in procuring a suitable site, the Provisional Committee published their prospectus in May, 1845. The result was a very liberal subscription, which has enabled them, with the grant from the Board, to complete a handsome building, at an expense of nearly £500. The establishment consists of male and female school-rooms, with suitable accommodation for a master and mistress, a dairy, laundry, piggery, fowl-house, &c. The Committee are using every means to procure first-rate teachers, when the schools will be immediately opened. The building stands within five minutes' walk of the rising village of Holywood, which will afford excellent accommodation for persons coming from a distance, until the additional arrangements are made to receive boarders, who will have every facility, by the new Railway, for attending Dr. Hodges' lectures and experiments on agricultural chemistry, at the laboratory, Belfast, a series of which will be adapted to agricultural teachers and pupils, at hours best suited to their convenience. The following extract from the prospectus will best explain the objects and expectations of the founders of the school:—"It is admitted by every person that those who are to live by farming should be instructed in its principles, and it is also admitted that our soil is capable of producing a much greater amount of food than it does at present, requiring only to be properly and scientifically cultivated. Towards accomplishing this most desirable end, it is proposed to establish a school on the same principles as the Larnoe school. The school will be in connexion with the National Board, and the system of instruction will combine an agricultural with a superior general education, and will qualify many to become agriculturists, land-stewards, teachers, &c., and lead, unquestionably, to a vast improvement in the tenantry of the country. In addition to the numerous other benefits which may result from such an establishment, those pupils who may distinguish themselves will have the privilege of being allowed to go for two years, without charge, to Glasnevin Institution, which supplies such a number of land-stewards for Ireland. Females will receive a good general education, and be instructed in useful needlework, in a separate school, by a properly qualified mistress, and also in the management of the laundry, dairy, and general housekeeping.—*Irish Agriculturist*.

PLOUGHING.—1st. The horses should be harnessed as near to the plough as they can be placed, without impeding the freedom of their step;

for the closer they are to the point of the draught, the less exertion will be required to overcome the resistance. 2nd. When ploughing with a pair abreast, the most forward and powerful horse should be worked in the furrow: but if the team be harnessed in line, and there be any difference in the height of the cattle, the tallest should be put foremost, if he be in every respect equal to the other. 3rd. When at work, they should be kept at as regular and good a pace as the nature of the work will permit; for they are thus more manageable, and the draught easier than when slow. By due attention to this, the heavy soil will also cling less to the coulter, and the land will be found to work more freely. 4th. The breadth and depth of the furrow being ascertained, the plough should be held upright, bearing equally all along on a straight sole, and be made to move forward in a regular line, without swerving on either side. The edge of the coulter should also be set directly forward, so that the land side of it may run on a parallel line with the land side of the head, and in such a position as that their slant or sweep may exactly correspond. 5th. The ploughman should walk with his body as nearly as possible upright, without leaning on the stilts, and without using force to any part further than may be absolutely necessary to keep the implement steadily in a direct line. He should also be sparing of his voice, and of correction to the team: of the former, because too much cheering and ordering only confuse the cattle: and of the latter, because punishment, when often repeated, at length ceases to have due effect, and thus leads to unnecessary beating.—*Agricultural Almanac.*

All who know anything in a manner that deserves to be called knowledge, will confess that however excellent the schools or seminaries in which they have been educated, the most important instruction is that which they have given themselves; he who would sit down content with his college or school acquirements would find them utterly unfitted for the varied purposes of active life; it is by continually adding to them that he is enabled to hold them fast in the progress of professional knowledge, science, and literature. The pleasure arising from the training of the mind is altogether distinct from every other pleasure; it pervades and electrifies the whole system, and inspires and renovates every superior faculty of the soul. Of all the species of knowledge which civilized man possesses or seeks for, there is none, perhaps, more calculated than the study of vegetable physiology to afford him enjoyment and improvement in all that can please, benefit and instruct. What delightful sensations spring from the contemplation of those cheering productions which nature has so beautifully and profusely scattered over the surface of the earth—what exertion and health it affords to the body, and what a source of indescribable delight it opens to the mind—what joy and instruction it leaves

behind—what a source of pure admiration and thanksgiving to him who “looks through nature up to nature’s God”—who sees in the clambering lichen which crowns the surface of the rugged rocks the same wisdom in nature’s workings as he does in the lofty cedar. Even the most minute plant has power of consuming substances, which, if not made available by plants as part of their food, would accumulate to that degree that animal life would become utterly extinct.—*Farmer’s Gazette.*

PHILOSOPHY OF FARMING.—Here is the secret of good farming. You cannot take from the land more than you restore to it, in some shape or other, without ruining it, and so destroying your capital. Different soils may require different modes of treatment and cropping, but in every variety of soil these are the golden rules to attend to: Drain until you find the water that falls from heaven does not stagnate in the soil but runs through it and off it freely. Turn up and till the land until your foot sinks into a loose powdery loam, that the sun and air readily pass through. Let no weed occupy the place where a useful plant could possibly grow. Collect every particle of manure that you can, whether liquid or solid. Let nothing on the farm go to waste. Put in your crops in that course which experience has shown to lead to success in their growth, and to an enrichment and not impoverishment of the land. Give every plant room to spread its roots in the soil, and its leaves in the air.

Agents for the Agricultural Journal.

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|----------------------------------|-------------------------|
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