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THE

# Canadian Agriculturist,

OR

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

Vol. XIII.

TORONTO, JULY 1, 1861.

No. 13.

## The Water Drill.

It will be seen by the Prize List of the Provincial Association for the present year, that the Board of Agriculture, (at the suggestion of J. Marks, Esq., an old, tried friend of Canadian Agriculture, whom we most cordially welcome again among us,) have offered a liberal premium for a water or liquid manure drill; an article as yet, we believe, unknown in Canada, and probably also in the United States. A few years, therefore, in reference to this novel machine, which has been in use in the old country for some half-dozen years, will not be unacceptable to our readers.

The advantages of the Drill in cultivating grain and roots, are generally known and acknowledged; and the practice has been surely, and rapidly, extending in this Province for several years. Mechanical art most opportunely came to the help of British farmers when artificial manures, such as guano, super-phosphate of lime, bone dust, &c., were introduced as fertilizers, by so constructing the drill as to enable the machine to deposit the seed and these combined manures by one process, thereby effecting both economy and efficiency. The liquid manure cart, for distributing over grass or other crops during their incipient stages of growth, and the drainage of the farm-yard, mixens &c., properly diluted with water, has now been a considerable time in use where agriculture has attained to an advanced condition, and the intro-

duction of the water or liquid manure drill may justly be regarded as among the most recent refinements of this indispensable and ever progressing art. Solid manuring substances, which can be dissolved in water, are by this novel process deposited below the seed in the most favorable condition for promoting germination, and accelerating the early growth of the plant; an object of great and general importance, and in the case of some species,—the turnip, for example,—altogether essential to the realization of a large crop. The advantages produced by the water drill, like most other agricultural operations, are modified by soil, climate, &c., and, therefore, it is unreasonable to expect the same results, in extent, at least, in all seasons and in all places. In many parts of England this machine has been employed, almost invariably with a satisfactory amount of success; and on dry, gravelly soils, the results have been often quite astonishing.

In a recent number of the *Journal of the Royal Agricultural Society of England*, Mr. Ruston has a very interesting paper on the Water Drill, in the use of which he appears to have had extensive experience. He uses Chandler's Water Drill; and when speaking of his mode of drilling tells us that when sowing mangel, cole-seed, or turnips, he invariably uses only two coulters, which, with a four feet six inches drill, makes the rows just twenty-seven inches apart. Mr. Ruston dissolves guano, superphosphate of lime,



rent and as marked as in any other cases where the lands were in a totally opposite condition. One would scarcely have expected this. The general supposition would have been that the moisture contained in the soil would have exerted the same influence upon the more easily soluble portions of the manure, as did the water applied to it in the cistern of the drill, and that therefore the crop would have been equally vigorous and healthy where the manure was sown dry as where sown in a liquid form. But the result proved otherwise."

### Precautions to be taken in the Cultivation of Potatoes.

This indispensable esculent continues more or less affected by the mysterious disease, which commenced such destructive ravages some seventeen years ago, and from which it has never yet, for a single year, been entirely free. In Canada the disease has sometimes been exceedingly virulent, and we observed it last season in some parts of England, Ireland, and France in a very aggravated form. A writer in the *Journal de la Societe Centrale d' Agriculture Belgique*, for September last, estimates the yield of this root, at least, a third less than it was twenty-five years ago, without including the tubers thoroughly diseased. The causes of the diminution, according to his view, may be summed up as follows:

1st. The late planting, which prevents the plant undergoing at the proper period the different phases of vegetation, and weakens the vital principle of the potatoes, which an earlier planting would have strengthened.

2nd. The division of the tubercle into quarters, which deprives the plant of the nourishment nature has placed at its disposal.

3rd. The principal cause of the diminution of the potato crop, is in the use of the lower part of the tubercle, instead of the upper part or crown. The author had proved that the latter produced sprouts, not only stronger, but quicker and more productive; whilst the lower part of the tubercle produced sprouts later and less vigorous. The sprouts are often very slender, and produce weak stalks without any strength, and which fall to the ground; and often at the raising of the potato an abundant quantity of hair-

like roots is found instead of potatoes; or, if they are found, it is in small numbers and of very small size. These facts are said to be but little known among agriculturists, who should choose for planting tubers with large germs; and if they do not wish to plant them whole, cut them in twos and across; plant only the upper half or crown, and keep the lower part for consuming.

4th. It is advisable after raising the crop, to wash the seed potatoes in *florin* or *urine* with lime and salt; and those intended for domestic consumption in water with lime and salt, and let them be well dried before pitting. The seed potatoes should not be taken out till the time for planting, in order that the germs and little roots may not be destroyed, as that would weaken and retard the growth of the plant. When potatoes are kept in out-houses, it is best to pick them long before planting, in order to dry the wound. A hard crust is formed on the surface, which preserves the pulp from decaying and from insects. It is also advisable, after having cut the tubers, to expose them to the sun, to make them green before planting. Seed potatoes should be chosen from the most productive parts, and free from disease.

From an elaborate article in a recent number of the *Journal of the West of England Society*, on potato culture, from the pen of Dr. Lang, in which many curious and important truths are discussed, the following may be regarded as conclusions deduced from his treatment of the whole subject.

1st. The desirability of *early planting* in dry, clean, and well prepared ground.

2. That white potatoes are less liable to the disease, and therefore to be preferred to the colored sorts.

3. That the soil in no case *produces* or *influences* the disease.

4. That the disease is of a fungoid character, infesting many varieties of plants, and increased in activity by atmospheric causes.

5. That all heterogeneous manures are injurious.

6. That lime and salt, mixed in the proportion of 8 tons of lime with 3 cwt. of common salt, is the best manure; and this is the proportion used to the acre.

7. That potatoes that ripen earliest should be exclusively grown.

8. That, as soon as the disease appears, earthing up the stalks repeatedly with fine earth from the centre of the trench is the only effectual preventive to its ravages. To this operation the author consequently attaches the greatest importance.

9. That when exhumed, *sunlight* appears to arrest the progress of the murrain, and prevents the further decomposition of the tuber.

Without committing ourselves to all the above statements and suggestions, some of which are, we think, doubtful or open to well founded objections, the attentive reader will find much useful material for thought, which if carefully considered cannot fail to impart valuable aid in coming to sound conclusions, as far as our confessedly limited and imperfect knowledge will as yet permit, on this very important and equally difficult subject.

### Judges and Unsuccessful Competitors.

FOR THE AGRICULTURIST.

Amidst the general harmony and joyousness which prevail at our Provincial Exhibitions, there arises annually, more or less, a murmur of disappointment, anger, and from some, even of execration. The cause of this is the real or imagined erroneous decisions of the judges. Incorrect judgments, inasmuch as they fail to accomplish one principal design of the exhibition, and shake the confidence of exhibitors, cannot be too carefully guarded against. But how effectually to do so is a difficult question. I have read more than one communication in the *Agriculturist* since last autumn, asserting and denouncing the mischief; but going no further in the way of proposing a remedy than the statement, "competent judges should be appointed."

I have one suggestion to offer, which, if adopted, would at least do a little in the right direction. When any parties are called on to name persons in their locality suitable for judges, let them be requested to give not only name and address, but the occupation of the individual, and their reasons for considering him competent in the particular class for which he is recommended. Let the appointments be made as early as possible, with one or two extra names for each class, and let each of the appointing committee keep a list of the names, and use every available means of further information in the case of parties who are unknown. When it is time to notify those selected, let the appointments be reviewed and finally decided on. Something of

this kind would at least have prevented one or two instances I remember of men being put in the wrong place.

But my present object was chiefly to bring forward some considerations tending to show the folly and injustice, in most cases, of the sweeping condemnation poured on managers and judges by parties who are dissatisfied with the awards.

It is no libel on humanity to say that there is in the character of most men enough of selfishness to materially dim their perception of defects, both in themselves and their productions. Although there are those possessed of integrity, discernment, and candour sufficient to overcome this weakness, yet they are the exception; and where its influence prevails, it is a fertile source of dissatisfaction whenever an adverse judgment is pronounced upon their works.

With nearly every article exhibited, there is some expectation of a prize—in some cases, a persuasion that it "cannot be beat;" consequently, when these hopes are not realized, there is more or less of vexation, which, combined with before-named tendencies, is sufficient, without any error on the part of judges to beget dissatisfaction.

With every means used to procure judges in all respect suitable, there must, in an exhibition where a great variety of productions are collected, be at times, some failures. It is common to insist that judges should not only be competent, but unacquainted with the ownership of what they are judging. This, while very desirable, it is impossible always to secure.

There is frequently some diversity in the views of those who may be regarded as competent men. One, for example, attaches more importance than another to some prominent excellence in an animal or article of manufacture. Another, with a keen eye for symmetry, cannot lose sight of what his friend regards as only a slight defect. In these and other ways, those who may be regarded as competent, will at times differ.

An ordinary observer accustomed to attend exhibitions where prizes are competed for, will meet with incidents, some of them very annoying, illustrating what I have advanced.

I infer from all this: 1. That there is cause for wonder that complaints are not more numerous. 2. That few competitors are competent judges of their own case. 3. That it is vain to expect even an approach to universal satisfaction.

Guelph, June, 1861.

S.

### Wool.

Subjoined will be found the copy of a letter from the Governor General's Secretary to the President of the Board of Agriculture of Upper Canada, of a letter from the Duke of Newcastle

to Sir Edmund Head, and of an address of the Wool Supply Association of the Bradford and Halifax Chamber of Commerce to all parties interested in the growth of Colonial and Foreign wools. The correspondence referred to between the Bradford Chamber of Commerce, the Board of Trade, and the Colonial Office, merely relates to the dissemination of the information and of the specimens of wool referred to, to the desired quarters. These communications are accompanied by three different samples of wool, each sample consisting of two lots, showing the wool of the ewe and the wether, and which represent, we suppose, the grades of wool the trade wish to obtain an increased supply of. The samples are as follows,—1st: Hog Lustre Wool, Wether Lustre Wool. This is about 4½ inches in length, of a bright lustrous appearance, not very fine in the fibre, but of a somewhat silky, flossy texture; just such wool as we find upon our best Leicester sheep at their first shearing. 2nd: Half-bred Hog, Half-bred Wether. This is about five to six inches in length, finer and more wavy in the pile than the first, and not so lustrous in appearance; a good specimen of the fleece of a cross between the Southdown and Leicester or Coltswoold. 3rd: Down Teg, Down Wether. This has a staple of four to five inches long, very fine in the fibre, soft and elastic to the feel; good specimen of the Southdown fleece.

The Address of the Wool Supply Association, and the remarks appended, will be found interesting and important to all breeders of sheep, especially to those who reckon upon the wool as a considerable item in their returns from their flocks. The price to be got for wool depends upon its quality, and the most desirable quality and condition can only be produced by paying attention to the requirements of the market. The communications referred to are as follows:—

GOVERNOR'S SECRETARY'S OFFICE,  
QUEBEC, June 14, 1861.

SIR,—I have the honor, by command of His Excellency the Governor General, to enclose a copy of Despatch from the Secretary of State, and enclosures (printed) with two samples of wool to which it refers, and to request that such measures may be taken as may appear to you to be

best calculated to meet the wishes of the Board of Trade for disseminating the information contained in these documents.

I have the honor to be, Sir,  
Your obedient servant,

FRANCIS RETALLACK,  
Acting Governor's Sec'y.

COL. THOMSON,  
President  
Agricultural Association, U. C.,  
Toronto.

(COPY.)

Circular.

DOWNING STREET,  
23rd May, 1861.

SIR,—I transmit to you herewith copies of correspondence between the Board of Trade and this Department, on the subject of a communication from Mr. Ripley, the President of the Chamber of Commerce at Bradford, and of an address from the Wool Supply Association of the Bradford and Halifax Chamber of Commerce, to all parties interested in the growth of Colonial and Foreign Wools. Mr. Ripley is desirous that the address, together with prepared samples of wool, should be disseminated through her Majesty's Consuls and Governors to all places from which wool is exported to this country. I enclose, therefore, with this correspondence, the packets intended for the Colony under your Government, and I have to request that you will give publicity to the facts contained in the address, as suggested by the Board of Trade.

I have, &c.,

(Signed.) NEWCASTLE.

THE RIGHT HONOURABLE  
SIR E. HEAD, Bart.

THE CHAMBER OF COMMERCE FOR THE WORSTED  
DISTRICT.

BRADFORD, YORKSHIRE, Feb. 21, 1861.

Address of the Wool Supply Association of the Bradford and Halifax Chamber of Commerce to all parties interested in the growth of Colonial and Foreign Wools.

The increase of the Worsted Trade of Great Britain has been very considerable during the last few years; and its further development has been checked only by the difficulty of meeting with an adequate supply of Long Wool.

To meet this condition of things, and in order, if possible to increase the supply, the Wool Association is desirous of disseminating information in the wool-growing districts.

The increase in the imports of Foreign Wool during the same period has been very large; but these supplies were almost exclusively of a nature to adapt them to the Woollen rather than

to the Worsted manufacture. Those interested in the latter branch of industry are anxious to stimulate the growth of wools suitable to their wants. The qualities they require give to the wool a higher marketable value for all purposes of manufacture, and are, therefore, well deserving the attention of growers, collectors, and shippers of wool.

The wool (the increase of which they desire to promote) should have a staple from four to seven inches long, according to its fineness, and should, as far as possible, be uniform in quality throughout its whole length, bright and lustrous in appearance, or soft and kind to the touch, of good spinning properties, free from burrs or other vegetable fibre. It should also be well washed before it is clipped, or where this is not practicable, care should be taken that it is not cotted or felted in drying. It is most desirable to retain the whole natural length of the staple by only clipping the lambs or sheep once during the season's growth, unless local causes render it absolutely necessary to do so oftener.

It is also very desirable that a proper classification of wool should be made in packing, and that the packing should be thoroughly trustworthy and firm.

An improvement is already manifested in the wool of some countries, and the Association believe that it might be made general if proper care were taken in the selection of breeding sheep, particularly of the Rams, and, where necessary, by the introduction of new blood.

The flocks should, as much as possible, be pastured upon succulent grasses, similar to those grown in Great Britain.

The destructive effects of drought, or cold, or other climatic causes, which check the growth of the grasses, by depriving the sheep of their necessary supply of food, and render the staple tender, ought to be prevented by a constant supply of food throughout the whole year.

The Wool Supply Association will be happy to answer any inquiries, and give any information that foreign correspondents may require in their efforts to increase the supply and improve the quality of their wools, and to render any assistance in their power to facilitate the export of breeding sheep suitable for crossing and improving the inferior foreign breeds. Already ten Rams have been sent to India by this Association, from which the best results are expected.

The Wool Association offer their gratuitous services to parties abroad desirous of purchasing Rams for exportation, or in any other manner to promote the views expressed in their observations.

A few samples of different varieties of the Combing Wools required will be transmitted to the Consuls in foreign parts, and to the Governors of Her Britannic Majesty's Colonies, and wherever Wools suitable for the Worsted Trade are cultivated.

Address the Bradford Chamber of Commerce, as above.

