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THE

Canadian Agriculturist,

OR

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

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TORONTO, SEPTEMBER 1, 1860.

No. 17.

SEPTEMBER.

The beginning of this month will be occupied with the finishing of Autumn wheat sowing, where that operation has not been already completed. We have already entered upon this subject pretty fully. When the seed has been sown and properly sown and covered in, in well drained land, particular attention must be given to the drainage of the field. Where land is not thoroughly drained by tiles, which is of course rarely the case at present in this country, or where there is not a good natural drainage through the subsoil, the open furrows between lands should be cleaned out to the full depth the land has been ploughed, during the fall or if possible a little deeper, so that the water may not be over the surface and by evaporation solely, but that the superfluous water may also be allowed to escape to some extent by filtration through the worked surface into the dead furrows. The cross drains should of course be deeper than the parallel furrows, and should be carefully cleaned out at the intersections, and due attention given to the outlets, not only at the time of sowing the wheat, but also during the autumn and spring. An acre of good wheat is lost from neglect in a particular.

It is not the least engrossing occupations of the farmer during the middle and latter part of the month, will be the attending of agricultural Shows, Township, County, and Provincial. The arduous labors and anxieties of the summer and harvest seasons, the farmer

can afford to take his holiday, and to allow his wife, sons and daughters to participate in the same. But he attends the fair not merely for relaxation. He goes also on business intent, and will bring home a superior bred animal, or an improved implement, to improve his herd or flock, or his practice in cultivation at home. He also goes to obtain instruction, and will pick up many a new idea, which will be of service to him in the improved management of his business henceforth.

Potatoes will require to be taken out of the ground during the middle or latter part of this month. They should be thoroughly ripe before being dug; but as soon as quite ripe they ought to be taken up, to avoid the danger of wet weather and rot. Potatoes should be but lightly covered at first after being dug, so that the air may circulate through them, and dry them to some extent before they are covered in for the winter.

Fall ploughing, for next spring's crops, or next year's fallow will be required to be attended to as opportunity offers. The drainage of fall ploughed land must not be neglected, any more than of that in crop. If water is allowed to lodge and accumulate, the land will not be in near so good order in spring, or ready for sowing nearly so early as otherwise.

Cattle, horses, sheep and pigs should receive due attention, to keep them in good pastures, and as the cold nights approach, help them with a little green food, so that they may be in good heart on the advent of winter.

The Exhibition.

As we announced in our last, the exhibition has been appointed to take place at Hamilton, on the 18th, 19th, 20th and 21st September. The preparations are proceeding in the most satisfactory manner; and there is not the least doubt that except in the case of some unforeseen casualty this will be the most brilliant exhibition which has ever been held in the Province. The particular occasion on which this exhibition takes place, the visit of the heir to the throne of the British Empire, is one not likely to occur again for many years. We advise all of our readers by no means to lose the opportunity of being present at it, and taking some prizes, if possible. At the date of writing, August 30, fully 3000 entries of articles for exhibition have been received, and many no doubt will yet come to hand. Those who have not yet made their entries should do so immediately. We direct attention to an advertisement on this subject in another column. Particular attention is desired to the part of the advertisement relating to the placing of the articles on the grounds. As it is now ascertained that His Royal Highness and suite will probably visit Hamilton one day earlier than was anticipated, it will be absolutely necessary that every thing shall be brought to the grounds on Saturday and Monday, except cattle, and the cattle early on Tuesday morning, so that every department of the exhibition may be fully arranged early on Tuesday morning.

Editorial Correspondence.

[No. 5.]

THE EXHIBITION OF THE ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

DUBLIN, July 28th, 1860.

I will now attempt to give the readers of the *Agriculturist* a general idea of this great national gathering of Irish agriculturists, which was held in the ancient city of Cork during the present week. Having spent nearly a week in this interesting locality, I shall reserve for another communication some observations on the state and prospects of agriculture in the southern portion of the kingdom, and confine myself at present to the more prominent characteristics of the show, which I am bound to say both in the amount and quality of the material exceeded my expectations. The spacious corn-

market afforded excellent accommodation for stock with very little additional outlay, and implements and machines were conveniently arranged under covered sheds in a very extensive yard adjoining, and the whole arrangement exceedingly commodious and satisfactory.

The number of entries in the pure short class was 92, which contained several animals of very superior merit, bred in the country. I told that this class, in point of number, perhaps, in quality, hardly came up to the shows of the Royal Dublin Society, which is more favorably situated for the central northern parts of the country, where this brated breed is sedulously cultivated by the wealthy of the landholders and farmers. Devons there were only eight entries, and Ayrshires amounted to 22. The Herefords not represented, I think, by a single specimen. The Kerries comprised 34, with only a few of West Highlanders, Galloways, Polled Angus. The number of Dutch and crosses was considerable, several of the latter possessing excellent points, and of size. Horses of all kinds amounted to 80; sheep 180 lots; and pigs, 40.

The first prize of 15 sovereigns in the aged Durham bulls, was awarded to *Stat* 5 years, bred and owned in Scotland. He is a very fine animal, but decidedly inferior to Townley's Bull, which won the first prize same class at Canterbury. He is wide of a good loin and quarters, but somewhat in hair and inferior in the cups. The prize bull, and one or two others bred and in Ireland, clearly indicate the progress that has of late years been made in this important department of rural affairs in this country. A very remarkable animal among the Shewas was a four year old cow, *Rosette*, owned by Eastwood, Burnley, Lancashire, a neighbor of Col. Townley, and bred by Mr. W. Wood of Darlington. I saw this splendid animal at the Royal English Show at Canterbury, where she won the 1st prize against Mr. Booth's *Queen Mab*, an animal of great beauty, the highest breeding. In the Cork show she not only won the first prize in her class, but the *Purchell Cup*, of the value of 100 sovereigns, and the *gold medal*, thereby proving that she was the best of her kind in the yard. In fact I never saw her so well as she was such width and massive, yet beautiful.

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ce, the whole contour, especially the eyes and ad, denoting the highest style of breeding. Each of the young stock in the shorthorn class of a promising character, and cannot fail of doing much for Ireland. *Soubadour*, a young bull of 18 months, bred in Ulster, is particularly so both as regards touch and proportions, and especially obtained the 1st prize of 15 sovereigns and the gold medal. Among the Devons and Ayrshires, though upon the whole respectable, there was nothing that calls for particular notice, in a general and hurried sketch like the sent.

The greatest novelty to me among the horned cattle was the *Kerries*, which I was informed is the sole remaining native breed that Ireland still possesses. These are exceedingly small pretty looking animals, mostly black, and somewhat resembling the Bretons of Northern France, or the diminutive races of the Welsh mountains. The cows of this breed yield a large amount of milk of good quality in proportion to their size and the quantity of food they consume, and when well fattened their flesh is of excellent quality. I saw them in large numbers upon the mountains and valleys of the remarkable and picturesque County of Kerry, apparently thriving on coarse and scanty food. This race, if properly attended to, might possibly be made a fancy breed for certain parts of England and of Canada; they are in my judgment preferable to the Bretons. Of the *Dutch* breed there were several apparently good specimens, inferior to those I saw at the Paris Exhibition.