*Remarks concerning Wool,—chiefly pointing out the faults attached to each description named.*

**OPORTO.**—The wool usually imported from thence is long stapled and bright, but troubled with a sprinkling of grey and reddish hairs, which depreciate the value and limit the competition. The sheep, also, for want of attention, are apt to produce cotted and yellow tinged fleeces, which only realize in the English market about two thirds the value of free open stapled white wools. The receipts from Oporto have increased considerably, but a good portion of the increase consists of wool from a lower breed, and is called here "Mountain Oporto." This description is part long, very coarse stapled, and the other part of the fleece is short and dull looking wool, unsuitable for some purposes as real Oporto, and realizing twenty-five per cent. less price. By attention this mountain wool might be raised to same character as the usually good description received from Oporto.

**ICELAND.**—We don't know the exact quantity produced annually, but think it is 8,000 to 10,000 packs. The effect of a cold climate acting upon sheep left to nature has been to produce a wool consisting of a long spiry coarse top, with a fine downy bottom, which for English consumers is very objectionable, and reduces the value.

**RUSSIAN.**—The Donskoi Wool does not seem to meet with the same care as the flocks of merino that have attained such perfection in Southern Russia. The Donskoi sheep is probably in a state of nature, or at least partially so, and the Crimean entirely so. Both these admit of great improvement, and by care for a few years a long stapled good combing wool of finer quality might be produced, upwards of 30 per cent. more valuable. The Russian Government has the power, and probably the inclination, to initiate improvement, and will probably do so at its own expense, if the future advantage be made manifest. We see splendid flocks of merino have been created in Southern Russia during the last thirty years; we don't know whether this was done by the rich noblemen or the government, but it proves what improvement may be effected on a large scale.

**TURKISH.**—Asiatic and European, including Servia, Bosnia, Nissa, Scutari, Scopia, Salonica, Angora, Smyrna, Syria, Persia.—These wools are usually very scurfy and 'kempy,' both of which are serious faults, but may be eradicated by attention. It seems as if most of these wools got no care at all, and in evidence of this we point to the large proportion of scurfy and mangy fleeces. There is the basis for capital combing wool, even if the growers cross with their own selected rams, without the introduction of English sheep.

\*By Kempy Wool is meant the presence of short hairs at the roots of the staple, which never take the dye and disfigure all goods into which they are introduced.

**EAST INDIA AND PERSIAN WOOL** imported from Bombay.—Improvement has already commenced here, and a large field awaits full development. Each year our imports are collected from a wider range, and as we penetrate into a more temperate region, we find wool of a longer and sounder staple, assimilating more closely to our English descriptions than the short hairy wool that is usually grown nearer the Tropics. East India wool has a tendency to be burry and scurfy, with a slight mixture of grey hairs. The staple is generally too short.

**CHINA.**—This wool is usually soft short stapled wool; looks like neither fleece nor lamb; it is usually very cotted, kempy,\* and yellow. No attention seems to be bestowed upon it by the growers, but when a regular demand arises, the Chinese will, no doubt, turn their attention to the article, and effect desirable changes; and from the extraordinary fecundity of the sheep, large quantities might be produced.

**EGYPTIAN.**—Here is a wool with many of the properties so wished for by our consumers. The staple might be long enough if the native collectors and growers did not induce the practice of twice shearing. The wool is bright, sound, and silky, but is sometimes spoiled by a sprinkling of grey hairs, also by the admixture of ill-conditioned, rough, fuzzy wool, known in trade as man.

**THE CAPE.**—The chief remark to be made upon the wool from this district is to protest against the pernicious practice of shearing the sheep once in the year, which altogether disqualifies for combing purposes, and depreciates its value greatly; and it is strongly recommended to discontinue the practice of shearing until the entire length of the staple of which the wool is capable is obtained.

**NATAL.**—Considerable attention is being paid to the growth of wool in this colony, and, like New Zealand, it possesses great natural advantages.

**MOGADORE.**—The wool of this country is deficient in lustre, kempy,\* and of a brownish color, but by judicious crossing with English wool it could be brought to resemble our breeds, and find a large and remunerative market.

**CANADA.**—The bulk of this wool appears to be neglected Leicester, but is capable of improvement. There is a tendency in some parts to cross native sheep with United States merinos, but in the English market we recommend new Leicester rams, so as to impart length, lustre, and fineness to the staple. One great fault is the prevalence of burrs, which often depreciate the value five, and sometimes ten, per cent. This country's imports have been irregularly packed, consequently a manufacturer has been obliged to purchase much wool that he did not require along with that which he did want. If regular classification of the fleeces is unattainable at present,

let the growers, at least, pack up the cotted and cast fleeces separately from the others.

**CALIFORNIA.**—We have great hopes of this place being able to supply Europe with very large quantities of both long and short wool of medium and fine quality. At present the growth is exported almost exclusively to New York and Boston, where it enters duty free. We think, however, that Californian wool will, ere long, find its way to England. The value in New York of the unwashed fleeces varies from 6d. to 17d. per pound. The sheep farmers profess to be able to raise any breed from Leicester up to pure merino. At present there is every variety of cross, with an infusion of United States merino.

**PERU.**—This wool is long stapled tender wool, unfit for combing, but might be improved, and the kemp and scurf eradicated. The kemp is very prevalent. The Lima Wool is better bred, and nearly approaches a combing wool of middling quality to fine quality. Large quantities of long coarse carpet wool are shipped from Valparaiso to the United States.

The **CHILIAN Wool** is capable of considerable improvement.

**ARGENTINE REPUBLIC.**—Buenos Ayres, Cordova, Entre-Rios, Santiago.—Buenos Ayres wools are chiefly short-wooled—shipped in the grease. Entre-Rios and Santiago coarse wools. Cordova is a carpet wool, and from its length capable of great improvement.

**REPUBLIC OF THE URUGUAY, or Band Oriental.** Chief town, Monte Video.—The wool from this quarter chiefly consists of fine, short stapled.

**NEW ZEALAND.**—Large supplies of this wool have already come to England, and we believe the country is peculiarly adapted to produce the long combing wools required, from its soil and climate, and an unlimited market is open here for such wools.

**AUSTRALIA.**—The wools from this Colony form a large article of export. They are generally of a finer character than those of the other countries referred to, and for certain purposes are exceedingly valuable.

## The Application of the Manure of the Farm.

By Professor Tanner.

**Sweets and Turnips.**—The farm yard manure used for these crops has very generally been applied to the land just before the last ploughing in spring; but we have many modern instances where on strong soils an effort has been made to give the soil the benefit of an early admixture of long manure. In such case, the stubble having been cleaned during the autumn, receives its allowance of dung before it is ploughed up for the winter. This practice has been found to succeed so well, that its extension is rapid upon stiff soils. Amongst the advantages which

result are, the security of the manure from loss from bad management and the favorable action exerted upon the land—points to which we have already referred. To these we may add others which are of great importance. We have every reason to believe that, in proportion as we expose our soils—and clay soils more especially—to the action of the air and changes of temperature, in the same degree do we thereby develop their properties, and bring into action fertilizing matter which would otherwise remain in the land in a dormant condition. This is equivalent to an addition of manure; for the materials of the soil which are thus rendered useful were previously existing in a condition unfit for the support of vegetation. The application of the dung before winter co-operates very powerfully in promoting this action, and we are, at the same time, adopting the surest plan for enabling the soil to absorb from the atmosphere some of the ammonia which is present there. So that not only do we thus preserve our manure from waste, but we enable the soil to develop and obtain further supplies of fertility; nor must we overlook the increased efficiency of the dung consequent upon its more complete distribution throughout the soil, and the superior feeding qualities of the crop.

**Potatoes.**—The disease which has for so many years attacked this crop renders it necessary that the use of farm-yard manure be accompanied by some degree of caution. It has been observed that fermenting manures—such as dung—have a tendency to communicate decay to the plant. We have, therefore, two courses open to prevent the crop being thus injured—1st, to substitute an artificial manure possessing a preservative character, or, at least devoid of any unfavorable influence; or 2ndly, if farm yard dung be employed, to counteract, as far as possible, its disposition to communicate decay. The latter point will be best attained by having the manure spread upon the land in the autumn and ploughed in before winter. In preparing the land for planting in the spring the manure will be well distributed through the soil; and thus, whilst the land is enriched by the dung, its natural tendency to promote decay will be diminished.

**Cabbage.**—In the growth of this crop the use of farm-yard manure is generally desirable, but circumstances render it advisable to apply the manure at the same time as the young plants are set out upon the land. Well-rotted dung is generally preferred, because the plant comes into full activity soon after it is planted out. The cabbage is a gross feeder, and can scarcely have too much manure when the production of large autumn cabbage is desired; but if the crop is required for spring use it must not be forced with equal freedom. As in the case of swedes and turnips so here also the slower-grown plant is the one which best withstands the severity of the winter frosts and affords the best food in the spring. This must not lead us to deprive the

cabbage intended for spring use of the usual supply, but rather to take measures for its distribution throughout the soil. In this way the keeping qualities of cabbage may be very materially increased.

**Beans** are generally sown upon land which has received a dressing of farm yard manure. It is customary to spread the dung over the land, which being ploughed in, the seed is either drilled or dibbled. This crop luxuriates, under the influence of manure, to a far greater degree than other corn-bearing plants which we cultivate, and hence the regularity of the practice of using manure for it. In applying dung to a corn crop there is frequently a danger of producing straw rather than corn; but with the bean this is very seldom the case. If the quality of the land is such that the dung produces haulm (or straw) to such an extent that the pods die off instead of filling with corn, we may find a simple remedy at hand by cutting off the tops of the beans with a large reaping-hook. The growth of the stalk being thus checked, the energies of the plant are at once directed to the production of seed, the blossoms cease to die from want of nourishment, and the pods are gradually developed. The position of the seed pods in the bean gives it this advantage over the other corn crops.

**Wheat, Barley, Oats.**—The use of dung for these crops on stiff soils is by no means extensively carried out, although there are some neighborhoods in which it is general. There is scarcely any practice which is apparently more contradictory. The employment of dung upon some soils ensures the production of a good crop of corn, but upon other land it would with equal certainty destroy all our hopes of a satisfactory yield. When we are dealing with a rich clay, it is seldom that we can venture upon applying dung for corn, as it would cause a large growth of straw, to the prejudice of the grain. Other soils of a lower standard of fertility receive the manure with manifest advantage. We cannot, however, explain the differences observed by any comparative degrees of fertility which the soils may possess; and with our limited scientific knowledge upon the subject it is not desirable to speculate upon the controlling cause. Practically we know that one farmer does not fear for his crop of corn, provided he can get straw enough; whilst on other land a good crop of corn may be confidently lood for, provided we do not get too much straw. It will be sufficient for distinguishing those soils upon which manure may be advantageously used if we say that, where the growth of the straw has to be encouraged, the application of dung may be practised; but, on the other hand, when the soil is predisposed to yield a rank growth of straw, its use is seldom if ever safe. It is more than probable that by judiciously prepared artificial manures we shall, ere long, be able to supply our corn crop with the nourishment required for the production of grain, without that danger of an over

growth of straw which we have to contend against in the use of dung. I am encouraged in this hope from the satisfactory results of an investigation on this subject which I am prosecuting at the present time.

When farm-yard manure is employed it is almost always succeeded by a wheat crop, the use of dung for oats or barley being very exceptional. We shall subsequently have an opportunity of seeing, even more fully than has yet been explained, that when manure cannot be applied directly to the wheat crop we may attain the desired result by allowing another crop to intervene. As an instance of this, I may mention the practice of applying dung for beans, or upon clovers, when it cannot be used for wheat. This answers a double purpose; for it promotes the growth of crops which thrive under its direct action, and these crops leave the land enriched with materials required for the wheat.

**Artificial Grasses.**—Upon these crops the use of dung is generally attended with highly satisfactory results, and the extension of this practice is very desirable. Advisable as the application of dung in its early stages of fermentation may be for stiff soils, when it is to be plowed into the ground, the case is different when it has to remain upon the surface. Dr. Voelcker has shown that in a well fermented sample of farm-yard manure we have the ammonia present chiefly in the form of a humate, which is readily dissolved by water, but is not volatile, and, therefore, it is well prepared for being washed into the soil as soon as rain falls upon it, but is safe from being dispelled either by the heat of the sun or the passage of the wind. For these and other reasons, the dung intended for our artificial grasses should always be carefully fermented, so that it may be rotted when spread upon the land. Upon stiff soils the autumn is the usual time of application. The valuable powers which clay soils possess for the preservation of the manure added to them renders a frequent application unnecessary, and thus we find a well manured fallow or fallow crop generally relied upon for carrying the land through its course of four or five years' tillage without additional help from the farm-yard. If, however, the fallow crop has been removed from the land, it becomes desirable and economical to apply some manure to the seeds in the manner stated. Another cause which has led to the extension of this practice is the opportunity it offers for drawing this bulky manure to the land during a period of comparative leisure, instead of delaying the cultivation for swedes by its use for the root crop. In this instance artificial manure is entirely relied upon for the root crop, and thereby a considerable saving of time and labor is effected during this urgent and critical seed time.—*Journal of Royal Agricultural Society of England.*

## Flax Culture.

We are indebted to John A. Donaldson, Esq., Canada Government Emigration Agent at Belfast, Ireland, for a copy of the following valuable instructions in regard to the culture and management of flax, which, especially as we have lately received a considerable number of inquiries on the subject, we have much pleasure in laying before our readers:—

THE NORTH EAST AGRICULTURAL ASSOCIATION OF IRELAND.

*Directions for the Proper Management of the Flax Crop, orig. by compiled by the Committee of the late Royal Flax Improvement Society; Revised by the Special Committee of the North-East Agricultural Association of Ireland, for promoting the Growth of Irish Flax. Belfast, March, 1860.*

**SOIL AND ROTATION.**—By attention and careful cultivation, good flax may be grown on various soils; but some are much better adapted for it than others. The best is a sound, dry, deep loam. It is almost essential that the land should be properly drained and subsoiled; as, when it is long saturated with either underground or surface water, a good crop need not be expected. The subsoiling should be executed the year of the green crop, so as to be completed at least two years before the flax is grown.

The best rotation is to grow after wheat, on average soils; but on poor soils, where wheat does not succeed, it is often better to grow after potatoes. Flax should on no account be grown oftener than once in five years, and once seven is considered safer.

Any departure from this system of rotation is likely to cause loss and disappointment.

**PREPARATION OF THE SOIL.**—One of the points of the greatest importance in the culture of flax, is by thorough draining, and by careful and repeated cleansing of the land from weeds, to place it in the finest, deepest and cleanest state. This will make room for the roots to penetrate, which they will often do to a depth equal to one half the length of the stem above ground.

After wheat, one ploughing may be sufficient on light, friable loam, but two ploughings are better; and on stiff soils, three are advisable—one immediately after harvest across the ridges, and two in Spring, so as to be ready for sowing in the first or second week of April. Much will, of course, depend on the nature of the soil, and the knowledge and experience of the farmer. The land should be so well drained and subsoiled, that it can be sown in flats, which will give more even and much better crops. But until the system of thorough draining be general, it will be advisable to plough early in Autumn, to the depth of six or eight inches. Throw the

land into ridges, that it may receive the frost and air; and make surface drains to carry off the rains of Winter. Plough again in Spring, three or four inches deep, so as to preserve the Winter surface for the roots of the flax. The Spring ploughing should be given some time before sowing, to allow any seeds of weeds in the land to vegetate, and the harrowing in of the flax seed will likely kill them, and save a great deal of after weeding. Following the last harrowing it is necessary to roll, to give an even surface and consolidate the land, breaking up this again with a short-toothed or seed harrow, before sowing, which should be up and down, not across the ridges, or anglewise. These operations can be varied by any skilful farmer, to suit peculiar soils or extraordinary seasons. The object is to have clean, fine soil, as like as possible to what a garden soil should be.