They are rather large framed animals, of various colors, with large patches of white, and they yield a large quantity of milk, not however, I am told, of the richest quality; therefore well adapted to cow-keepers in the neighborhood of towns. Among the crosses or grades, several sorts of Dutch cows from Shorthorn and other breeds, as a result I should think somewhat doubtful. I was informed, however, by several farmers that cross breeds in Ireland are generally well adapted to dairy purposes.

Among the Horses were some first rate animals, and others, (as is usually the case on these occasions) that ought not to have been brought forward. The best draught stallions were represented by the Suffolk and Clydesdale. Mr. *Suffolk Champion*, bred in England, a magnificent animal, almost absolutely perfect, was deservedly awarded the first prize

and challenge cup, and cannot fail to do good service for Ireland. There were a few excellent specimens of hunters and roadsters, and the fifty sovereigns challenge cup, and a prize of twenty-five sovereigns given by the Local Committee were awarded to *Planet*, as the best weight-carrying stallion, at present owned by an Irish gentleman at Kilmallock, and bred by the late lamented Lord George Bentinck, of England, to whom the world is largely indebted for no small portion of improved pure blood.

In sheep I was told the show was superior both in quantity and quality to any of its predecessors. And although much inferior in both respects to what I saw at the English Exhibition at Canterbury, there was a considerable number of very fine animals, which it would be difficult to beat any where. Indeed the second prize Leicester Ram at Canterbury was beaten at Cork. There were also some very good specimens of sheep, especially shearling rams, of the class of long wools, not qualified to compete as Leicesters, among them a few Cotswolds, possessing respectable merit. Of pure Southdowns the least said the better, after one had seen at the English Show the many beautiful and all but perfect specimens of this most beautiful breed, belonging to Jonas Webb, Rigden, and the Duke of Richmond. The Southdowns seem either not suited to Ireland or they have not as yet had proper attention paid to them. But in Shropshire Downs, and a few other varieties of short woolled sheep, the exhibition had several good specimens. The County of Cork carried off more than its proportion of sheep prizes, indicating that its dry and undulating surface resting on lime stone, is better suited to sheep culture than some other parts of the island. Indeed as a whole Ireland cannot be considered both as regards soil and climate so well adapted to sheep as either England or Scotland, but it is, perhaps, superior to both for the raising of cattle; and without neglecting sheep, it is to the latter the Irish farmer would find it his interest to direct his best attention.

I was surprised to find the show of swine so limited as to number, especially in a country where the pig has been regarded as an important and indispensable item in the ordinary husbandry. Swine, I am told are diminishing, while cattle of late years have greatly increased. The show in this department was good as to *quality*; there being some excellent animals both of the

large and small breeds. I also felt disappointed in the small amount of Flax and Poultry on exhibition, and there was no display of farm cereals, except a number of small specimens belonging to the ordinary collection of a seedsman, exhibited chiefly with a view to business purposes.

The Show of Implements was far more extensive than on any previous occasion, constituting a department that was both attractive and instructive in no ordinary degree. Several of the larger English makers were represented, but no inconsiderable amount was from Irish firms, clearly indicating the progress which has been made of late years in the agricultural mechanics of that country. Fowler's steam plough was put into operation on a farm at Blarney, and did its work admirably. Other implements and machines, such as ploughs, scarifiers, reapers and mowers were also tested, affording the spectators much interest and instruction.

The above will give the reader some general idea of this great national gathering. On the first day the admission being half a crown, the yard was not inconveniently crowded, and upon no similar occasion did I ever see so large a number of elegantly dressed and handsome women, who appeared to take great interest in the various departments of the exhibition. The Irish ladies have always been distinguished for natural grace and beauty, and those of Cork are considered to excel in these attractive qualities. The Grand Banquet of the Society was attended by some four or five hundred people, including a large portion of the Irish aristocracy. The Lord Lieutenant, who is very popular in the country, attended the dinner and delivered a very suitable and eloquent speech. The whole proceedings of the evening, and all I could otherwise learn, were full of faith and hope in the future welfare and prosperity of Ireland.

G. B.

Belfast, July 31st.

P. S.—I have now been through Ireland from south to north, and my impression of the state and capabilities of the country is decidedly favourable. The facilities afforded by the Encumbered Estates Act for transferring landed property have been attended by the happiest results; and it is satisfactory to know that by far the greater part of these estates have been purchased by Irish capital. A general glance at the tenantry and their farms is sufficient to

ascertain whether the landowner is needy otherwise. In many places the dirty mud hovels of the peasantry are rapidly giving way to more elegant cottages, so that this just reproach of Ireland and her landed proprietors is in a great way of being wiped away. A higher standard of domestic comfort is being raised, the demand for labor is now constant, and wages have considerably advanced, and are still advancing. No part of the United Kingdom is the educated of the people better, if so well attended to, than the national system, based on the non-denominational principle, is daily acquiring strength in the ordinary schools and the colleges. It has been over the latter both in Cork and Belfast with the principal Agricultural institutions connected with the National Board of Education of which more hereafter. The weather, though cool, is more propitious, and the crops are promising, but late. Every day I meet with persons interested in Canada, and the Prince of Wales's visit is a matter of common talk and congratulation. It cannot fail to do us much good should leave the Emerald Isle with pleasing impressions, and cannot readily forget the hospitality and generous nature of her people. Tomorrow I cross the channel for Scotland to attend the Highland Society's Show at Dumfries.

The Breeding of Sheep.

We take the following extracts from an excellent paper lately read before the London Central Farmers' Club, England, on the subject of "Pure-bred and Cross-bred Sheep," by Charles Howard. We copy from the "Farmer's Gazette":—

"The sheep of this country are divided into two classes, short-woolled and long-woolled established breeds under the former are the South Down, or Sussex Down, Hampshire or West Country Down; under the latter are Leicester, Cotswold and Lincoln; all possessed of some most excellent qualities, or they would not have survived their way and all but exterminated the inferior local breeds that were once to be found in this country; and perhaps it will be well to glance at the history of those breeds.

The South or Sussex Downs are probably descended from small gray and black sheep, which were found upon the high mountainous districts throughout England. The late Mr. John Ellman found a very inferior and ill-formed description of sheep

the downs of Sussex, but being possessed, like Bakewell, of an intimate knowledge of the physiology of breeding, by a judicious selection of his animals (but what selection it was the world is not acquainted with), he produced an animal with as many good points as its prototype had had; but their greatest improvement evolved upon a gentleman, a worthy member of this club. I allude to Mr. Jonas Webb, who, regardless of expense, has moulded the sheep to his own views, and made it as regards its shape almost perfect. Its peculiar merits of this race consist in the superior quality of mutton and wool, and I gather from a letter of Mr. Jonas Webb's, in reply to a statement of Mr. Race's in vol. xiv. of the Royal Agricultural Society's Journal, their average weight at from 3 to 15 months old is about 9 stone, (3 lbs. to the stone) and the weight of the wool of the entire flock about 6 lbs. The ewes are capital breeders, generally producing one-third twins, and are excellent mothers. This breed is, doubtless, best adapted for elevated situations and bare pasturage, where activity is necessary for getting the stomach filled, and where folding is pursued, their activity being in their favour, they are a highly desirable class of sheep; from their gay and amiable appearance they find strong supporters amongst our nobility and amateur farmers, and are considered by them the *élite* of our breeds.

The Hampshire or West County Down is a very important branch of the Down family.

The Sussex Down is the favourite in the eastern counties, and this breed in the western and north-western counties. Again, as the Sussex Downs are descendants of the sheep which formerly occupied those hills, the latter are descendants of those white-faced horned sheep that ranged from a very early period the hills and downs of Wiltshire and Hampshire. Their improvement dates from the commencement of the present century, when recourse was had to the Southdown; from successive crosses this very valuable class of sheep was established, and I think it will be generally admitted that a flock of Hampshire Downs now presents as great a formity in wool, colour, and general appearance as their smaller but handsomer cousins, the Southdowns. They have lately rapidly risen in public estimation, and find considerable favour in the London markets; but it is said by some, (whom what truth I know not) that, like the Longwools, who are fond of them, they have rather little appetites. A gentleman who stands high in the estimation of the public as a successful exhibitor of this class of sheep at our national shows, in reply to my inquiries, writes that "they are the best description of sheep for Wiltshire, Berkshire, and Hampshire; and, in fact, the large sheep fairs, such as Overton, Reading, and Marlborough, and Weyhill are supplied with very little stock of any other sort; they are very hardy and of good constitutions, and are good wool bearers (the average weight of a well bred sheep of this class is from 6 to 7 lbs. each fleece), of early maturity, and have plenty of lean as well

as fat meat; they will graze to almost any weight you may think proper to make them." The same gentleman also states "that they have been very much improved the last few years by a slight cross with the Southdown." Another gentleman, not a breeder of Hampshires, but who has had considerable experience in the feeding of them, states that they are a good, useful sheep; the better bred ones will bear comparison with other breeds, but there are some not to be desired; those that are too large are very slow in feeding, and when fat are of second quality," and in his opinion "it is very easy to get a Hampshire too big." The ewes are good breeders and sucklers, and combined with the excellent management they receive in these counties, some most extraordinary lambs are raised, which at barely eight months old command enormous prices at their autumn fairs. Their draft ewes also find a ready sale, and are distributed throughout many parts of England, chiefly with a view to cross with the Cotswold or other long-wooled rams; but the former is more commonly used, and I have seen some very wonderful lambs the result of this cross. So much for the short-wooled sheep.

There is no reliable information as to the course pursued in establishing the Leicester sheep.

Bakewell died, and his secret was buried with him; but there is very little doubt they are the result of a cross of the various long-wooled breeds in his own immediate locality, and which he succeeded in turning to good account by the production of this valuable breed of sheep; for it cannot be denied that to this animal all other long-wooled sheep, and perhaps some others, are indebted for their improved shape and great disposition to fatten. These sheep have been so long before the public, and their qualities are so well known, that I shall not occupy your time with any lengthened remarks upon them; their chief characteristics are aptitude to fatten, with a comparatively small consumption of food, and early maturity; they cut a good fleece of wool, upon an average of 7 lbs. each, and weigh at 14 or 15 months old from 9 to 10 stones each. Some friends of mine in our own county, who have been very successful exhibitors at the Smithfield Club show in this class, regret that they cannot be considered good breeders or sucklers—it is a rare thing to have more lambs than there are ewes put to the ram; they also inform me that they find some difficulty in satisfactorily disposing of them when fat, as the public taste shows a decided preference for a black leg and a dark face.

The Cotswold or Gloucester sheep is one of the oldest of our breeds.

Mention is made of them in the early history of this country, and Miss Strickland says in her "Lives of the Queens of England," vol. i., page 449, "that there is little more than tradition to support the assertion that to Eleanor of Castile," Queen of Henry II., "England owes the

introduction of the breed of sheep for which Cotswold has been so famous. A few of these animals were introduced by the care of the queen from Spain, and they had increased to that degree in about half a century, that their wool became the staple riches of England." If this be true, they doubtless became very much improved upon their introduction to this country, or it is recorded that some 300 years after, Edward IV. gave permission for some to be sent back to Spain. They were originally very coarse animals, with a thick heavy fleece, and well adapted for the bleak, unenclosed Cotswold hills; but since the enclosure of the land and its better cultivation, a great improvement in this class of sheep has taken place; there is little doubt this was effected by the use of the Leicester, which, without diminishing their size, improved their quality, and gave them a greater aptitude to fatten. Among the men to whom this country is indebted for improving this breed were Messrs Charles Large, William Garne, W. Hewer, and C. Barton. To Mr. Robert Garne, the well-known breeder, I am indebted for much of my information. Among other observations, he states, "They are capable of enduring great hardships, succeed well in exposed situations, and on nearly every kind of soil adapted for sheep farming, producing a great amount of mutton and wool at an early age, and it is no unusual thing to see in the best flocks sheep of 16 stone when only 12 months old." In confirmation of this, I saw, when at the Oxford cattle market the second week in March last a pen of shorn tegs of Mr. Gillet's of Astrop weighing quite 16 stones. Mr. Garne also states that "the weight they may be made as old sheep is enormous. He had one at the last Christmas cattle market weighing 43 stones or 86 lbs. per quarter, for which he obtained £8 10s. The average weight of an ordinary flock when fit for the butcher at 14 or 15 months old is from 12 to 13 stones, and the weight of wool of the whole flock would approach to 8 lbs. each. The Cotswolds cut a grand figure and generally form a very attractive portion of the Royal Agricultural Shows; there are between 3000 and 4000 rams annually disposed of, and a good export trade is now carried on with Australia, as well as to the continent. The great demand for them is for crossing, and perhaps it may be considered one of our best sheep for this purpose.

The heavy woolled and large framed Lincoln sheep, like the Cotswold, have been improved by an admixture of Leicester blood.