Rotation recommended by a gentleman of considerable experience :

*Average Soils.*

1. Grass.
2. Oats.
3. Potatoes or Turnips.
4. Wheat.
5. Flax.
6. Clover.

*Poor Soils.*

1. Grass.
2. Oats.
3. Potatoes.
4. Flax.
5. Hay.

**SOWING.**—The seed best adapted to the generality of soils is Riga, although Dutch has been used in many districts of county for a series of years with perfect success, and generally produces a finer fibre, but not so heavy a crop as Riga. In buying seed, select it plump, shining, and heavy, and of the best brands, from a respectable merchant. Sift it clear of all the seeds of weeds, which will save a great deal of after trouble, when the crop is growing. This may be done by farmers, and through a wire sieve, twelve bars to the inch. Home-saved seed has produced excellent crops, yet it will be best, in most cases, to use the seed which is saved at home for feeding, or to sell it for the oil mills. The proportion of seed may be stated at one Riga barrel, or three-and-a-half imperial bushels to the Irish or plantation acre; and so on in proportion to the Scotch or Cunningham, and the English or Statute acre. It is better to sow rather too thick than too thin; as, with thick sowing, the stem grows tall and straight, with only one or two seed capsules at the top; and the fibre is found greatly superior, in fineness and length, to that produced from thin-sown flax, which grows coarse and branches out, producing much seed, but a very inferior quality of fibre. The ground being pulverized and well cleaned, roll and sow. If it has been laid off without ridges, it should be marked off in divisions, eight to ten feet broad, in order to give an equable supply of seed. After sowing, which should be done by a very skilful person, as the seed is exceedingly slippery, and apt to glide unevenly from the hand, cover with a seed harrow, going

twice over it—once up and down, and once across or anglewise, as this makes it more equally spiced and avoids the small drills made by the teeth of the harrow. Finish with the roller, which will leave the seed covered about an inch—the proper depth. The ridges should be very little raised in the centre, when the ground is ready for the seed, otherwise the crop will not ripen evenly; and when land is properly drained, there should be no ridges. Rolling the ground after sowing is very advisable, care being taken not to roll when the ground is so wet that the earth adheres to the roller.

**WEEDING.**—If care has been paid to cleaning the seed and the soil, few weeds will appear; but if there be any, they must be carefully pulled. It is done in Belgium by women and children, who with coarse cloths round their knees, creep along on all fours. This injures the young plant less than walking over it, (which, if done, should be by persons whose shoes are not filled with nails.) They should work, also, facing the wind, so that the plants laid flat by the pressure, may be blown up again, or they be assisted to regain their upright position. The tender plant, pressed one way, soon recovers; but if twisted or flattened by careless weeders, it seldom rises again. The weeding should be done before the flax reaches six inches in height.

**PULLING.**—The time when flax should be pulled is a point of much nicety to determine. The fibre is in the best state before the seed is quite ripe. If pulled too soon, although the fibre is fine, the great waste in scutching and hackling renders it unprofitable; and if pulled too late, the additional weight does not compensate for the coarseness of the fibre. It may be stated that the best time for pulling is, when the seeds are beginning to change from a green to a pale brown colour, and the stalk to become yellow, for about two-thirds of its height from the ground. When any of the crop is lying so suffering from wet, it should be pulled as soon as possible, and kept by itself. So long as the ground is undrained, and imperfectly leveled before sowing, the flax will be found of different lengths. In such cases pull each length separately, and if possible, keep it separate in the pool. Where there is much second growth, the flax should be caught by the puller just underneath the bolls, which will leave the short stalk behind. If the latter be few, it is best not to pull them at all, as the loss from mixture and discoloration by weeds would counterbalance the profit. If the ground has been thoroughly drained, and laid out evenly, the flax will likely be all of the same length. It is most essential to take time and care to keep the flax even, by a brush, at the root ends. This increases the value to the spinner, and, of course, to the grower, who will be amply repaid by an additional price for his extra trouble. Let the handfuls of pulled flax be laid across the other diagonally, to be ready for the

RIBBLING, which should be carried on at the same time, and in the same field, with the pulling. If the only advantage to be derived from rippling was the comparative ease with which rippled flax is handled, the practice ought to be adopted; but, besides this, the seed is a very valuable part of the crop, either for the oil mill or for feeding purposes at home. The apparatus is very simple. The ripple consists of a row of iron teeth screwed into a block of wood. This can be procured in Belfast, or may be made by any handy blacksmith.\* It is to be taken to the field, where the flax is being pulled, and screwed down to the centre of a nine-feet plank, resting on two stools. The rippers may either stand or sit astride at opposite ends. They should be at such a distance from the comb as to permit of their striking it properly and alternately. A running sheet must be placed under them, to receive the bolls as they are rippled off; and when the rippers are ready to receive the flax first pulled, the handfuls being placed diagonally, and bound up in a sheaf. The sheaf is laid down at the right hand of the rippler, and untied. He takes a handful with one hand, about six inches from the root, and a little nearer the top with the other. He spreads the top of the handful like a fan, draws the one half of it through the comb, and the other half past the side; and, by a half-turn of the wrist, the same operation is repeated with the rest of the bunch. Some, however, prefer rippling without turning the hand, bringing the flax one or two pulls through, according to the quantity of bolls. The flax can often be rippled without being passed more than once through the comb. He then lays the handfuls down at his left side, each handful crossing the other, when the sheaf should be carefully tied and removed. The object of crossing the handfuls so carefully, after rippling, when tying the beets for the steep, is that they will not freely from each other when they are taken and spread out on the grass, and not interlock and be put out of their even order, as would otherwise be the case. If the weather be fine, the bolls should be kept in the field, spread on window-cloths, or other contrivance for drying; and when turned from time to time, they will soon dry. Passing the bolls first through a coarse riddle, and afterwards through fanners, to remove straws and leaves, will facilitate the drying. If the weather be moist, they should be taken in-doors, and spread out thinly and evenly on a barn floor or on a loft, leaving windows and doors open to draw a thorough current of air, and turned twice a day. When nearly dry, they may be taken to the kiln (taking care not to raise it above a moderate heat), and carefully turned until no moisture remains. By the above plan of slow

drying, the seed has time to imbibe all the juices that remain in the husk, and to become perfectly ripe. If it be taken at once from the field, and dried hurriedly on the kiln, these juices will be burned up, and the seed will become shrivelled and parched, little nutritious matter remaining. In fine seasons, the bolls should always be dried in the open air, the seed threshed out, and the heaviest and plumpest used for sowing or crushing. The light seeds and chaff form most wholesome and nutritious feeding for cattle. Flax ought not to be allowed to stand in the field, if possible, even the second day; it should be rippled as soon as pulled, and carried to the water as soon as possible, that it may not harden.

WATERING.—This process requires the greatest care and attention. River water is the best. If spring water must be used, let the pond be filled some weeks before the flax is put in, that the sun and air may soften the water. That containing iron or other mineral substances should never be used. If river water can be had, it need not be let into the pond sooner than the day before the flax is to be steeped. The best size of a steep pool is 12 to 18 feet broad, and 3½ to 4 feet deep. Place the flax loosely in the pool, in one layer, somewhat sloped, and in regular rows, with the root end underneath; the tie of each row of sheaves to reach the root of the previous one; cover with moss sods, or tough old leaf sods, cut thin, laid perfectly close, the sleeper of each fitted to the other. Before putting on the sods, a layer of rushes or ragweds is recommended to be placed on the flax, especially in new ponds. As sods are not always at hand, a light covering of straw may do, with stones laid on it, so as to keep the flax just under the water; and as the fermentation proceeds, additional weight should be laid on,—to be removed as soon as the fermentation ceases, so as not to sink the flax too much in the pool. Thus covered, it never sinks to the bottom, nor is affected by air or light. A small stream of water, allowed to run through a pool, has been found to improve its colour. It will be sufficiently steeped, in an average time, from eight to fourteen days, according to the heat of the weather and the nature of the water. Every grower should learn to know when the flax has had enough of the water, as a few hours too much may injure it. It is, however, much more frequently under-watered than over-watered. The best test is the following:—Try some stalks, of average thickness, by breaking the *shove*, or woody part, in two places, about six or eight inches apart, at the middle of the stalk; catch the broken bit of wood, and if it will pull freely out, downwards, for that length, without breaking or tearing the fibre, and with none of the fibre adhering to it, it is ready to take out. Make this trial every six hours, after fermentation subsides, for sometimes the change is rapid. Never lift the flax roughly from the pool, with forks or grapes, but have it

\*The best ripples are made of half-inch square rods of iron, with the angles of iron next the rippers, 3-10ths of an inch asunder at the bottom, half an inch at the top, 1½ inches long, to allow a sufficient spring, and save the breaking of flax. The points should begin to taper 1 inch from the top.

carefully handed out of the flax drain by men standing in the water. It is advantageous to let flax drain twelve to twenty-four hours, after being taken from the pool, by placing the bundles on their root ends, close together, or on the flat, with the sloop; but the heaps should not be too large, otherwise the flax will be injured by heating. The flax water can be either used as liquid manure for meadows, or kept in the pool till the first flood,—it should not be run off into the river when the water is very low, as the odour is very unpleasant, and the water thus impregnated is poisonous to fish, and contrary to law,—see Fisheries Act, 5 and 6 Vic., c. 106.

**SPREADING.**—Select, when possible, clean, short, thick pasture ground for this operation; and mow down and remove any weeds that rise above the surface of the sward. Lay the flax evenly on the grass, and spread thin and very equally. If the directions under the head of rippling have been attended to, the handfuls will come readily asunder without entangling. Some people recommend turning it on the grass with a long rod, which is not, however, generally done in Ireland.

**LIFTING.**—Six to eight days, if the weather be showery, or ten to twelve, if it be dry, should be sufficient on the grass. Ten days may be taken as an average in ordinary weather. A good test of its being ready to lift is to rub a few stalks from the top to the bottom; and when the wood breaks easily, and separates from the fibre, leaving it sound, it has had enough of the grass. Also, when a large proportion of the stalks are perceived to form a *bow and string*, from the fibre contracting and separating from the woody stalk. But the most certain way is, to prove a small quantity with the hand break, or in a flax mill. In lifting, keep the lengths straight and the ends even, otherwise great loss will occur in the rolling and scutching. If heavy dews or damp weather prevail, don't lift after 3 o'clock, p.m. Let it be set up to dry for a few hours, and afterwards tie it up in small bundles; and, if not taken soon to be scutched, it will be much improved by being put up in small stacks, loosely built, with stones or lrambles in the bottom to keep it dry, and allow a free circulation of air. Stacks built on pillars would be the best.

**DRYING**, by fire, is *always most pernicious*. If properly steeped and grassed, no such drying is necessary; but to make it ready for breaking and scutching, exposure to the sun is sufficient. In some districts it is put to dry *on kilns* in a damp state, and is absolutely burned before it is dry, and the rich oily appearance of the flax is always greatly impaired.

**BREAKING AND SCUTCHING.**—If done by hand, try the Belgian system, which is considered superior to that practised in Ireland. If by milling, the farmer will do well to select those mills in which good machinery has been introduced; and it is to be hoped that, ere long, by further

improvements, increased economy in these establishments will be attained.

**THE COURTRAI SYSTEM.**—This mode of preparation requires to be very carefully executed, as inattention will reduce the value of the straw, and yield inferior fibre. When made up for drying in large sheaves, the straw is much injured, the outside stalks being much discoloured by the heat of the sun before the inside of the sheaf is dry. The flax stems should be put together in bunches, about one-half larger than a man can grasp in one hand, spread a little, and laid on the ground in rows after each puller; the bunches laid with tops and roots alternately, which prevents the seed bolls from sticking to each other in lifting. It should be stooked as soon after pulling as possible, and never allowed to remain over-night unstocked, except in settled weather. The stooking should go on at the same time as the pulling, as, if flax is allowed to get ra'n while on the ground, its colour is injured. A well-trained stooker will put up the produce of a statute acre or more, in good order in a day, with two boys or girls to hand him the bunches. The flax should be handed with the tops to the stooker. The handfuls, as pulled, are set up, resting against each other,—the root ends spread well out, and the tops joining, like the letter A. The stooks are made eight to ten feet long, and a short strap keeps the ends firm. The stooks should be very narrow on the top, and thinly put up, so that they may get the full benefit of the weather. In six or eight days at most, after being pulled, the flax should be ready for tying up in sheaves of the size of one sheave. It is then ricked, and allowed to stand in the field until the seed is dry enough for stacking. To build the rick, lay two poles parallel on the ground, about a foot asunder, with strong upright pole at each end. The flax is then built, the length of a sheaf in thickness and breadth. The bottom poles should be laid North and South, so that the sun shall get at both sides of the rick during the day. In building, the sheaves should be laid tops and roots alternately, built seven to eight feet high, and on the top a single row of sheaves lengthwise, or across the rick, and then another row as before, but with the tops all the same way, which gives a slope to throw off rain; finish by putting on the top a little straw tied with a rope. In this way, if properly built, it will stand secure for months, or it can be put in a barn, if preferred; in either case, the seed is to be taken off during the winter, and the flax steeped in the following May.

*Note.*—In arranging the foregoing directions for the management of the flax crop, we have adhered very closely to the original text of the late Royal Flax Improvement Society. The alterations and abbreviations we have thought desirable, are, in our opinion, required to

ply the subject, and thus make a little more plain the details of judicious cultivation.

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### Farming in Flanders.

[The following account of Flemish farming is both suggestive and interesting, affording the reader a correct idea of the state of the Agricultural art in one of the most highly cultivated countries of Europe. It is a contribution from the pen of D. Emile de Laveleye to the French *Revue Deux des Mondes*, with a few concluding sentences by an English Agriculturist.]