Mr. J. Clarke, who is well known to many of us, thus speaks of them: "The present improved Lincoln sheep partake largely of the peculiarities of both Cotswold and Leicester, having the expansion of frame and nobility of appearance of the one, with the quality of flesh, compactness of form, beauty of countenance, and propensity to fatten of the other; but they far exceed either in the weight of their fleece. Under good management their wool is of a

quality which rarely fails of obtaining a price equal to that of the lighter long wools, and there is, therefore, no breed perhaps that can equal this in rapidity of growth and propensity to fatten under a skin so weighty and so valuable. There are instances of a most remarkable weight to which these sheep have attained. In 1822 Mr. Dawson, of Witheall, killed a three-sheep sheep, weighing 96½ lbs. per quarter; a two-sheep, weighing 91 lbs. per quarter; and a shearling, 7½ lbs. per quarter. Mr. Rote Smith, in his report of Lincoln sheep at the Warwick show, states that "he has known months' old lamb-hoggs slaughtered at Lincoln April fair, 30 together, averaging 35 lbs. per quarter, and 100 together clipping 14 lbs. washed wool each." It is not the common practice for breeders of Lincolns to have the fit for the butcher at 14 or 15 months old, but they are generally kept until they are 22 to 24 months old, when their weight will be from 50 to 55 lbs. per quarter, and cut a second fleece weighing from 10 to 14 lbs. The weight of wool of an entire flock, under fair average management, is about 8½ lbs. each; in some cases especially on good layers, this weight no doubt is exceeded. Mr. John Clarke's Lincoln ram clipped £13½ lbs. of wool in three years, an average of 17½ lbs. each year, while a neighbor of his in 1859 clipped 327 hogget fleeces, which weighed altogether 130 tons, an average of 11 lbs. per fleece. The Lincoln breeders consider the mutton of admirable quality, has less fat, and a greater portion of fine grain lean flesh than the Leicester. The ewes of good breeders, but, like the Cotswolds and Leicesters, are not good sucklers. Mr. Clarke concludes his letter by stating that "it is certain that neither Cotswold nor Leicester sheep, cases where they have been tried (I suppose that district), have equalled the Lincolns in value of wool and mutton together produced per acre, and no other breed can furnish such a large and heavy skinned lamb hoggs as those are the grazier's attraction at Lincoln, Cambridge and Boston spring fairs. So much for the woolled breeds.

The progress crosses have made in this country is proved by their competition at the Sheffield Club.

Through the kindness of Mr. Brandreth I am enabled to give the return of the ten Prizes were first established for cross-bred in 1843, now 17 years ago. During the first five years, the average number of pens was 10, but during the last eight years they have averaged within a fraction of 17; while the Leicester during the first nine years averaged 19, they have during the last eight only reached 17. I do not intend to go into the question of food; for it must be admitted that the woolled breeds will, doubtless, put on the greatest amount of fat in proportion to the food consumed than any other; but this is not what the farmer requires. When he has produced

tion he wants a market for it; crosses find a more ready sale and a much better price, which more than make up for the increased consumption of food. There is a very great difference of opinion upon the subject of crossing, many, and many, still contending that it is not desirable to go beyond the first cross; and the most successful and common mode pursued is to use long-woolled ram upon South or Hampshire down or other dark-faced ewes. This course has been found to answer better than a short-woolled ram upon long-woolled ewes; for the produce generally partakes of the size of the male, and is, having an eye to the butcher, the great desideratum in crossing. The great objection urged by many against this system is, that as all the produce is sold off annually the feeder is driven into the market every year for ewes, which are mostly the drafts of other people's flocks, thereby running the risk of introducing all manner of diseases on to his farm; besides, there is a want of uniformity in the males, some taking after the sire and others after the dam; moreover, having to purchase ewes every year, the demand is increased and the supply is diminished. This cannot be desired, for with a fast increasing and flourishing population, bringing with it a growing demand for meat, the breeding of sheep cannot be too extensively carried on. The objections I have alluded to the mode of crossing I have described, have been felt by many, and successful efforts have been made by the men of Shropshire, Oxfordshire, and other districts, to produce sheep of the same quality as the well-known and acknowledged qualities of the Down with the larger frame and heavier fleeced long wools. What has been done can be done again. If it was possible to Mr. Bakewell, by a judicious selection from various long wools, to produce the new Leicester; for the Hampshire men, by the use of Sussex Down, to change the characteristics of their native horned breed; who shall say it is not possible at the present day, with our enlarged facilities and increased facilities, to produce results equal to those who have gone before us? Oxfordshire and Shropshire men in their efforts to establish these newer breeds are backed up in their principles of breeding by a high authority, a gentleman who is a member of this club. I allude to Mr. Spooner, who has written a most excellent paper upon the breeding of sheep in the last Journal of the Royal Agricultural Society of England, and I take this opportunity of saying that for all practical papers and good downright farmers' writings no previous journal has equalled it. Mr. Spooner, I know, did his best to make it so. I am now that it has fallen into other hands it will be conducted in like manner. Mr. Spooner's paper is one of his conclusions bearing upon this subject. "Although the benefits are most evident in the first cross, after which, from pairing the best bred animals, the defects of one breed or the other, or the incongruities of both, are per-

petually breaking out, yet unless the characteristics and conformation of the two breeds are altogether averse to each other, nature opposes no barrier to their successful admixture, so that in the course of time, by the aid of selection and careful breeding, it is practicable to establish a new breed altogether. This, in fact, has been the history of our principal breeds." Mr. Spooner goes on to show that the Leicester was produced from crossing in the first instance, the Cotswold and Lincoln have been improved by the Leicester, and the Hampshire and Wiltshire have also been crossed and improved by the Southdown; and as regards the latter, there is a doubt in some minds whether their improved chines and backs were not brought about by some such means. From all this it would appear the word "pure" is out of place when speaking of any breed, and therefore I prefer to use the term happily chosen by Mr. Robert Smith, in his report of the Royal Agricultural Society at Chester and Warwick, viz., the "established" breeds.

Horse Talk to Tyros.

When horses are grazing in a state of nature, or turned out for a temporary run, they, doubtless, swallow a deal of earth. I have seen those that are regularly kept in stables, and fed only on oats and hay, if allowed, when out, seize any opportunity to eat earth. I have also seen horses when first unbridled in the stable, after a journey, lick every particle of it from their feet, or if they can get at a whitewashed wall they will never rest until every bit of lime is licked off it. All horses should have a lump of rock-salt and a piece of chalk kept regularly in their mangers; and my opinion is, that if they are fed upon food best suited to their constitution, and moderately, but not over-worked, they will require but little, if any, medicine whatever. Most of their disorders are the results of close confinement in badly drained and badly ventilated stables, and are to be prevented or remedied only by proper stable management, and plenty of gentle work or exercise in the open air, for air and exercise is as essential for preserving the health of horses as human beings. Their infirmities and unsoundness (when not transmitted by breeding from unsound progenitors) are almost invariably caused by too much work, and their internal diseases by over-feeding and want of exercise, or pure air in the stable. But I would not, on this account, proceed to drug and poison them internally with balls and patent medicines, of which there are now-a-days so many vendors, who know nothing whatever about the anatomy or nature of the horse; neither would I subject their skin and sinews to operations which, in some cases, is as cruel as it is ignorant and useless. But if curbs, splints, spavins, and the like, make their appearance in an embryo (caused by over-work while too young),