We are in Waesland, in Eastern Flanders, on the north of the river Scheldt, between Antwerp and Ghent. The first appearance is of being in the midst of a forest; and the roads are planted, all the fields are surrounded, and all the ditches are bordered with trees, which, driving their roots into the one side, and the muddy water of the great drains on the other, display a most refreshing appearance of fresh growth. There are no hills to break the monotony of the flat, fertile, peaceful plain. At intervals along, and parallel to the road, the farm-houses rise from the midst of orchards of great apple-trees. Tacitus observed that "the Germans lived in detached dwellings, unlike the Latins, whose villages are formed of rows of houses," and his picture is here to this day. The farm house is now, of one story, built of bricks carefully painted white or of some bright color, with the shutters of a deep green. The roof is thatched. A path paved with bricks leads up to the door through garden gay with dahlias and gillflowers, and through the white curtains of the window may be seen the bright colors of the pot flowers, which latest horticultural shows of Ghent have made the fashion. The cottage generally consists of four rooms, the largest being used as a sitting room; in the second butter is made and the food of the cattle cooked; the two others are bed chambers. Scrupulous cleanliness and neatness prevail not less in the hut of the poor laborer than in the house of the rich farmer. The ancient furniture—the oak-cased clock, the wardrobe, the white wood dresser—all show the care of the housewife. Plates gay with flower pictures adorn the mantelpiece of the grate of the huge fireplace and the shelf of the dresser. The iron hook of the churn and the copper vessels shine brightly in the sun. The walls are whitewashed

every year before the fair (*kermesse*.) In the farm-yard everything is equally neat; the dung-hill and liquid-manure pit are under; the roof of the cow-house. There, too, five or six huge cows with swelling udders are sedulously attended on by the farmer's wife. In summer they get plenty of green fodder; in winter, straw, hay, and a sort of hot soup of turnips, carrots, beet roots, oilcake, bran, and rye flour or malt. The agricultural implements in use are a light swing-plow, drawn by one horse; harrows of a triangular, rectangular, and parallelogram form; barrels mounted on wheels for distributing liquid manure. But the special implement of the Flemish agriculturist—the implement with which he has fertilized sands, drained marshes and reclaimed thousands of acres from the sea—is the spade. They have a proverb which, as written is almost English—"De spa is de goudmyn der boeren" (the spade is the gold-mine of the boor or peasant.) The spade of the Waesland, intended to work in a light, well cultivated soil, is of wood, with an iron casing on the blade. Even on very small farms the plow is used as well as the spade; but the spade is employed to give the last finish to the preparation of the soil, to throw it into heaps for winter's frost to soften it, or into beds two or three yards wide divided by narrow channels. The fields are invariably of a regular shape, square or a right angled triangle, and seldom more than 2½ acres in extent. The arable land is thrown up in the centre, and slopes to the sides, so that water may flow from it evenly. On each side of the arable land, but a foot lower, is a border of turf ten or twelve feet wide; still lower is a plantation of underwood, which is cut every seven years. Lastly, the field is enclosed by a ditch, bordering with forest trees. The arable land is on an average seven feet higher than the ditch. This helps to make it perfectly dry. These ditches are indispensable, in a low flat damp country, to receive the rain-fall. In cutting them, the "spoel" is used to raise the level of the arable land. Thus each enclosure supplies annual crops, grass, which is watered by the overflow of liquid manure from the arable land—fire wood every seven years, and timber fit for building every thirty years. The arable land is usually worked with the plow; but every six or seven years it is dug over, the subsoil being carefully spread over the surface which has borne the last year's crop, the subsoil being supposed to have had the benefit of a fallow and a filtration of the manures applied to the surface. The consequence is, that arable land acquires a greater depth than even that of vegetable gardens. The chief produce is not grain, but flax and butter. The best farmers do not sell any corn—they give it all to their live stock.

Rye and potatoes are grown on the poorest land, and form the principal food of the agricultural classes of the greater portion of Flanders. The Germans are so fond of rye, that they cultivate it in preference to wheat, even on strong clay land. It also yields in Flanders, where the soil seems particularly favorable to it, upwards of ten per cent. more than wheat; it ripens earlier, and

thus leaves more time and room for the stou'en crops, which form a leading feature of Flerish peasant agriculture; and the straw is preferred for thatch. Wheat requires much manure, and often does not pay the expense of cultivation. Wheat, therefore, is chiefly confined to the district of strong and land large farms. Barley yields an excellent crop, and beer is the drink of the country. Potatoes occupy ten or twelve per cent. of the arable land. Oats are a favorite crop. Buckwheat is liked, because it requires no manure. In the sandy or small farm regions 35 or 40 per cent. of arable land is employed in growing green crops, either as a first or second crop. These, with the natural and artificial meadows, give a return of more than half the land devoted to crops which yield meal and manure. Without a liberal application of these, lands would soon return to the condition of waste heaths. Artificial fields of lucerne have not succeeded. Common clover mixed with rye-grass, and red clover, are used instead. The damp climate suits permanent pasture; but the soil is generally too poor, in the region we are particularly describing. Formerly the cottage farmers not only grew flax, but spun it with distaff, and wheel; machinery has absorbed that employment; but the rotting, the stripping the flax plant, weaving the thread, distributes a considerable sum in wages amongst the laboring population. The decline of the linen trade has been recently compensated by a great export of linen thread to England and France. The cost of flax growing, in manure, labor and seed, is calculated at about \$65 per acre. Every farmer grows tobacco for his own consumption. But in certain districts a fine quality is obtained. Hops are cultivated with great care and success. They water with liquid manure as soon as the leaves begin to grow slowly. Unlike our hop districts, where every acre is sacrificed to one plant, the finest crop of wheat and roots are found in the hop districts. Amongst other crops, chickory, used instead of coffee, rap, and other plants, are grown to make oil cake. The number of stock maintained per acre is large, but mere figures carry a very imperfect impression on this point. M. de Lavergne's calculation has 33 horned stock, 6 horses, and 200 sheep for every 2½ acres in England, and in the whole of Flanders 55 horned cattle, 12 horses, and 8 sheep. The French author reduces the English sheep to cattle at 8 to 1, and this gives 64 head in Flanders per 2½ acres. But he also observes that the cattle are chiefly for the dairy; that "in consequence of the want of pasture, and the very small consumption of meat by the working classes, very little meat is grown—except in the large farm districts of the coast;" and that, "while the number of sheep diminishes, a great number of goats—50,000 in the province—are kept by farmers too poor to keep a cow." Since the demand for butter for export to England has so largely increased, the number of sheep has steadily diminished. The French author labors under the erroneous idea that the same result has followed high farming in England; but we all know the reverse is the fact, the number of sheep

fed having steadily increased in England for the last ten years.

It must also be observed that any comparison between the stock fed in England, and on the continent, will be very deceptive, if taken in the usual manner by numbers. Our live stock are so much heavier, so much more valuable to the butcher, and so much earlier matured, that it is no exaggeration to treat them as worth double the live stock of France, Germany, and Flanders—although in dairy-produce Flanders and Holland excel us, not for the superiority of their stock, but the superiority of their management, and in certain districts, of their grasses.

### Management of Poultry.

The following observations on the general treatment of Poultry are taken from a recent work published in Edinburgh, entitled "The Henwife," by Mrs. Fergusson Blair, a highly accomplished lady, who takes great interest and has had extensive experience in the treatment and management of Poultry. Her book is said by competent authority to be a gem of its kind.

"The best guide is nature, and we should always follow her as closely as possible in the treatment of our stock. Fowls are almost grazing animals, and pick up grass, or any green food, in quantities. If, therefore, you cannot give them complete liberty, and this is impossible where large numbers and several varieties are kept, you should at all events allow them a daily run in a grass park. One hour's liberty is sufficient to keep them in health, and their enjoyment of this boon is so great, that, even were there no other reason, that should be sufficient inducement for you to give them their little bit of happiness, even at the expense of trouble to yourself. It is astonishing how soon fowls accommodate themselves to the regulations of the establishment. A day or two suffices to make them acquiesce in all our wishes, and enables them to recognize without apparent difficulty their respective yards. Fowls seem to understand the value of their hourly play, and lose no time the trap once opened, in availing themselves of it; they rush to the grass, and never cease picking it, until driven home. Great care must be taken that one set is put in before another is let out. This demands hourly attention, as, by one moment's carelessness in allowing breeds to mix, hopes, for a whole season may be destroyed. If there are several yards of the same breed, these to save time, may be allowed to enjoy each other's society during their run, as a *faux pas* in their case, though not advisable, need not be fatal—but never let out different varieties together. One single *mesalliance* will ruin the purity of the breed. At no season of the year should hens be allowed to associate with the male bird of a different variety, and if *super-eminent* excellence is desired, not even with an inferior one of the same

While the fowls are enjoying their grass run, their yards may be dug over. Twice a week is not too often for this operation. Occasionally a little of the soil may be pared off, and fresh sand strewed in its place. At all times, perfect cleanliness in yards and houses, should greet the eye of the lady visitor—it is the grand requisite. At the risk of appearing didactic, I must insist upon a *sine qua non* in a poultry establishment, great or small, be it that of the 'laird,' or that of his 'tenant.' I do not say with some writers, 'If the floor of the fowl house be cleansed every morning, so much the better,' but I say, 'It must be done,' and scrupulously so, too. If the floor is as hard as it ought to be, a birch broom is the best implement that can be used for this purpose. The supply of water must be copious and of the purest description, and the dust-bath always provided with ashes for the use of the fowls. They love to roll themselves in this, scattering the contents over their feathers, to the effectual discomfort and dislodgement of all parasites. A heap of lime rubbish, or old mortar, should be placed in a corner in each yard—poultry are fond of it, and it is conducive to their health. Once a year the interior of the houses and nests should be limewashed, and the floor saturated with same mixture. This keeps all perfectly pure and free from taint. It is good, during warm weather, occasionally to sprinkle water from a watering-can over the perch and in its vicinity, scattering a little sulphur over the wetted parts. This ought to, and in a great measure does, prevent the appearance of any obnoxious animalculæ, which, too often, in even well-regulated establishments, make their way good, to the torment of the occupants and their attendants. Depend upon it, the more we attend to the comfort of our domestic animals, the more they will repay our care.

To the farmer (and I hope to number many among my readers), I would give the following advice. In spring, purchase a Brahma Pootra cock and four hens; set every egg. From these, keep all the pullets, and kill off the cockerels. In autumn, sell or exchange the adult Brahma cock for a large grey Dorking, and your yard will then be stocked for the season. If you can board out the Brahma cock, he will again be of use the following spring, with your adult Brahma hens; but, on no account must he be allowed to remain in your own yard with the pullets. A slaughterer, for a remuneration, will gladly take charge of the pen, and rear as many chickens as is desired for carrying on the system. In this way, your original stock will supply your yard for several seasons. From thirty Brahma pullets, you will have above ten dozen eggs per week all winter; and the cross with the Dorking produces the finest possible chickens for market, but not to breed from. Pure Brahmas alone must be kept for that purpose; I have always found the second cross *worthless*. As

Brahmas do not so constantly show a desire to incubate, their period of laying being much more extended than that of Cochins, a few of these hens, (not the leggy, tucked up looking things, so often called such, but short-legged, compact, well-feathered birds), many with advantage he kept, to act as mothers; they sit early, and are capital nurses. Farm yards are seldom stocked with profitable poultry; in them, too often, is the pernicious adherence to the system of breeding in and in seen, in its worst aspects; the result is *certain* degeneracy. Farmers look upon poultry as a trifling and unimportant item in the farm stock, only to be kept as layers of eggs during summer, and are quite satisfied if their chickens bring a fair market price. But why not rear fowls that will weigh eight instead of four pounds? and at the same cost of feeding. Surely such weights will command higher prices than merely those of the market, which is often supplied with birds scarcely worthy of the name of fowls. Creatures of every conceivable form and color, with long black legs, narrow breasts, and twisted breast-bones, certainly possessing a superabundance of tail, but that adornment goes for little in the cook's eye. These miserable results are by no means the consequence of want of food; a farm yard is the paradise of poultry, and nowhere can they live in greater comfort or plenty. It is just because the birds want frame, on which to put flesh and fat; bone is deficient; and all the lap's full of oats, barley and wheat, which the farmer's wife may filch for them from the gude-man's barn, are wasted on a worthless crew. Let the farmer test the merits of my advice by his own practical experience, and I am not afraid of an adverse opinion. Poultry ought to pay him if anybody; they have the advantage of the gleanings of the stack-yard, and at times are almost independent of any extra feeding. Should the farmer be an exhibitor, he must, of course, submit to some expense in carrying out his hobby. High feeding must then be the rule. Exhibition fowls require more than ordinary care and trouble. Money may have been invested in the purchase of prize pens, at enhanced prices, but he may look for his return in the constant pleasure they afford him, and in being the envied winner of a "silver cup."

### Hints about Shearing Sheep.

John Prodert, in the *Ohio Farmer*, gives the following practical hints relative to shearing sheep, which at this time are very reasonable:

"Shearing sheep is an operation very few know how to perform well. There are several reasons for this. It seems useless to take pains to learn to do well. It has to be done but once a year, and the interval is so long, that what they learn this year will be forgotten next, so it is got through with as soon as possible. This should not be; shearing should be considered as

much a trade, and as well learned as the carpenter trade.

It is often the case, when boys begin to shear, that the father forgets the old but sensible couplet:

Neither wise men nor fools,  
Can work without good tools.

The boy must take the old shears, used for tagging three or four years, with the assurance that he must use them till he knows how to take care of a new pair. In seven cases out of ten, this course so discourages the boy that his desire to learn to shear ceases. Another reason for bad shearing is this: When farmers hire their shearing done, they want too much done in a day, forgetting that wool is money as well as time. The employer pays the shearer \$1.50 per day; he wants him to shear from forty to fifty sheep. He is pleased at night to know that he has got so much done, and that the shearer has earned his money. He forgets that he has lost enough in wool left on the sheep, to pay for the day's work.

Suppose he shears forty sheep, and leaves two ounces of wool on each of them (which is often the case) which taken off would amount to \$1.50. Much of the work that is laid to rats, might be avoided if farmers would tell their shearers to do their work well, if they did not do so much.

I have sheared from one to five hundred sheep each season for ten years, and like the business so well that I always long for shearing time to come. I will give a few hints needed to make good shearing.

The operator must have a good pair of shears. He must know how to keep them in order, for it is very certain that a dull tool makes poor work. Good, sharp, bright shears, not too sharp pointed, will run smooth. The spring should not be so limber as to double over the wool nor too stiff so as to make the wrist lame. With skill, a steady nerve, and an even temper, it can be made to do good work.

There are various opinions in regard to position. Some shear on the floor, others use a bench. Good work may be done either way; I prefer using a bench. In all cases, the operator should hold the sheep in the easiest possible position, and keep the skin tight so as to make a smooth surface to prevent cutting the skin, causing the sheep to kick, or tear the fleece, and so exert their strength as to injure them and sometimes to cause death. This can and ought to be avoided."

### Costwold Sheep in Old Times.

In reference to the different breeds of sheep, the *Maine Farmer* observes:—

"In regard to the Costwold breed, the earliest account we have seen of them is in Young's *Annals of Agriculture*, vol. 6, published in 1786.

In a 'Tour to the West,' as the editor calls one of his journeys, getting into the Cotswold country on passing the vale of Gloucester, he says: Riding to the Cotteswold hills, I enter a much poorer country. At Stockhold I found much land beat-ploughed, and burnt for turnips, which, with spreading the ashes, cost 18s per acre. They reckon it the best of husbandry, and the only means of converting these poor thin soils to any profit; do it after laying six or eight years. That I saw had been down eight years, but had not been sown with any seeds, which was shameful. Farms throughout the hills are large of necessity; for every man depending, in a great measure, for corn on his flock of sheep renders great occupations necessary. They have some farmers worth £20,000.

The principal object in the country is their sheep, which are good, and bear longer wool than any breed I know, on such poor hills. It is an exception to common rules, which seem to proportion the length of the fleece to the richness of the pasture. Their wool is six or eight inches long, in large flushy fleeces of five to eight pounds, and sells at 7d a pound. The sheep are about 20 pounds a quarter, fat; some I heard of which rise to 28 pounds.

In the breed they are not without some pride in excelling their neighbors. Mr. Haize, of Balingworth, has sold rams at ten or twelve guineas each. The flock lambs are sold in September, the lowest price 7l a score, the highest 16l and 17l.

The present breeds of Costwolds that we now have, are descendants of the flocks thus descended by Young, but have been improved by judicious breedings and crossings, under experienced flock-masters.

HOW ROOTS FEED.—Can the roots of plants take up only such substances as are dissolved in the ground and thus prepared for them, or can they themselves dissolve them?

This question has been solved by Liebig, and by experiments before the Society of Natural Science, in Carlsruhe, he has proved that the roots of plants, by giving forth some acid, probably carbonic acid, do dissolve the alkali, ammonia, and phosphorus in the soil. Dr. Schimper showed the meeting, as a further proof of Liebig's doctrine, some pebbles which evidently had been eaten into by roots of plants. The fact is visible; the process, however, is not yet clear.

This valuable discovery of the great chemist goes clearly to show us why the rains and floods cannot wash out of the ground the substances forming the food of plants; on the contrary we now know that the earth takes from the liquids which touch it, and solidly appropriates substances which the roots of the plants again absorb by their action. In the same way we clearly perceive how plants can draw from the soil substances which are solid, and which are not soluble by water.

### Feeding the Farm Horse.

W. G. Campbell, of Garrard county, Ky., in the *Louisville Journal* makes the following observations on the feeding of farm horses :

In ascertaining the most economical mode of feeding the farm horse, we will premise that that food which is procured with the smallest amount of labor and capital, and adds most to the strength, health and condition of the horse is the most economical. If the horse be kept in actual service and labor, cut oats and corn in the cob, with hay, constitutes cheap, healthy, and strengthening food, and I have no doubt is the most economical method of feeding ordinarily. Oats should always be cut up—cut for the horse to the band, and you will leave a portion in fine condition to be fed to cattle. Three bundles thus cut constitute a good feed, with eight ears of corn and hay; and if hay is not convenient, by letting the horse run out at night and pick grass, or such rough fodder as is fed to cattle, he will keep in fine flesh and extra condition. The low price of horse feed would not pay for labor bestowed upon it unless it be in time of great scarcity of food. The food of horses, however, could be varied, so as to prevent cloying, but oats are extremely agreeable to the horse, and he rarely, cloys upon them. Cut straw or oats, wheat or rye made wet, and rye meal mixed with by pouring in the meal and constantly stirring with straw, makes a fine feed as an alternative, but could not be fed freely to any breeding animal. Each feed acts finely upon the bowels and skin, and may be used to advantage in all cases of sickness. But one of the most palatable and healthy feeds for the horses, especially if he be falling in his appetite, is a small quantity of rolled oats, say a quart for a horse in delicate health, or a gallon for a horse inclined to costive habits, placed in a pail, with warm water poured over them (or it may be boiling) and suffered to stand and absorb the water, and give when cool. The care to pour only so much water as to wet the oats moderately. Any horse that will eat it will eat it. Its action upon the bowels will be fine, which will be told by the sleek and healthy appearance of the hair.

have proved less productive, and public attention appears now to be directing itself more to the agricultural resources of the country. The *Halifax Morning Chronicle* remarks as follows:

From all sections of the Province intelligence reaches us of increased activity in farming operations. Of seed sown in places that have long lain fallow. And of many beginners who have placed their hands to the plow, abandoning other, and more uncertain pursuits, for the independence of the thrifty farmer. We are pleased to learn of the turning of fresh soil; or of that long disused; and of such acquisitions to the ranks of our sturdy tillers of the soil as will largely increase our agricultural products. This un wonted activity is mainly owing to the prospect of a long and uncertain war in the "States," and a consequent neglect of the usual farming operations. But the hostile armies must be fed, and in preparing for a largely increased demand our farmers have done wisely. Aside from the immediate result of obtaining high prices for every description of produce, we trust that the stimulus thus given to agriculture throughout the Province will be lasting. It is evident that too many are engaged in professional and commercial pursuits, and too few have devoted themselves to agriculture. We import yearly large quantities of breadstuffs and provisions, when the demand might be more fully met at home. The money, which otherwise would go abroad, would thus be retained, and used in establishing manufactories, and in the thousand and one ways which a country like this demands. It is quite evident, so far as our observation extends, that in order to secure emigration, and the advancement of the Province to the position of wealth and importance for which it has been so liberally provided by nature, that there is much to be done. Many roads to be opened, mail routes established, saw mills built, and manufactories set in operation, which are so essential, and indeed, we may say indispensable, to meet the wants of the incoming emigration. In order to do this, we must accumulate capital. And we know of no surer and speedier mode of accomplishing this than by increasing our exports, diminishing our imports, and rendering the productions of the country more nearly equal to home consumption.

### Agricultural Intelligence.

#### Agriculture in Nova Scotia.

Hitherto agriculture has occupied a subordinate position in this Province to the fisheries and mercantile pursuits. The consequence has been that large annual importations of farm produce had to be made in order to meet the wants of the population. The fisheries of late years

PROGRESS IN AGRICULTURE.—When we turn to the progress of Agriculture, its steam-ploughs, steam thrashing machines, and improved methods of management, we find there is only a comparatively small beginning made and much still to do. It is shown that by proper management and well directed labor, even without any special or new appliances, the ground in the neighborhood of the metropolis might be made to produce five-

times the present average quantity of produce. It is evident, therefore, that a great deal has yet to be done in this direction. In spite of the chemical knowledge which has been brought to bear on this subject in parts of England, some not far distant from London, the same methods are in use as were employed two centuries ago. Nevertheless, steam is making considerable progress, too, in agricultural manufactures, here and there, throughout the country. In the improvement of varieties of crops much has been done. There seems to be here a boundless field for culture. The grains and roots, as well as the sheep and cattle of recent years, are, many of them, enormous in size compared with those of past years, and there really would appear to be scarcely any limits in this, as well as in other directions connected with agriculture. We do believe that vegetable and animal life can be either enlarged or diminished almost to any extent by patient and long-continued culture and selection—that sheep could be enlarged to the size of cattle on the one hand, or dwindled to the size of lap-dogs on the other, by breeding and selection. How can the old “oaks and pines” of the Chinese and Japanese, dwindled to a few inches in height, have been produced but by long-continued selection of the smallest trees, and the smallest seeds, reiterated over and over, till the dwindling process was accomplished? And so with the enlargement of Animal produce: how have the enormous swine and other animals of the modern farm been produced but by some such system of breeding and selection? Here, we say, there is a vast field for improvement, even independent altogether of steam, though that will soon be making rapid and extensive strides in agriculture as in other manufactures; and in commerce and social intercourse.—*Builder.*

**LIMING FOLLOWED BY SORREL.**—It is quite generally the case that a year or two after lime, or plaster in large quantities, has been sown on land it produces a heavy growth of sorrel. “The most effectual way to get rid of it,” says a correspondent of the *Genese Farmer*, “is to sow unleached ashes at the rate of two or three bushels per acre, with the fir t grass or clover grown after the application of the lime; and when sowing plaster to mix a small proportion of unleached ashes with it.”

**LIGHT FOR ANIMALS.**—A correspondent of the *Homestead*, in an article on fattening hogs, gives the following advice:—“One more important item of advice, and that is, locate your pen where your hogs can have the benefit of light. I don't mean merely daylight, but the full bright light of the sun; it will add to their cheerful contentment, as it does to the human species, and physiologists declare that, other things being equal, families who occupy apartments in the sunny side of dwellings are the most contented and happy. Although the comparison may, to sensitive nerves, appear odious, still

it is beyond our power or province to change the established laws of nature. I never knew of a hog, or any other animal, kept under the north side of a barn or other building, where the dampness and darkness is never penetrated by the sun's rays, and where the animal was employed as scavenger for other animals, to be sleek-looking, fat, clean or quiet. I have seen many pens where the mud and offal was two or three feet deep, and no place of retreat left for the poor occupants upon a higher spot, excepting the bed floor, and that unfurnished with straw.

## Horticultural.

### Peterborough Horticultural Society.

We have been favored with a copy of the constitution and by-laws of this society, organised in April last, by its President, the Rev. V. Clementi. It must have been gratifying to all lovers of the Horticultural art; to notice the gradual formation of regularly organised societies over the country, for creating and diffusing a taste for what is most attractive and beautiful in nature, refining and elevating man's feelings and aspirations, and at the same time laboring and ministering to his physical necessities. Gardening, in its various departments, may be regarded as a true measure of the wealth and progress in other words, of the civilisation, of a people. It is the accompaniment of its robust, and, perhaps, ruder sister, agriculture;—and we trust the county of Peterborough will, in due time, become as distinguished in the former art as has now been for years in the latter. The society, if properly sustained, will, in time, be able to record from time to time its progress, and cordially respond to the sentiments expressed in the concluding paragraphs of the report;—

“Let no one be deterred from preparing specimens for competition by the slender extent of the space at disposal for their cultivation: a garden is so small as to be unable, with careful attention, to produce the finest vegetables; a window-sill may be the *habitat* of a plant of sufficient excellence to entitle its owner to a prize. A competitive exhibition of specimens is the only method of satisfactorily ascertaining the merits or demerits of a plant; and in our opinion is a lesson so easily acquired, or information so pleasantly obtained.

The cultivation of a garden is one of the pleasures of this life least subject to

is indeed an essential element toward the attainment of success; but were it not so,—did each flower expand its charms in full perfection; did every kind of fruit most exquisitely satisfy the taste without such toil, our enjoyment, whether of the palate or of the sight, would be materially diminished. *Labor ipse vincit.*

Man is so constituted by nature that what he obtains without an effort is comparatively worthless in his eyes. An easy victory, whether on the battle-field, on the cricket ground, at the assembly, in the assembly,—is unappreciated: and so with respect to the pursuit whose claims our attention we now advocate—the harder our contest with the climate, with situation, or with soil, the more intense will be our gratification if we finally attain the prize—*laborum dulcedinem.*"

### Hamilton Horticultural Society.

The Second Exhibition of the Hamilton Horticultural Society for the season, was held in the Mechanics' Hall, on the 21st, inst. Owing to the lateness of the season the entries were not so numerous as on former occasions. The classes, Geraniums, Calceolarias, Green and Hot House plants from the gardens of W. P. MacLaren, John Young, R. Juson and John Brown, Esquires, were all very good.

The 1st. Prize for the 12 Green and Hot House plants, was taken by W. Hill, Gardener John Brown, Esq. Varieties, Pentas carnea, *Sida heterophylla*, *Hoya bella*, *Stephanolis abundans*, *Torenia Asiatica*, *Vinca Alba*, *Rosa juvacea*, *Cupnea platycentra*, *Euphorbia* gardens, *Gardenia Florida*, *Erica Ventricosa* *Ida*, and *Calceolaria rugosa*.

The 2nd. Prize in the same class by I. Buchanan, Gardener to W. P. MacLaren, Esq. Varieties, *Angelonia gardenii*, *Lantana*, *Marquis La Porta*, *Gesnera Zebrina*, *Glorinia grandis*, — Novelty, *Glorinia Charles Dickens*, *G—Madam Bogere*, *G—exquiritia*, *Calceolaria* *caerulea*, *Hydrangea hortensis*, *Elcheias salicifolia* and *Archimenes ambersoa Verschaffelt*.

The 1st. Prize for the 6 Green and Hot House plants was carried off by H. Shaw, Gardener to R. Juson, Esq. Varieties, *Lantana* *caerulea*, *L—ewingii*, *Polygala myrtifolia*, *Hydrangea hortensis*, *Myrtus floraplana* and *Elcheias salicifolia*.

The 2nd. Prize by I. Buchanan. Varieties, *Glorinia argyreneas*, *G—imperialis*, *Vinca alba*, *Campanula splendens*, *Lantana liliifolia* and *Gesnera Zebrina*.

The 1st. Prize for the 4 Fuchsias by I. Buchanan. Varieties, *Venus de Medici*, *Guiding Star*, *Banks*, *Glory*, *Pearl of England*. 1st. Specimen, *Venus de Medici*.

2nd. R. Murray, Gardener to John Young, Esq. Varieties, *Banks*, *Glory*, *Kocsuth*, *Venus*

*de Medici* and *Guiding Star*. 2nd. Single Specimen, *Banks*, *Glory*.

1st. Prize for the Best 4 Pelargoniums was taken by I. Buchanan. Varieties, *Lopens Elegans*, *Maria King*, *Butterfly*, and *Arnold's Virgin Queen*. 2nd. Single Specimen, *Mrs. Holford*.

2nd. Best 4 Pelargoniums, H. Shaw. Varieties, *England's Queen*, *Elegans*, *La Creamon*, *Confideree*. Best Single Specimen, *Elegans*.

1st. Prize for Fancy Pelargoniums, R. Murray; 2nd. H. Shaw. Best 6 distinct *Petunia* I. Buchanan, also the Best 6 *Verbenas* in Pots; 2nd. R. Murray. *Pansies* by Wm. Chapman, Gardener to Isaac Buchanan, Esq. Sweet *Williams* and *Pinks*, 1st. *Bruce & Murray*; 2nd. D. MacNabb, Esq. *Venus*, Best 12 *Trusses*, I. Buchanan; 2nd. H. Shaw; *Cottage Window Plants* by G. Fessal, and W. Michael; Mr. Freed for *Flowering*, *Strubs* and *Native plants*. *Roses*, *Hardy*, best 18, *Bruce & Murray*; 2nd. W. Reid, Gardener to Sir Allan N. MacNabb. Best 12 *Hybrid Perpetual Roses*, *Bruce & Murray*; 2nd. W. Reid; Best 6, *Bruce & Murray*. Best 12 *Summer Roses*, W. Reid; 2nd. *Bruce and Murray*. Best 6 ditto, R. Murray; 2nd. *Bruce & Murray*.

The Early Fruits were few but very good. The Prizes for Strawberries were gained by T. Barner, Gardener to P. Grant, Esq., H. Shaw, Jas. Freed, and Jas. Wilds; the Melon Prize, by W. Chapman; and those for Apples and Pears in the best state of preservation by J. Depew, T. Lottridge and T. Smith; of Cucumbers there was a good display, the Prizes were obtained by R. Murray and W. Chapman. The entries in the Vegetable departments were few. 1st. Prize for Asparagus I. Buchanan; 2nd. H. Shaw. Lettuce and Onions by James Wilds. Potatoes by W. Hill and C. Meson. Peas by H. Shaw, and C. Meson, Gardener to T. Kerr, Esq. Rhubarb and Radishes by W. Hill, J. Freed and J. Wilds. French Beans, C. Meson. Carrots, Parsley, and Water Cresses, W. Chapman, I. Buchanan and J. Wilds. Judge Logie obtained a special Prize for Native flowers cultivated in pots. Varieties, *Sarracenia purpuria*, *Pentstemon pubescens*, *Piatanthera Hookeri*, *Cypripedium pubescens*, *Cypripedium acaule*, *Hydrophyllum virginicum*. Amongst the Special Prizes and worthy of the highest commendation were two Vines from W. P. MacLaren, Esq., and a Peach tree from John Young, Esq., all were in pots and full in fruits. The Grapes were ripe and very beautiful. A Special Prize was awarded to A. Stevens for *Antivrhinum*s and *Phlox drummondii*.

Bruce & Murray exhibited a fine collection of Green and Hot House plants, including some fine new Fuchsias and Geraniums, also some very fine Orchard House trees of Peaches, Nectarines and Figs.

GEO. LAING.

Hamilton, 27th June, 1841.