I would trust only to a loose place and perfect rest. And in the case of wounds, nature wholly unassisted will often perform cures almost miraculous, if not (as is too often the case with ignorant practitioners of veterinary surgery) obstructed by what is called art. Nothing that I know of is so efficacious in the cure of wounds as to keep them scrupulously clean, and the frequent application of a wash composed of the tincture of myrrh and arnica, with bran mash as food. I think all horses, particularly those that are touched in the wind—and there are few but what are, more or less, after they have been worked a few years—should have water always within their reach when they are cool. Setting them previous to galloping is the only exception, and this in many cases is often overdone by that conceited class of grooms who are too clever. Race-horses or hunters are the best judges, however, of the quantity of chilled water they should drink after their exertion. Their grooms are seldom competent to judge of how far they should be limited in the case of their own potations, and their judgment is seldom to be relied upon as to the quantity of water the horses under their charge should take; for those of my readers who employ grooms know to their cost that their want of judgment in the important matter of watering their horses is the frequent source of fever, inflammation, and colic. It is a most barbarous mistake to stint brokenwinded horses of water; the object should be to prevent them distending themselves by immoderate draughts, and this is best accomplished by giving them frequent opportunities of making moderate draughts, while at work, and keeping it constantly before them in the stable. This would also prevent many cases of broken wind. "Water your horse, and feed him often," I say, if you would preserve his wind, and keep him in condition; let him have plenty of water when cool, but not over-gorge him with food at one time, for his stomach is small and soon empty, especially when at violent exercise; for then the digestion is quicker. But if you let him remain long without food he is apt to bolt it, in the hurry to satisfy the cravings of an empty stomach, and in that case the food is not properly masticated, and the horse rarely looks fresh. Over-gorging the stomach also causes the food to distend the stomach, and ferment. I have known it cause stomach-staggers, or inflammation of the stomach, and end in death. Soft water is much better than hard for horses; but where that cannot be obtained plenty of clay and marl should be kept in the tub or cistern, where a supply of water should always be in store. The horse should never be allowed to drink water fresh from the well or pump. When bran-mashes are given, a handful of salt should be mixed up with it—a little clover or tares is a fine alternative, and the best at this season of the year, because the most natural for horses that are kept on hard, dry food, but too many should not be given at one time, or when the horse is

heated, or ravenously hungry, lest they produce colic.

If it is required to fatten horses for sale (which, I may say, hides a multitude of faults in make and shape), I have found nothing so efficacious as boiled barley and oil-cake, with good grooming, gentle exercise, or a roomy box, where they can exercise themselves in a quiet stable with no other horses near, or not outside, to prevent them lying down as much as possible on a deep bed of clean straw. Live antimony, to the extent of three or four drachms is given by some good judges of condition to horses in their feed about four times a week. They say it purifies the blood, and materially assists the process of fattening, not only horses but many other animals; but care should be taken that it is pure, and not adulterated with black lead. I need not, however, remark that horses forced into condition by the above means very soon fall off when they come to regular work, and the usual fare of oats and hay. I should I have thought it worth while to recommend this system of temporarily overloading horses with superfluous flesh, were it not in fashion for the majority of horse buyers to select a horse merely because he does not look sleek and fat. A good judge will never select a sound, young, and well-made animal because he is in bad condition, but an experienced breeder likes to see bone and muscle covered with less blubber, which is too often put on to hide faults, and which disappears after a few days like snow in sunshine.—BALLINASLOE, in *Land*.

Why are not Race-Horses Bred with a combination of Useful Qualities?

Yes. Why do we not breed our race-horses with more bone and muscle, deeper bodies, shorter legs, so that they may render the turf, as well as the turf, some little service as some compensation for the enormous sum granted them—nearly three millions yearly from public purses? What do we get in return for the public bounties granted by our government? Not that for which the money was first given, viz., the improvement of our breed of horses; but, on the contrary, we are every year deteriorating the qualities of our saddle horse and troopers, by the reckless mixture of breed our racers, under the idea that we are improving blood and staying qualities into their blood. Blood is all very well when allied to a useful form, able to carry men a reasonable distance; but when it is produced by "inferior breeding," from shallow forms on long, thin legs, it ceases to be worth the name of "blood," in the common acceptation of the term. Those qualities in our race-horses are decreasing every year more and more the most useful and natural ones—namely, constitutional vigour, freedom from heredit-

se, strength of bone, largeness of muscle, and great endurance under severe exertion. These are the qualities which we require for use; for very few of us would buy a horse for his single quality of speed—indeed, none but turfmen could care to own such an one. The general public do not require such horses, because they are of no use for them in the daily routine of life. Those who like to travel fast may gratify their wish any time in an express train. But even if we were our wish to travel fast on horseback, it would be unsafe to do so on the public roads; and where would we find a race horse to carry a fourteen-stone farmer at the pace, and come to the inn yard as fresh as the smart little cob produced from a judicious cross?

There are thousands of race-horses bred, and bred to the age of two years, which, after trial, are found worthless for the purpose they were bred for, and these are expelled from the racing grounds in disgrace, and they are sold for little or nothing; some of them are given away, and are of no value to their owners. Thus, our country, once famed for the best breed of saddle horses in the world, is becoming overrun with a mass of worthless, weedy, refuse racing-stock, which, by many inexperienced farmers and breeders, are gradually being crossed with, and is deteriorating the breed of, our short legged, spindly-bodied, wide-hipped, strong-loined, saddlers, the lineage of which, in a few instances, can still trace, by their compact forms, to the breed of race-horses encouraged by our forefathers, who bred horses for useful purposes, to carry men long distances, and not the spindle-legged velocipedes bred by our turfmen of the present day, that break down after running a few furlongs with a baby on their backs. Of what little use, I would again ask, are the races of the present day, when they are tried and found wanting in speed for the purpose for which they were bred? Besides the great damage that has taken place in the forms of our race-horses, they are become strongly disposed to lameness and disease, and before even starting their first race many of the best are lame; and are rendered so for life by running a race like the Derby; nearly all are more or less infirm from their birth and would knock their pastern joints if they were to carry an average sized man a reasonable distance on a public road. Our race-horses have been much ruined under the existing practice on the turf breeding in-and-in, as it is only from a small portion of the vast numbers of race-horses that the best breed is kept up. Every one breeding for the turf sends his mares only to the stallions of the stock has most speed. If the old style of breeding had been kept up, viz., four-mile distances, under a weight of ten to thirteen stone, the evils would have been avoided: because, if the endurance and constitutional vigour were reduced in any stud, the owner of it would naturally have sent his mares to a stallion which was in possession of those qualities.