### Antiquity of Potato Planting in Scotland.

A correspondent sends us the following interesting article from the pen of Mr. P. Mackenzie of Plean, Stirling, contributed to the *Gardener's Chronicle* :—

"In the article 'Horticulture' in the 'Edinburgh Encyclopædia,' written by the late Dr. Neil, we are told that the cultivation of potatoes in Scotland was very little understood till about the year 1740, and it was not practised in fields till about twenty years after that period. It is stated in the 'General Report' of Scotland as a well-ascertained fact that in the year 1725-6 the few potato plants then existing in gardens about Edinburgh were left in the same spot of ground from year to year as recommended by Evelyn; a few tubers were perhaps removed for use in the autumn, and the parent plants were then well covered with litter to save them from the winter's frost. If the above statement is correct, old John Reid, gardener to Sir George Mackenzie, Rosehaugh, must have been far ahead in potato cultivation and the mode of cooking them, for in his 'Scots Gard'ner,' published in 1683, he tells us to cut potatoes in as many pieces as you please, provided there be an eye at each piece, and plant in March, five rows in the bed; plant not deep, neither in wet nor stiff ground, and in housing spread only over a broad floor. His method of cooking them might be relished by many of the present day. He tells us to boil and peel, chop and bruise them well pour on butter, and set them on a coal, and if you please strew a little cinnamon upon them, or, for want of butter, take sweet milk. What may be called the fathers of horticultural writers in England appear to have been well learned men for the age they lived in, but it is some honour to the craft in Scotland, that it was a working gardener who wrote the first system of gardening for Scotland. Dr. Neill remarks that Scotland has been more distinguished for producing excellent practical gardeners than good publications on the art of gardening. There does not appear to have existed any Scottish system of gardening as a separate book till 'The Scots Gard'ner' was published by John Reid. The work is divided into two parts, the first treating of contriving and planting of gardens, orchards, avenues, and groves; the second of the propagation and improvement of forest and fruit trees, kitchen herbs, roots, and fruits, with a gardeners' calendar, the whole adapted to the climate of Scotland. The style is very inaccurate, but the matter evinces not only an acquaintance with previous horticultural works, but a practical knowledge of the subject. The season recommended by Reid for planting the potato, and his method of preserving it, may be kept in mind by cultivators of the present day. The parish of Kilsyth, Stirlingshire, claims the honor of having potatoes first planted in the open fields in Scotland. In the 'New Statistical Account of Scotland,' it is stated that 'It is the early and successful cultivation of the most useful *Solanum Tuberosum*

(potato) on which the fame of this parish in so far as botany is concerned, chiefly depends. It not only gave birth to the gentleman who first introduced the culture of potatoes into this country, but it was the scene of his earliest experiments. The gentleman referred to was Robert Graham, Esq., of Tamrath, in the East Barony. It was in the year 1739 that he commenced the work of utility. Before that period he and others had raised the potato in gardens, but there was a prejudice against raising it in fields. He planted half an acre of ground on the croft of Neilston, the north of the town of Kilsyth, where he at that time resided as factor on the estate of Kilsyth. This excited the attention of the neighbourhood and the practice spread extensively. Some noblemen, as well as farmers and agriculturists, came from a distance, among others the unfortunate Earl of Perth, to observe the mode of culture and the success of the experiments. Mr. Graham rented lands in the vicinity of Renfrew, Duntoch, Glasgow, and Edinburgh, and for many years obtained premiums for cultivating the potato. But was Mr. Graham the first who cultivated the potato in the open fields in the parish of Kilsyth. In older books we are informed that in 1711 Thomas Prentice, a day labourer, first planted potatoes in the open fields in Kilsyth, and the success of the experiment was such that every farmer and cottager followed his example. On remarks, 'What honor does he not deserve. He appears to have been eleven years in the field before Mr. Graham.'"

### Transactions.

#### Abstract of Reports of Agricultural Societies received in the year 1860.

(Continued from page 348.)

#### WELLAND.

COUNTY SOCIETY.—Ninety members; amount of subscriptions, \$110; balance from previous year, \$204.61; deposited by township societies, \$269; Government grant, \$599.96; total receipts, \$1183.57. Paid to township branches, \$629; paid premiums, \$312; expenses and sundries, \$85.22; balance in Treasurer's hands, \$124.23.

#### TOWNSHIP BRANCHES.

BERTIE.—Forty members; subscriptions, \$41; balance from 1858, \$8.13; Government grant, \$54; total received, \$103.13. Paid in premiums, \$99.75, expenses, \$8.50; balance in hand, \$3.88.

CROWLAND.—Report defective.

HUMBERSTONE.—Forty members; subscriptions, \$44; Government grant, \$54; total

received, \$98. Paid in premiums, \$78.86 ; expenses, \$19.14.

### Extracts from Report.

As regards the Agriculture of the township, that improvement which is desirable has never been earnestly sought after, much less arrived at, nevertheless a great advance from the former state of things has been effected. Much flat land, formerly covered, Spring and Fall, with surface water, is now producing remunerative crops, having been grubbed and laid dry by surface drainage. Thorough or underdraining has not been introduced. More attention is paid to hoed crops than formerly, and, as a natural consequence, farms are becoming annually less infested with noxious weeds, and are more productive generally. More stock is kept, and of better quality. There is in this township a great variety of soils, ranging from a very hard red clay to a light blowing sand ; there is, however, but little of the latter, and that near the shore of Lake Erie.

The level or flat lands of the township, which in fact comprise the largest part, are generally composed of a red clay, covered with a black vegetable mould, varying from a few inches to several feet in depth, and this description of soil in Humberstone makes excellent farming land if properly cultivated. In general, after a few years cultivation of the soil in question, the plough will bring up a portion of the subsoil, which readily pulverizes, and is well adapted to the growth of all kinds of grain, as well as roots and grasses.

We have also a considerable portion of sandy loam and gravel, which generally rests on limestone rock, the surface of which is in many places intermixed with small flat stone belonging to the same strata. The latter description of soil was cleared up and put under cultivation by the early settlers, and is by many considered the best land in the township at the present time. The arguments in its favour are, that it is surest to produce an average crop, that the straw is shortest and grain heaviest. This soil is naturally underlain, the rock on which it rests being generally porous. Of all the lands under cultivation in this township, there are but a few acres injured to any great extent by subterraneous moisture.

There is in this township, and still in a state of nature, a considerable portion of marsh land, consisting of three distinct parcels ;

namely, on the west side, about 3000 acres, known as part of the Great Cranberry Marsh ; in the north-easterly part of the township, a tract of about 700 acres, called marsh, but which might more properly be denominated prairie land ; and in the easterly part, about 3000 acres.

From the facts stated, it may be readily inferred, that the value of land in this township, per acre, must vary materially. We estimate farming lands in this township to range from \$20 to \$50, per acre, according to soil, improvement, &c. ; and as an instance, we quote 50 acres that were sold this winter, 38 under cultivation, and 12 in a state of nature—neither orchards nor buildings of any description on the lot, for which \$1000 in cash was paid. The land in question lies about two miles from Port Colborne, and the soil is about an average of the farming lands in the township.

The wages of labor, as paid by farmers, varies very much, as there are many immigrants among us, the most of whom are not as profitable farm laborers as those that are naturalized. We may quote wages at from \$75 to \$120 per year. And here we beg to suggest, that it is the prevalent opinion of our Committee, that if the Board of Agriculture would, through their journal, urge upon farmers the propriety of giving a worthy servant, when taking his leave, a letter of recommendation to their brother farmers, striving to give the bearer's true character as a farm labourer, great good to the worthy labourers and farmers would be the result. Carpenters generally get \$1 per day, and board, other mechanics about the same. The above mentioned low wages have only prevailed since the existence of the present depressed state of financial affairs.

As regards crops in this township, *Wheat* has been materially injured for the last three years by the midge. It is the opinion of your Committee, that the harvest of 1858 did not yield more than *two bushels* to the acre ; but the harvest of 1859, was somewhat better—average yield about *eight bushels*.

The common grasses cultivated are the red and white clovers and timothy. Of the red clover there are two kinds, a small and early variety, which produces two crops in a season—the second crop being generally cut for seed, or used for pasture ; however, a second crop of hay is sometimes cut, yielding two tons to the acre, if the season is favour-

able and the land well cultivated. The other grows larger, blossoms later, and ripens about the same time as timothy. The seed must be obtained from the first crop, as the after growth never blossoms.

Hitherto, little has been done in the cultivation of root crops, except potatoes; an improvement, however, is going on in this respect. In 1859, a number of our farmers cultivated a small piece of mangel wurzel, ruta бага, carrots, or turnips, and, so far as we are aware, all who gave root culture a trial are satisfied that it can be made profitable. Previous to 1859, but few attempted the culture of roots to any extent, or advocated its feasibility. The increased cultivation of Indian corn and potatoes, particularly the former, which a few years since was grown only to a very limited extent, your Committee regard as one of the most marked advances in the agriculture of the township.

**FARMING IMPLEMENTS.**—In reference to agricultural utensils, that advance which is desirable has not been made; but a number of valuable implements have recently been introduced among us, such as mowing machines, reaping machines, &c. Our ploughs are very good, consisting principally of those manufactured by Messrs. Hann & Dobbie, of Humberstone, and Mr. Morley, of Thorold; but we consider the harrows in use among us of very inferior quality, with the exception of some few that have been introduced recently, and those are mostly what is called the Scotch harrows.

**HORSES.**—A great general improvement has taken place in horses, neat cattle, sheep and swine. The class of horses more generally raised, are those best adapted to agricultural purposes; however, some fine specimens of heavy draught horses have been grown among us; also, quite a respectable number of good coach horses; the latter class are generally bred from stallions possessing, in a considerable degree, the Cleveland bay blood. A number of fine horses grown in this township have been sold within the last year, at remunerating prices, to speculators who exported them to the Southern States.

**CATTLE.**—As regards our neat cattle, improvement has been mostly in the line of grades, by breeding from native or grade cows, and pure bred *Durham* bulls, with a sprinkling of *Devon* and *Ayrshire* grades; nevertheless, some of our more enterprising

farmers have effected much in the right direction, by procuring some splendid thorough bred *Durham* cows, and raising young stock which compare favourably with herds of the most noted breeders in our own and the adjoining counties. The *Durhams* and their grades are deemed the most profitable breed of cattle by our best farmers, all things considered.

**SHEEP.**—In sheep husbandry, much improvement has taken place. The thorough bred sheep introduced among us, so far as your Committee are aware, have been *Leicesters*, and *South Downs*; and by far the larger number of the sheep in the township consist of grades bred from native or grade ewes and *Leicester* or *South Down* Tups—the quantity of each being about equal. There are a few flocks of pure breeds, of both the above-mentioned classes, and each class has its advocates as well as its good qualities.

**SWINE.**—The *Berkshire* blood prevails in our swine; of late, however, there have been some fine specimens of the *Suffolk* introduced among us, which are much admired, and in the opinion of your Committee will do much to improve the stock—a cross between these and the larger breeds has thus far turned out quite satisfactory.

**POMOLOGY.**—The extreme cold winter of 1856 proved very destructive to our fruit trees generally. The greater part of the peach trees and plum trees died under the ordeal, and such as were not killed were much injured that they have produced no fruit of any consequence since. Apple and pear trees were injured to such an extent the numbers have died in consequence every year since. In addition to all this, the apple trees have been much injured, and many orchards literally destroyed by an insect called the *Borer*, a worm that enters the trunk of the tree near the ground, and commits more or less injury, sometimes girdling the tree and producing death the first year; but whether so immediately fatal or not, every orchard that becomes infested with those worms appears doomed to destruction in a very few years, unless, by the watchful care of an intelligent person, the pests are extirpated, and your Committee know no other way of doing it, than by frequently examining every tree, and, where depredations are committed following the intruder, either by cutting away the bark with a knife, or inserting a wire

the orifice and destroying it. If the remedy is strictly adhered to, for one year, the orchard will be nearly or quite rid of a pest that, it let alone three years, will rid the owner of his orchard, and breed enough of these destructive insects to be a serious injury to all the orchards in the neighborhood. Aside from the above drawbacks, there are a few fine orchards in the township which are annually producing large crops of extra fruit, probably equal to any in Canada. Those orchards are principally protected on the south-west by a belt of evergreen trees, a rise of ground, or some other natural or artificial protection from that quarter. Where good orchards are properly attended to, they prove very profitable, and under the above-mentioned circumstances, the crop of fruit was good in 1859, notwithstanding the heavy June frosts.

**HORTICULTURE.**—There is not so much attention paid to this branch of husbandry as is desirable, though there are many good kitchen gardens which contribute largely towards the support of the owners' tables, as well as the comfortable appearance of their domiciles. A few of our citizens have entered into the cultivation of flower gardens and shrubbery, to such an extent as to make their homes appear most attractive; and your Committee earnestly hope and verily believe that their worthy example will soon be followed by many.

**THE POPULATION.**—The yeomanry of this township consists principally of Pennsylvania Dutch, and their descendants, interspersed with English, Irish, Scotch, Germans, Americans, and a few from almost every civilized nation on the face of the globe. The first mentioned class, although not the most enterprising people in the world, rank high in the scale of industry and morality.

**PELHAM.**—Sixty-nine members; subscriptions, \$9.75; balance from previous account, \$65; Government grant, \$74.25; total received, \$149.55. Paid in premiums, \$107.00; expenses, \$29.69; balance in hand \$12.24.

**STAMFORD.**—Fifty-four members; subscriptions, \$58; balance from previous year, \$86.00; public grant, \$101.25; total received, \$245.54. Paid in premiums, \$193.24; expenses, \$14.04; balance in hands of Treasurer, \$38.26.

**TROLD.**—Subscriptions, \$61; balance from previous year, \$25.79; Government

grant, \$76.50; total received, \$163.29. Paid in premiums, \$128.46; expenses, \$15.54; balance in hand, \$19.29.

**WILLOUGHBY.**—Report imperfect.

**NORTH WELLINGTON.**

**COUNTY SOCIETY.**—One hundred and thirty-eight members; subscriptions, \$156.50; balance from 1858, \$83.27; deposited by Township Societies, \$321; received from sale of prize grain, \$22.27; Government grant, \$479.98; sundries, \$2.18; total received, \$1065.22. Paid Township Societies, \$599.86; premiums, \$306.50; expenses, \$115.93; balance in Treasurer's hands, \$42.93.

**TOWNSHIP BRANCHES.**

**MARYBOROUGH.**—Forty-six members; amount of subscriptions, \$48; balance from previous account, \$26.90; share of public grant, \$45.13; total received, \$120.03. Paid in premiums, \$89.87; expenses, \$17.89; balance in hand, \$12.27.

**MINTO.**—Fifty-one members; amount of subscriptions, \$58; share of grant, \$52.03; receipts at show, \$13.50; total received, \$123.53. Paid in premiums, \$73.75; expenses, \$18.05; balance in hand, \$31.73.

**NICHOL.**—Eighty-seven members; subscriptions, \$87; share of grant, \$78.90; receipts at show, \$16; total received, \$181.90. Paid in premiums, \$135.50; expenses and sundries, \$47.95; balance due Treasurer, \$1.55.

**PEEL.**—Fifty-one members; amount of subscriptions, \$51; balance from previous year \$72.12; share of grant, \$37.34; special subscriptions, entries, and sundries, \$24.50; total received, \$184.96. Paid in premiums, \$103.75; expenses, \$36.64; balance in hand, \$44.57.

**PILKINGTON.**—Eighty-four members; amount of subscriptions, \$91.50; Government grant, \$75.42; total received \$166.92. Paid County Society, \$10; premiums, \$117.50; expenses, \$39.42.

**SOUTH WELLINGTON.**

**COUNTY SOCIETY.**—Two hundred and fifty-four members; amount of subscriptions, \$297.50; balance from previous year, \$33.55; deposited by Township Societies, \$638; Government grant, \$479.98; receipts at show, \$5.25; total, \$1454.28. Paid Township Societies, \$918.80; premiums and expenses, \$194.71; balance in Treasurer's hands, \$50.77.

*Extracts from Report.*

The well directed efforts in this county for the improvement of every description of stock, and the desire evinced to secure the services of the very best male animals, gives incontestable evidence of the conviction, that it is much more profitable to raise, and feed, a good animal than a bad one; and when considered as an investment, the procuring of the best animals to breed from, must ever claim the earnest attention of all intelligent farmers.

The past summer was not the most congenial for the growth of the turnip crop, the excessive heavy rains in many places did serious injury to the young plants, and in many fields it was found necessary to plant a second time, which rendered the plants puny, and consequently not so productive as those in more favored localities. The directors are of opinion that the average yield will not exceed four hundred bushels to the acre.

In connection with the subject of feeding stock, the directors are of opinion that as our pastures generally fail of yielding a full supply of feed about the months of July and August, thereby causing great inconvenience and loss, they are anxious to call your attention to the advantages which would accrue from the raising of some kind of green crop, available about that time, such as Rape or Vetches, or some kind of Millet. If the Hungarian Grass, which is at present comparatively but little known amongst us, would produce a supply to meet the requisite demand, it must be very obvious that a more extensive knowledge of its properties and productiveness is most desirable. They are also aware, that to raise these crops successfully, in addition to the usual breadth of root crops, a liberal supply of manure would be required, and, should the limited resources of the barnyard be insufficient, they are of opinion that bone dust would be the most convenient application.

With regard to the crops of the past year, the Directors would remark, that although the Fall Wheat in several sections of the county suffered severely from summer frosts, and in some fields to the destruction of the entire crop, yet, notwithstanding, a considerable breadth escaped to a great extent, so that in estimating the entire yield, they are of opinion that it would be about 15 or 20 per cent below an average crop. Spring wheat was fortunately more extensively planted than usual, and the sample is generally good, some very fine, both in color and quality, and at present prices will

no doubt prove remunerative to the grower.

It is pleasing to observe, at our exhibition the improvements that have taken place in cattle since the Durhams or Short-horns first brought into this county. Although they were not generally appreciated at a time when who can now put a proper estimate on a breed conferred by those who have introduced them into this neighborhood? They have since become the favorite breed in this section of the province. The community is greatly indebted to F. W. Stone, Esq., of Guelph, having on several occasions imported from most eminent breeders in England. An infusion of fresh blood has thereby been introduced, and the high character which this county has maintained for superior stock is still fully maintained, with every probability of its continuance. This breed is distinguished for their early maturity and propensity to lay on flesh, and render them eminently adapted for feeding purposes. Of this we had ample proof at the Fat-Cattle Show in December last; two two year old well bred grade steers were exhibited and afterwards sold one for one hundred dollars and the other for one hundred and thirty dollars. The latter was awarded the prize for a six weeks staked as the best fattened beast, competing with a pair of oxen afterwards sold for two hundred and fifty dollars.

The Leicester breed of sheep have prevailed in this county for many years, but since Mr. Stone imported and introduced the Cotswold many of the farmers prefer a cross with this breed, and in their opinion this has materially improved their flocks, producing a heavier fleece and heavier carcass. We have much pleasure in being able to state that Mr. Stone has again added to his valuable stock by the importation of about twenty Ewes and Rams of the Cotswold breed, from the most celebrated flocks in Britain. An infusion of fresh blood cannot fail to exercise a beneficial influence, and as this breed of sheep appears to be well adapted for this climate, and is every year more appreciated, we trust Mr. Stone will be amply repaid for his untiring enterprise.

The monthly Fairs for the sale of cattle in the town of Guelph, have proved very beneficial to the farmers of this county, and also for the Toronto, Montreal, as also the New York and Boston markets are constant risers thereat.

## TOWNSHIP BRANCHES.

ERAMOSA.—One hundred and one men's subscriptions, \$130; Government grant, \$100.

balance from previous year, \$34; total paid, \$217.55. Paid in premiums, \$158. Expenses, &c., \$15.30; balance in hand \$75.

#### *Extracts from Report.*

The soil of this township is somewhat level, the base or southeasterly section is better adapted to the growth of Fall wheat than the middle section. The soil of the lower portion of the township is a rich gravelly loam, and with limestone, resting on a dry gravelly soil. The soil of the upper section of the township is a deep stiff loam, requiring much special drainage. Some drainage has already been accomplished, but much more remains to be done to render the fall wheat plant free from heaving with the spring frosts, and to render the soil sufficiently dry for early cultivation of the spring crops.

The average value of farms per acre, with buildings thereon, from actual sales during the past year, is twenty-six dollars, but just however to state, that the few sales that have been effected were forced sales; owners of good farms with suitable buildings for farming operations do not feel disposed to take that sum per acre.

The system of cultivating for the fall wheat is principally by summer-fallow, the crops selected are clover and timothy sward for one or two years, and pastured one or two years. The sod is broken up to the depth of 6 or 7 inches in the spring of the year, and generally receives three ploughings in the seed furrow, with intermediate harrowings and cultivating. Some farmers, however, adopt the system of ploughing the first time somewhat later on even surfaces, and then harrow and cultivate to keep down the weeds and kill the weeds that spring up in the spring, until the last week in August, or the first of September; they then plough the seed furrow, and harrow in the seed, and if the soil and soil are suitable they succeed very well by this system of cultivation.

The Fall wheat was much injured by the late frost in the month of June, last summer. While some fields were only slightly injured, the bulk was very much so, so that the average returns must necessarily be put very low, not exceeding 10 bushels to the acre. The township on the whole is well adapted to the growth of Spring wheat, but especially the middle section; this crop is generally grown on potato and turnip land, and on clean manured pea stubbles, and was

more productive and of much better quality than it was in the year 1858, although the variety known as the Ohio Club Wheat suffered a good deal from rust. A considerable quantity of the Fife Wheat was sown, and has so far escaped the rust, but the greater proportion sown was the Ohio Club variety. The actual return of the Spring Wheat crops, would not on the average exceed 20 bushels per acre.

The early Fall wheat crop was injured by June frost, and the late by both rust and frost, and the Ohio Club variety of spring wheat was injured by rust. The wheat crop was not injured the past year by any insect, but on some previous years the crops suffered to a limited extent by insect, and the Spring wheat on some lands has been slightly injured by wire worm.

The soil is well adapted to the growth of peas, large quantities are grown by the farmers in proportion to other grain. They are generally grown on wheat or oat stubble, ploughed in the fall and well cultivated in the spring at the time of sowing; the average return per acre was 30 bushels. The pea crop was free from the ravages of the pea bug. The soil is also suitable to the growth of barley, but the extra expense and trouble of harvesting and threshing deter many from sowing it, more however was sown than in previous years. The two rowed barley is preferred if the land is in a proper state of tillage; if not, then the six rowed is preferred. The average returns will be 35 bushels per acre. The land best adapted for the growth of barley is that after potatoes and turnips, but the farmers consider that the wheat crop on these lands is more remunerative, consequently a rich fall wheat stubble is generally taken, and when well pulverised, sown in May. The soil of this township is also very suitable to the growth of oats and a large breadth is sown with this crop. The land is generally ploughed in the fall of the year, and well cultivated before sowing in the spring, the return from the oat crop however is not so great as it was for many years after the early settlement of the township. The principal cause of the falling off is most likely the over cropping of the land; the average return was not more than 50 bushels per acre. The oat crop was not injured by insect or blight.

The current rate of wages for labourers this year was from \$9 to \$11 per month, and of mechanics \$1½ per day.

The soil is admirably adapted to the growth of roots, viz., potatoes, turnips, mangel wurzel, carrots, cabbages &c. Potatoes are not cultivated on a large scale in the township, farmers raising from one to three acres each. The potato crop was much better last year than for some years previous, and the quality of the potato very good. The actual return however was not great, not exceeding on the average more than 200 bushels per acre. They were not injured by the rot. The turnip crop was more extensively cultivated than formerly, and succeeds well with good cultivation; the Swedish Turnip greatly predominates and is more extensively used for the fattening of cattle, and for feeding milch cows and young stock through the winter months, than any other root. The average return of this valuable root was 600 bushels per acre, and might be made much larger by superior cultivation. Some crops suffered a good deal from the Turnip Fly; they did not suffer materially from any other cause. Mangel Wurzel is only cultivated to a very limited extent, but succeeds very well, and great weight per acre might be raised by good cultivation. The small quantities that were raised were grown near the homesteads and taken to the stables and fed to the milch cows in the early fall when the pastures began to fail. The crop did not suffer from any cause. Field carrots succeed very well with good cultivation, but they are only raised in small quantities, for the purpose of feeding horses, and boiling for fattening hogs. The return of this crop was 600 bushel per acre.

The breed of cattle that prevail in this township are grade Durhams. The improvements have been slow but steady; they have been effected by putting thoroughbred Bulls to the native cows and then other thoroughbred bulls to their progeny, from the year 1836 to the present time. The result has been the produce of some very good cattle. There are but very few thoroughbred cows and heifers in the township, so that we have little or no experience of the profits of raising thoroughbred cattle for sale. The grade cows are used for dairy purposes, mostly for making butter; there is but little cheese made for the market. The calves to be raised are fed with new milk for some time after they are dropt, say from one to three months, then skimmed milk with the addition of a pint of peas and oatmeal mixed with it, to make up the deficiency for the loss of the new milk. The

peas and oats are mixed in the proportion of one bushel of oats to two bushels of peas, and ground at the mill. Calves can with this system of feeding be kept in good growing order during summer and early fall months at a very trifling cost, thereby saving the extra cost of getting them up in condition during the winter, or the painful necessity of turning them out in the spring nothing but skin and bone, and partially ruined for life. The cows and young cattle are, during the winter months and until the time of pasture, fed with turnips and chaff, and the best of the straw. The young cattle and the cows that are not giving milk will, if they have comfortable shelter, keep in good condition with this treatment without hay, if they have a sufficient quantity of roots, not less than a bushel to a bush and a half per day according to the size of the animal. The cows that are giving milk, and calves, require the addition of a little hay to keep them in proper condition.

Greater numbers of cattle are fattened in the shambles than formerly, as a natural consequence arising from the greater breadth of the root crop. The actual returns from the feeding of cattle (independent of the extra quality of the manure, which is no small item to the farmer,) depend on the state of the markets, and the quality of the cattle, but will be from 50 to 100 per cent, this of course includes the cost of feeding. It is, however, to be lamented that there are too many farmers in the township who do not appreciate good stock, but leave their cattle to feed at the stable stack; and judging of the profits of breeding and feeding stock from this system, we should arrive at no very favorable conclusion. The advantages of raising good stock and properly taking care of them, require to be better known to be appreciated.

The sheep patronised in this township are of the Leicester breed, and they thrive very well, the township being well watered and the soil well adapted to the pasturage of both sheep and cattle. Sheep are a paying stock if good animals are raised and properly cared for. Raising wool for the market pays very well, as a fair flock of sheep will average 5 pounds of wool to the fleece, wether sheep are not kept here over one year old. The feeding during winter is pea straw with a very little hay, and a small quantity of turnips until lambing time, then hay and turnips.

The feeding of the aged sheep and she-

wethers, and wether lambs, pays very well. If fed early and fat enough for the Christmas market, and got to weigh 30 lbs. 35 lbs. per quarter, they are worth from ten to fifteen dollars each. If not fed so early, but brought into the market in the month of March, weighing 26 or 27 pounds per quarter, they are worth from nine to ten dollars each, and good fair wether lambs seven dollars each.

Hogs are kept in limited numbers by the farmers for their own consumption, and some for the market. The grain used for feeding is peas. The first pure breed that was brought into the township was the Berkshire; these crossed with the Berkshire and Suffolk breeds constitute the present stock of the farmer. The profits of feeding depend on comparative market value of pork and peas; some farmers are of opinion that taking a series of years fattening pork for the market is not profitable. With a good breed of hogs and a judicious system of feeding, taking into account the extra quality of the manure from the hog-pen, it will pay.

No farmer has commenced the thorough draining system, but a good deal of the better portions of the land have been drained more or less efficiently. The main drains are dug 4 feet deep, and the other drains leading into the main from 3 to 4 feet, and laid with stone in the bottom, this being the best material at hand for the purpose. The effect of the draining that has been accomplished is highly beneficial. The greatest difficulty that we have to contend with in draining is when we come in contact with quicksand, which is quite common on low wet land.—Tile would no doubt alleviate the difficulty were they at hand. Stone drains, if they are not particularly well laid are liable to choke in these places.

A considerable improvement has been effected in our ploughs by the importation of a good number from the factory of J. West, Rose Station, near Dundee; also fourteen manufactured by Sellars & Son of Huntley, Aberdeen, Scotland. There have been a considerable number made in the township from the model of these ploughs, supposed to be somewhat improved. There are others made in the township, after McSherry's pattern, St. Charles, C. W., and some from the shop of J. W. Thord. The cultivator has

been almost an indispensable article in farm culture, there are several made by different parties, but those made by Mr. Wm. Crowe, Guelph, are the best. A good number of Mowing and Reaping Machines are in use in the township.

The progress making in raising fruit orchards has been rather slow, and so far rather unsuccessful, the fruit being all destroyed last summer by the frost in June. A good many trees have been killed from different causes; one cause the extreme severity of the winter frost during past winters; another, the extremes of temperature in the spring; very warm weather causing the tree to start and the sap to flow freely, then cold north-westerly winds and frosts succeeding check the sap and crack the bark of the tree. Another cause and perhaps not the least is the over cropping of the orchard lands.

The greatest improvement that could be made in our farm management, would be the thorough draining of all the wet portions of the land; cultivating a greater breadth of land for roots and green crops, converting a much greater portion of the coarser grains raised on the farm, with the green crop, into beef, mutton, and pork, for the market, as well as keeping the store stock of the farm in proper condition, thereby greatly increasing the quantity as well as the quality of the manure heap, and by judiciously applying this extra quality and quantity of the manure to the soil. By attention to these points the farmer would be better enabled to fully develop the capabilities of his fields.

ERIN.—Eighty eight members; subscriptions, \$125.50; balance from 1858, \$32.07; receipts from other sources, \$31.50; total received, \$245.77. Paid in premiums, \$171.50; expenses, \$21.09; balance in Treasurer's hands, \$53.18.

#### *Extracts from Report.*

We suggest to future Directors that they make it, if not compulsory, highly desirable that everything shown be accompanied by a brief account of the soil and seed, when ploughed, and how manured, and the yield, which information should form a part of, and belong to the society, and would form a fund of valuable information to all.

The Township of Erin is making great progress in the improvement of stock.

The fall wheat was badly injured by frost last year; some fields which escaped averaged from 30 to 35 bushels per acre; those injured averaged 15 bushels per acre. The spring wheat crop was good, averaging from 20 to 25 bushels per acre. Oats and peas were average crops, oats 45, peas 30 bushels per acre. Hay was badly injured by the frost, and not more than half a crop. Roots in general were good. Turnips 500 bushels, potatoes 100 bushels per acre. The general way of raising potatoes and turnips is in drills, some preferring the raised drills.

There is a rapid improvement in Agricultural Implements, some very good iron ploughs are made in the township, also cultivators, Horse Hoes, and Turnip Drills.

The average wages of Mechanics is \$1 per day, laborers 50 cents. per day.

The Township of Erin is of a sandy loam, generally with clay and limestone bottom, and is more adapted to the raising of wheat, peas and roots than other grain.