It is curious to see the helplessness of our thorough-bred foals, which usually cannot move about for some days after being foaled. On first observing this, I suggested to the owner of one that it would be better to destroy the poor little miserable devil; but I soon found it was the pure effect of constitutional weakness in the parent, common to all thorough-bred foals. Notwithstanding the public objections to our turf for the encouragement of a idle and serviceable breed of saddle horses, suitable either for the hunting field or for the cavalry, we are every year more and more deteriorating the race, and thus obliged to yield to the growing weakness, and give them less to do, with shorter distances to run, and lighter weights to carry. The Jockey Club are content to see our race horses losing every quality but speed; for that, and that alone, is the quality required by the racing world under the existing system of running. To the Jockey Club, or to the gentlemen who breed our race-horses, it matters not what is the character of their horses, as a whole: each individual desires only to have the best of that whole. But I do not see what it can matter to these gentlemen, or the racing world, what is the average speed of their horses. Their sole object is to win money; but if they would insist on the performance of the old tasks—viz., longer distances, with heavier weights, our turf would soon abound with horses displaying a fine union of constitutional vigour, physical strength, and endurance, with sufficient speed for every useful and pleasurable purpose, while gentlemen connected with the turf would win and lose their money with as much facility as they do at present.—BALLINASLOE, in *London Review*.

Prizes for Horse-Shoeing.

At the recent Dorsetshire (England) Agricultural Show, prizes were offered for *Horse-Shoeing*—a feature entirely new to us, although it is said to have been tried by this Society once before. The idea is a good one, to say the least, and we suggest it to the managers of similar associations in this county. A workshop, on this occasion, was loaned for the purpose in the immediate vicinity of the show ground:

Five forges with five horses were placed at the disposal of the stewards, and in order that too much time should not be taken up, the contest was limited to making shoe nails, fitting and preparing the foot, and putting on a single shoe on the fore-foot. There were 10 competitors, so that only five could work at one time. The signal was given for starting, and in the course of 22 minutes for the shortest and 32 for the longest, the five shoes with the requisite number of nails were reported to be made, after which the signal was given again for nailing on, which was accomplished in from four and a half to seven minutes. No filing of shoes was allowed, as it was held that this, though very proper in

ordinary usage, was yet no proof of skill, and might serve to hide defects. It is evident that the amount of excellence was not confined to one point only, but to several, for instance—

1. The time of making.
2. The levelness of the shoe.
3. The situation of nail holes and the fullering.

4. The proper and even seating of the shoe.
5. The preparation of the foot, such as the removal of ragged parts, which only harbored filth, without cutting away the bars or too much of the frog and sole.

6. The fitting of the shoe so that the wall or crust might have a firm and even bearing, the shoe not projecting at the sides or too much so at the heels. The shoes to rest very slightly on the heels, and the sole and seat of corns particularly being secured from pressure.

7. The nailing on so that each nail should have a firm holding the first time it is driven, so that the crust may not be injured by drawing the nails and paring the horn uselessly. The nails not to be too numerous nor too near together, nor the heads to be so large as to project much beyond the shoe, and above all to be placed at some distance from the heels, particularly for the inside heel, so that there may be no impediment to the foot's expansion.

8. The time taken by each competitor to perform these various operations in a proper manner.

It will be seen by reference to these various points that the judgement was by no means trivial, as it had to take all these points into consideration. One of the best workmen failed to get a prize in consequence of too great haste both in making and putting on; whilst another skilful maker of a shoe wanted experience in fitting it to the foot and putting on.

The prizes were respectively 3 guineas, 2 guineas, and 1 guinea—time occupied by the winners:

	Making & fitting.	Putting on.
First prize.....	26 minutes.	7 minutes.
Second "	32 do	4½ do.
Third "	25 do	5 do.
Highly commended	30 do.	7 do.

The Cattle Murrain.

The citizens of Massachusetts and the adjoining States are sorely troubled by the spreading of that fearful infection among the cattle known as pleuro-pneumonia. To such an extent has the malady progressed that an extra session of the Massachusetts Legislature has been called for the purpose of devising measures to circumscribe the evil. The session will commence on Wednesday, May 30, and money appropriations will be called for, so that prompt and decisive action may be taken. Reference is made to the endeavors made by the English Government, now more than a century since, when a similar

disease presented itself, and which were effective in arresting the course and shortening the period of the malady. It appears that in 1744 a farm residing at Poplar, near London, imported 10 calves from Holland which were affected with the disease. Starting from this point, slowly at first, but more rapidly as more means for propagation were offered, it spread over the length and breadth of the land, destroying hundreds of thousands of cattle, and continuing its devastating effect with almost unmitigated severity, down to 1754-5. Notwithstanding the deep and painful interest which this disease excited, and the efforts made by the government to stop its ravages, it was ascertained by one of the Commissioners appointed to investigate the matter, that in Nottinghamshire alone 40,000 head of cattle perished in six months, and in Cheshire upwards of 30,000 in the same space of time. By a special act of Parliament orders were given:

- 1st. For the killing of all the infected animals, and burying them entire with the skins 'slashed from head to tail,' that they might be used for the purposes of the manufacture.
- 2nd. For the burning of all the hay and straw used about the animals.
- 3rd. For the cleaning and fumigating of the sheds, etc., and for sound cattle to be put into them for two months after the removal of the diseased.
- 4th. For recovered animal to be allowed to go near other for a month after its convalescence.
- 5th. No diseased cattle to be driven to fairs or markets, nor for the flesh to be used for dogs.
- 6th. For no healthy cattle to be removed from a farm where the disease had prevailed, in less than a month after its disappearance; lastly, orders were given for the notice of outbreak to be immediately sent by the farmer to the proper authorities.

In one year, the third of the existence of the disease, £135,000 were paid out of the public treasury as a recompense for the cattle killed according to the prescribed orders. During the year, 80,000 head of cattle were killed, be more or less affected, and nearly double the number died of the disease. There have been several cases, we learn, of a similar kind in Canada, though not to such an extent as yet to attract very general attention. But, in order that the country might be spared the terrible infliction it would be well if all cattle which may be seized, should be either killed at once or so disposed of as to prevent the disease from spreading. Indeed, it might be well if the Canadian Government were to take prompt action in the matter, and by circulating regulations respecting the disorder, and causing supervision to be exercised over all cattle to be imported, arrest the spread of the disease through Canada. Just at this time, when the country is recovering from the recent depression, and when everything promises an abundant harvest, nothing could be more calamitous than the spreading of a disease which would d.

large a portion of the living wealth of the country. Meanwhile, the utmost caution should be exercised by the farmers to prevent the malady from obtaining a headway, as, should it once get a firm footing, the plague might commit similar ravages with us as it did during the long period in England to which we have referred. The plan, that of inoculation, has been recommended as a remedy. It is stated to have been used in Belgium in 1852, and that of 600 head inoculated in the space of three months, at the period of its greatest intensity in that province, not one of them contracted the disease.—*London Free Press*—May.