The average value of land per acre is from \$20 to \$40 for good farming land. The general system of farming is that of summer fallowing and manuring for fall wheat; spring wheat is sown on pea and turnip land; seeding down is general with spring wheat; peas are generally grown on sward ploughed in the spring.

**GUELPH.**—Two hundred and twelve members; subscriptions, \$262; Government grant, \$108; total receipts, \$370. Paid balance due Treasurer, \$21.20; premiums, \$188.50; expenses, \$59.50; balance in hand, 80c.

#### *Extracts from Report.*

The remunerative prices now obtained for all kinds of farm produce, combined with the general good crops of the past season, have contributed largely to the prosperity of all classes of the community.

In referring to the probable yield of the crops in this township for the past year, fall wheat may be put down at not more than half a crop, not more than 12 or 15 bushels to the acre. Spring Wheat, which fortunately, was more extensively cultivated may be put down at about 30 bushels to the acre, chiefly of the Fife sort, which is now a general favorite amongst the farmers of this township. Peas, which were grown very extensively, chiefly for feeding purposes, may be put down at over 30 bushels

per acre. Oats at from 40 to 50 bushels and barley, which is not grown to any considerable extent, at between 30 and 40 bushels per acre. Hay has been rather a poor crop; but from the fact that a very large breadth of turnips was sown last year the short crop of hay will be but little felt amongst the farmers generally. It is very gratifying to observe that, the crops sustained little or no injury from the wheat fly or any other insect.

Roots for the purpose of stall feeding cattle, may be now considered as one of the staple productions of the Township of Guelph, possessing as it does, a soil well adapted to the cultivation of all kinds of roots, which, with ordinary care and management, will produce, from 5 to 600 bushels of turnips to the acre. The greatest drawback a few years ago in connexion with the turnip crop, was the labor and expense of cultivating and storing them, but such objections will now scarcely be made by a farmer of note, from the introduction of a better system of drill cultivation, with improved drills and scarifiers, and the spacious and convenient root houses, found almost every farmer's premises, capable of many instances of holding from 2,000 to 3,000 bushels.

The establishment of Monthly Cattle Fairs in the Town of Guelph, has been an immense benefit, not only to the farmers of this township, but of the whole county, bringing, as they do, buyers from every part of the province and neighboring States. It is admitted by all who have had an opportunity of witnessing our Fairs and Annual Exhibitions, that we possess a breed of cattle for fattening qualities inferior to none, but superior to most townships in the province.

The favourite breed of cattle in the township is the Durham or Short Horn, which dates its introduction from the splendid breed of animals imported into this part of the county, by Rowland Wingfield, Esq., and which has been still further improved by the recent importations of F. W. Stone, Esq., whom the farmers of the township are so much indebted for the opportunities afforded by him for the improvement of their stock, and the enterprising spirit he has shown in introducing such superior stock into this neighborhood. The sheep are generally of the Leicester breed, which has been much improved

crossing with the Cotswold, imported also F. W. Stone, Esq., giving an increase of wool and mutton, and producing a more healthy animal, than if bred from pure Leicester.

The raising of hogs is still carried on to a considerable extent by many farmers in the township, and the high prices obtained for a few years back have rendered it highly remunerative. A large proportion of the swine for a great number of years principally of large White or Yorkshire breed, which is raised to a large size and weight, but at a considerable expense of feed. This description of stock has been much improved lately, by crossing with the smaller breeds, such as Suffolk and Berkshire, producing a greater amount of weight in proportion to the food consumed. The pork fed in the township has always been held in high estimation in the Dundee and Hamilton markets, and is always sure to command an extra price for its superior quality.

As regards the general system of farming carried on in the township, considerable differences exist, even amongst farmers in the same neighborhood; but the former almost universal system of naked fallows for the winter crop is now almost abandoned, except in those places where it is absolutely required to get the lands clear from stumps and stones. The sowing of a clover sod in the spring and afterwards peas, followed either by fall or spring wheat with a good coat of barn-yard manure, sown by oats or spring grain, then roots, and afterwards sowing down in grass with spring wheat or barley, is a system which is highly recommended and carried out by a large number of the leading farmers in the township.

Water-draining is carried out to some extent in the township, and as drain tiles must be brought from a distance, at much expense, drains are generally laid with stone or timber, which answer very well.

**WENTWORTH.**—One hundred and forty-three members; subscriptions, \$157 25c.; balance from 1858, \$41 22c.; public grant, \$63; total received, \$261 47c. Paid in premiums for sheep and ploughing match, \$182 50c.; expenses, \$52 38c.; balance in hand, \$26 59c.

#### NORTH WENTWORTH.

**COUNTY SOCIETY**—One hundred and thirty-five members; amount of subscriptions, \$35; balance from 1858, \$39.48;

deposited by townships branches, \$375.50; grants from Municipal Council, \$175; government grant, \$479.98; received from joint exhibition, \$43 68; total receipts, \$1248.64. Paid Township Branches, \$663.49; paid on account of exhibition held in conjunction with the South Riding Society, \$520.48; expenses, \$41; balance in Treasurer's hands, \$23.67.

#### TOWNSHIP BRANCHES.

**BEVERLY.**—One hundred and sixteen members; subscriptions, \$117.50; Government grant, \$76.70; grant from Township Council, \$20; total received, \$214.20. Paid balance from previous year, \$2.55; premiums \$142.62; expenses, \$60.76; balance in hand, \$2.27.

**EAST FLAMBORO.**—Eighty-seven members; amount of subscriptions, \$130.50; grant from Municipal Council, \$40; share of public grant, \$116.19; total received \$286.19. Paid in premiums, \$228; expenses, \$55.04; balance in Treasurer's hands, \$3.15.

**WEST FLAMBORO.**—Ninety members; amount of subscriptions and donations, \$134; public grant, \$95.10. Paid in premiums, \$179.75; expenses, \$41.89; balance in hands of Treasurer, \$6.96.

#### SOUTH WENTWORTH.

**COUNTY SOCIETY.**—One hundred and four members; amount of subscriptions, \$108; balance from previous year, \$39.48; deposited by Township Societies, \$410; grants from Municipal Councils, \$175; Government grant, \$479.98; total received, \$1212.46. Paid Township Branches, \$697.98; paid on account of exhibition held in conjunction with North Riding Society, \$514.48. North and south Wentworth Societies organized a joint board for the purpose of holding an exhibition in common. The Treasurer of this joint committee received from the funds of the two societies, \$1056.95; receipts at show, \$174.37; total \$1231.32. Paid in premiums, \$370.75; expenses, &c., \$309.22; balance remaining in hand, \$51.35.

#### Extracts from Report.

South Wentworth is composed of five Townships—viz., Ancaster, Barton, Binbrook, Glanford, and Saltfleet, and occupies a surface of 136,800 acres of land, which is, with very few exceptions, in the hands of actual

settlers. A large portion of the riding fronts on Burlington Bay and Lake Ontario.

The climate is decidedly healthy.

The continuation of the Queenston Heights, stretching across Saltfleet, Barton, and Ancaster, causes considerable broken land in these townships. The land lying below the Heights—or what is commonly called "The Mountain"—is generally flat. Soil: sand, sand-loam, clay, and clay-loam. Above the Mountain the land is neither flat nor hilly, but gently and beautifully rolling. The soil, as below the Mountain, is irregularly distributed; loam and clay may be found in every township. On the whole, the soil is excellent, producing, with good culture, heavy crops of grain of every description, grass, and roots.

With very few exceptions there seems to be no regular system of culture. The six-course husbandry—thus designated: 1. drilled crops of all kinds; 2. spring wheat, or barley, or oats; 3. clover meadow; 4. pasture; 5. peas; 6. winter wheat—has been followed to some extent, but on the old cleared farms the five-course husbandry has become more popular. Under the five-course husbandry, one-fifth of the farm is each year occupied as hereunder:—1. drilled crops, turnips, potatoes, and Indian-corn; 2. barley; 3. clover meadow; 4. pasture; 5. wheat (varied occasionally, 4. wheat; 5. oats), though it is not approved to sow two grain crops in succession. This beautiful system keeps the land always in prime condition, and no crop being too often repeated, the properties of the soil necessary for its growth are not exhausted.

Under-draining is but little practised yet, but where it has been done the result has been highly satisfactory.

The average return of crops for 1859 were as follows:—

Fall Wheat,	15 bushels per acre.
Spring Wheat,	25 "
Barley,	30 "
Peas,	26 "
Oats,	42 "
Indian Corn,	60 bushels of ears per acre; much injured by frost.
Potatoes,	150 bushels per acre; rot to the extent of one-third.
Turnips,	21 tons per acre.
Mangel Wüzel,	18 "
Carrots,	25 "
Clover Hay,	1 "
Timothy Hay,	1 "

The fall wheat throughout the riding considerably injured, the midge having done more damage than in 1858. The ever-remembered frost of June contributed its share of destruction. Some fields were entirely destroyed by the latter. The rust also contributed its share of mischief. Upon the winter wheat was injured to the extent of one-half.

The hay crop was also much injured by June frost, which reduced the yield considerably; many old meadows not being worth cutting. Owing to the very fine growing season, however, the aftermath was very luxuriant, producing a good crop of clover seed.

Average value of farm land,—\$55 per acre.

**MANUFACTURES.**—The Cold-Spring Factory, owned by Messrs. H. & A. Eggeston, situated on the Cold-Spring Creek, in the township of Ancaster, manufactures latinetts, tweeds, cloth, and flannel.

Messrs. Theursson & Co., and McDonald & Gurnett, of Ancaster, are celebrated for their threshers and separators of which 50 to 100 are manufactured in the shop yearly.

Messrs H. & A. Eggeston, of Ancaster, are large, iron-founders, and makers of cloth-facturing machinery, ploughs, stoves, &c.

Mr. J. G. Crane, Ancaster, manufactures knit shirts, drawers, and hosiery, competing favourably with imported goods of that description.

Mr. M. Wiard also manufactures ploughs, gaug p'oughs, and seed drills of superior description.

Adam Condie, of Bartonville, manufactures iron and wood ploughs.

Sawed lumber is manufactured to some extent. We have in the county a good supply of grist and flouring mills.

#### TOWNSHIP BRANCHES.

**ANCASTER.**—One hundred and two members; amount of subscriptions, \$116; balance from previous year, \$26 28; grant from Township Council, \$40; share of provincial grant, \$93 34; entries and donations, total received, \$301 62. Paid in previous year, \$207 25; expenses, \$56 68; balance in hand, \$37 69.

**BARTON, BINBROOK, GLANVILLE, SALTFLLEET.**—One hundred and eleven members; subscriptions, \$132 50; balance from previous year, \$202 96; grant from Township Council, \$40, Government grant, \$64; total received, \$565 10. Paid in previous year, \$351; expenses, \$27 36; balance in hand, \$176 74.

## Editorial Notices &c.

### TO AGENTS—REDUCTION IN PRICE.

As we still have a considerable supply of back numbers on hand, we offer them to agents or Secretaries of Societies at the following reduced price. Every agent or officer of any Agricultural Society sending us two dollars, the price of four copies of the *Agriculturist*, for a year, will receive therefor five copies, from the commencement of the year, being a bonus of twenty-five copies, which will afford them a better remuneration for their exertions in obtaining subscriptions than our ordinary terms. The copies will be mailed to the individual subscribers, or otherwise, according to instructions. Agents also take subscriptions for the half year at the rate of one dollar per copy, 11 copies for \$2 50, &c., in accordance with our usual rates; but we would not recommend any new subscriber to take back numbers, from the 1st January to the end of the year, in possession of a large and handsome volume of 768 pages, containing a mass of information on every agricultural topic applicable to all seasons of the year, and which will be as valuable for reference on future occasions as at the present time.

### LOVELL'S GENERAL GEOGRAPHY.

Good general geography has long been required in our Schools, one which would afford our youth of Canada adequate information in regard to the extent, configuration and distinguishing features of the country in which they live, together with such an amount of general information as could be conveniently placed in their hands in regard to other countries. The work before us supplies the desideratum. While the American and the other British Provinces in North America have just that prominence given to them which is highly desirable and important in a work specially intended for the schools of the provinces, and which was to be found in the previous publication, other countries are likewise full justice done them in this work.

The work is a Geography and Atlas, containing over 100 large pages, embellished with maps and pictorial illustrations in engraving, printing, paper, and the whole execution of the work are excellent. The maps are printed with great clearness and distinctness. We consider this Geography far superior, especially for Canadian

schools, in many respects, to any similar work heretofore available to the public in this country, and we are surprised to see it sold at so low a price as the publishers have placed it, only one dollar. We hope to see this work become the standard class book, in its department, in our schools. Printed and published by John Lovell, Montreal; and sold by R. & A. Miller, Toronto.

### SECRETARIES OF AGRICULTURAL SOCIETIES.

This and following numbers of the *Agriculturist* will be sent to the Secretaries of Societies for the current year, so far as we are in possession of their names and address, having up to this date made use of the list of officers for last year. Such gentlemen, therefore, who may now receive the *Agriculturist* for the first time, will please accept this explanation as the reason of its being sent to them; such copies are sent gratuitously, in order that societies may be in possession of official returns, &c., of the Board. Secretaries of last year who have not been re-appointed this year will also please understand from this explanation, the reason of the paper being discontinued.

### SALE BY AUCTION.

A VALUABLE MILL PRIVILEGE IN YORKVILLE, only a few yards out of the city limits of Toronto, will be on sale by Messrs. Wakefield & Coate, at their Rooms, King Street East, on

The premises consist of a Brick Building, in which there is some machinery, formerly used as a brewery and distillery, with three acres, two roods and ten perches, more or less, of land. The site is admirably adapted for the above business, or general manufacturing purposes to which water-power is applied. Persons desirous of establishing in Toronto the manufacture of Agricultural Implements and Machines, would find this an excellent opportunity.

In the event of no sale being effected, the proprietor will put the premises in repair, and lease them, on liberal terms to any competent party desirous of having a mill privilege in this populous vicinity.

Particulars may be known by applying to Wakefield & Coate, Auctioneers, Toronto.

July 1st, 1861.

### BOARD OF AGRICULTURE.

THE Office of the Board of Agriculture is at the corner of Simcoe and King-streets, Toronto, adjoining the Government House. Agriculturists and any others who may be so disposed are invited to call and examine the Library, &c., when convenient.

HUGH C. THOMPSON,

Secretary.

Toronto, 1861.

**SEEDS! SEEDS! SEEDS!**

**TORONTO SEED STORE,**

**CORNER OF FRONT STREET AND WEST MARKET SQUARE.**

**T**HE Subscriber would beg to direct the attention of his friends, and the Public to his assortment of

**FIELD, GARDEN, AND FLOWER SEEDS,**

Comprising large quantities of *Turnips, Carrots, Mangel-wurzel, Cabbage, Onion, Parsnip,* and everything worthy of cultivation in this latitude. They are all of the best quality and procured from such sources as to warrant their genuineness.

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Toronto, April, 1861. 4-t.

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**A** PURE bred young short horn Bull; Sire a u Dam imported in 1857, and both took First Prizes at the Provincial Show in Brantford the same year.

*Address, R. R. Bown, Brantford.*

N. B. Full blooded cow stock taken in exchange, if desired.

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**T. L. HARISON, Morley,**  
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or at the *Agriculturist* office, Toronto.

March 9, 1861. 6t

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**TO LANDED PROPRIETORS**

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Paris, C. W. June, 1861

**The Agriculturist**

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

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