Landscape Gardening.

The usual accompaniments of refinement and civilization are displays of the fine arts, such as painting, statuary, elegant cabinet works and architectural decorations. These are all very well in their place, but there is another art which deserves a much higher position than is generally assigned to it by those who form their ideas of refinement by the display made in our cities; we mean the art of landscape gardening. The highest style of art consists in cultivating nature in the best manner. No work of art is so beautiful which is not in accordance with natural laws, and no people can become truly civilized who do not possess a taste for the beauties of nature. The most gifted and cultivated minds have ever found delight in rural scenery. In the days of Augustus, when the Romans had advanced to a state of civilization nearly equal to that enjoyed by us at the present day, landscape gardening held a high position. In the poems of Virgil we can almost fancy that we hear the hum of his bees, the bleating of his flocks and the murmurs of his fountains, as the poet sat at noontide under a shady bower, enjoying the sight of cultivated fields. The poet Newton took exquisite delight in his garden, which was said to be the neatest in England. The graceful lawns and beautiful gardens attached to the mansions of the noble and wealthy men of Europe are better evidences of true refinement than the monuments of marble, the galleries of paintings and the gorgeous temples of their cities. These are now being appreciated by our people. In the early settlement of our country, the struggle was severe to subdue nature in the best form, so as to obtain the fruits of the earth for the necessities of life. The beauties of the earth as the handmaids of nature in rural cultivation were then held in abeyance to the rude pressing demands of necessity. But as a national wealth has accumulated, so has there been a commendable search for enjoyment in rational and elevated refinements of cultivation. The late Mr. Downing, whose name and fame are world-wide, said, wrote, and much to spread abroad a taste for landscape

gardening, and he was eminently successful in his labors. Within the past twenty-five years, especially, there has been a vast increase of general and individual wealth, and it affords us gratification to witness a proportionate diffusion of taste for rural beauties. A recent short tour in some of the districts bordering on the Hudson river has impressed us most favorably respecting the growing taste for the sublime and the beautiful in nature, combined with art. Go where we may, we behold grassy lawns, like beds of emeralds, surrounding stately mansions. Silver streams are trained to send forth their sparkling showers from numerous fountains; and the banks of our rivers are becoming as attractive for highly-adorned scenery as those of the Thames and the Rhine. We commend this growing national taste for the beautiful in nature, and exhort our people to indulge in it with persevering enthusiasm. The climate and soil of the United States are most favorable for superior landscape gardening. We have lofty mountains, broad lakes, deep and noble rivers, fertile vales and extensive plains and an almost tropical vegetation; and these certainly are natural advantages of the very highest order. American travelers in England used to speak with enthusiasm of the trim hedge rows, the neat fields, and the high style of gardening displayed on every hand; foreign travelers in America now admit that the national taste for rural beauty is not inferior to that displayed in Europe, and that we are progressing to the attainment of the very highest position for landscape gardening.—*Scientific American*.

Correspondence.

Farming in Illinois.

EDITOR AGRICULTURIST,—A party of Canadians have just returned from an excursion to which they were invited by the officers of the Illinois Central Railway Co., and also of some of the intersecting lines. All who availed themselves of the opportunity thus afforded them of exploring the novelties of the Far West cannot have failed being impressed with the unlimited kindness and attention extended to them by Mr. Austin, who on the part of the Illinois Central, piloted them through their journeyings in the prairies, and the unbounded hospitality with which they were entertained by the residents of the different localities where they were enabled to make a pause in the rapid progress incident to railway travel.

The main feature of novelty which must present itself to any one visiting these prairie regions is the immense extent of soil of uniform composition. For hundreds of miles the agriculturist sees nothing but the richest decomposed vegetable mould of average depth of eighteen inches, underlaid by a deep substratum of very pure clay. This soil apparently has an unlimited capacity of producing Indian corn, and this

year the seasons having been most favorable to Illinois, as to most other portions of the Northern States and Canadas, nature wears her most smiling aspect. For miles along the railway hundreds of acres are to be seen covered with a most luxuriant growth of corn, some as high as sixteen feet. The variety commonly grown is the *Dent*, or Horse-tooth corn, which I believe throws up but one shoot, while the labor of removing the suckers, as with other varieties, is done away with, and the general produce is but two ears to each stalk. The careless system of cultivation may be imagined from the fact that 40 acres is considered a proper amount for one man to cultivate in a season. Under ordinary good cultivation the average yield is stated to be 40 bushels per acre, and this year it is set at 50, though some pretend to export 80 and others even 100 bushels per acre of shelled corn. This year the price will probably be from 15 to 20 cents per bushel. The grain is always bought in the ear, and 72 lbs. of corn in the ear is reckoned equal to 56 lbs. of shelled grain. It is to the production of corn alone that the whole of central Illinois seems particularly adapted, the absolute deficiency of lime in the soil rendering it unfit for the production of wheat; and in Northern Illinois the want of snow as a protection from the frost, and the prevalence of keen biting winds which sweep unchecked across the country, render the cultivation of any but spring wheat very precarious. In Northern Illinois lime is most abundant, but further south the price of \$1 per barrel will for a long time be a bar to its general use for agricultural purposes. This deficiency in the soil itself, and the general want of drainage are the great impediments in the way of farmers to a certain adequate return for his labor and will afford an easy explanation of the comparative failure of the crops in Illinois for the past three years. A machine similar to the English mole plough has been worked in some places, and will probably come into use in many more as a cheap means of temporary drainage; but in a country where the general level of the land is so complete a more careful system will be necessary to ensure thorough drainage, as it seems impossible to regulate the depth of the drain in passing over any inequalities or undulations of surface.

Without attention to drainage, farming—especially in Illinois—must be unreliable as a profitable pursuit. The general difficulty of getting the water away must prevent an early seed time, and the succession of a season of drought will entail a failure.

Very good water can be reached in many places by digging from 30 to 60 feet, but frequently boring has been resorted to for a depth of 150 feet. Great inconvenience must be felt for want of water for the large herds of cattle pasturing on the prairies, as there are few rivers or creeks crossing the country, and the sloughs or water courses draw their supplies only from surface water, and therefore fail as the season advances.

The price of land in the unbroken prairie varies from \$5 to \$20 per annum. The average value of a farm in at all an eligible situation would be fifteen dollars per acre. The contract price of the rather poor fence, usually built of posts and four six inch strips of boards is a dollar a rod, which will come to four dollars per acre for an outside fence, 160 acres in a square. To this will have to be added the expense of a house and any other buildings the settler will consider necessary, which will all have to be paid for in money, as no materials of any kind will be found on the land.

The value of improved land varies from 30 to 50 dollars per acre. It is said that the ordinary expense of cultivating and harvesting the corn is from 8 to 10 cents per bushel; the average yield 40 bushels per acre and price 20 cents per bushel. There are three methods of harvesting. The most slovenly is perhaps not very much practised at present—namely, when the corn is ripe to turn the cattle into it, and a certain number of hogs with them to feed off the corn in the field during the autumn and winter. Another process, and the most common, is to drive directly through the corn and gather the ears from the stalk and load them at once into a waggon, leaving the stalks to be fed off by the cattle, and the corn is thus sold. The third method is that used in the Eastern States, namely, to cut and shock the crop, and then during the winter corn, stalk and all, are thrown out to cattle to be fattened, two hogs being turned into the yard with each one. In this manner it is computed that one ox and two hogs will consume and fatten upon half a bushel of corn per day. In this centre the business of Illinois—namely the production of corn, beef and pork and its capacity for this seems unlimited, boundless is the territory capable of being cultivated for this purpose. The actual production being of course ruled by the season each year, though we doubt not as population increases and capital flows in, more careful cultivation and the all indispensable drainage eventually ensure a greater certainty of productivity. As to the salubrity of the climate there was little opportunity of forming an opinion in so short a period as that occupied by excursion. Those however whom the travel met seemed to enjoy the best of health. It is said that as the country gradually became cultivated the malaria disappeared in the prairie, but that there was more sickness in the neighborhood of the few rivers of the country and the wooded parts adjoining.

These observations are made by a Canadian who fully appreciates the richness of the soil of Illinois; but it will not be surprising if he should compare the two countries in a manner favourable to his own. One of the most important points is that there are immense quantities of excellent well-cleared land in Canada to the best wheat producing lands of Northern Illinois, which can be purchased for less

amount above mentioned, as the price of proved land in that State. The want of timber and all building material, the absence of snow in winter and the scarcity of water in summer, the scattered population, the distance from market and the consequently low prices of produce so far west, must in the opinion of a Canadian turn the beam in favor of his own well-to-do and more eastern domicile.

HRMSFORD, August 12, 1860.

Pleuro-Pneumonia.

EDITOR AGRICULTURIST.—Observing that you have an interest in publishing anything that will enlighten your readers on the Cattle Disease, which made its appearance in Massachusetts last year, I have concluded to place an article at your disposal, which you are at liberty to publish if you think it worth while. There seems to be a diversity of opinion as to whether Pleuro-pneumonia is contagious. Judging from the reports that have appeared in various public journals of late, there could scarcely be a doubt to its epidemic character. The symptoms attending the disease—chills or shivering, followed by feverish heat, shortness of breath, and prostration—give it more the appearance of hoed Pneumonia, than of Pleuro Pneumonia; the post mortem appearances—suppuration, ration, effusion, hepatization, gangrene, tubercles, &c.,—are clearly indicative that it is hoed Pneumonia.

The disease is simply a determination of blood to the lungs. The pleura, or inner membrane of the cavity of the lungs, would naturally become more or less inflamed, which is, probably the cause of the term pleuro-pneumonia having been applied to it. Those that have seen animals were attacked with it, say, that for several days preceding the attack, the animal presents the symptom of fever; and in order to ascertain whether the above named disease is contagious or not, it is necessary to find out the cause. They are produced by poisons, unwholesome food, a superabundance of healthy food, improper exercise, impure water, vitiated air, uncleanness and atmospheric vicissitudes. Contagions may also be classed among the exciting causes of fevers, although, as far as observation and experience have extended, we do not consider that, where the predisposing causes mentioned above are strictly guarded against, there is any danger of either fevers or pneumonia being propagated by contact. Pneumonia in horses has been a common complaint in my neighbourhood for many years, although it has never considered contagious. I will mention a case in point. In June, 1856, I took one of our horses, and started on a journey of 40 miles. When I had proceeded about half that distance, I halted, to refresh myself and animal; feeding my horse, I went to dinner, and on returning found him exhibiting symptoms of

pneumonia. I remained with him, and employed the services of two Farriers, and notwithstanding we did all that they considered advisable, on the eighth day his sufferings terminated in death. I returned home the next day, and three days after two others were attacked with the same disease. These were doctored as usual, and, after losing much of their flesh, recovered in about three weeks. The remaining one was equal in condition to the others before they were attacked: his feed was reduced, and a little attention was given that he had proper exercise, and he was not attacked. As there were no other horses in the neighbourhood attacked with the disease I instituted a thorough investigation as to the cause of ours being attacked, and found that after breaking up our summer fallow, the hands that had the care of the teams had continued to feed them the same as when they were at work, while at the same time they had been standing most of the time in the stable. I may here observe that for two years previously I had given my own attention to the care of the teams, and when they were not at work, gave them proper exercise, and the result was that there was not a sick horse of our own on the place during the time.

It is much to be regretted that of the many reports that have been given of pleuro-pneumonia among cattle, there is nothing said about the habits to which the animals had been subjected. In many localities, and especially in Massachusetts, where the disease first made its appearance, it is a common practice to keep cows shut up, soiling them, or feeding them on still slop, or the coarser kinds of grain ground and fermented, which without exercise, would very soon vitiate the blood, and thus produce disease. The object that owners of cows have in treating them thus, is to cause them to produce a large quantity of milk; but the evil effects of this pernicious habit were made painfully visible in the celebrated "swill milk exposure" which was so ably conducted by Frank Leslie, in his *Illustrated Journal*, in the spring and early part of the summer of 1858.

In treating this subject, it may not be out of place to investigate the nature of disease. Disease has been defined by an eminent modern author to be "*remedial effort*," or *an effort of the vital or life principle to expel foreign or dead matter from the system*. In order, then, that animals should be healthy, they should partake of no more food than they can assimilate, which should be of the healthiest kind to prevent contamination of the blood. It is, also, necessary that the animal take enough exercise to carry off all the matter that is produced by the wear and tear of the system. All the matter which has been used by the system and returned to the blood to be taken away by the depurating organs, the skin, lungs, liver, kidneys and bowels, the office of which organs is to protect the living organism by carrying off all foreign substances.

Now in view of the above facts, pneumonia is the result of *previous violation*, in which the system attempts to bring matters to an issue, by *expelling this foreign matter or destroying the organism* in the attempt. Or again: The system becomes loaded with foreign matter, the depurating organs all go to work to expel the enemy and protect the living organism. It is impossible, the objectionable matter is not taken out as the blood passes through the depurating organs, in its circulation; but is carried back to the heart, which sends it to some of the internal organs—probably the lungs—which leaves the surface without its due amount of the circulating fluid, and chills are produced. The enemy is still present, and the heart pumps with renewed vigor, and sends the blood to the surface again, which produces a feverish heat: this is a symptom of fever. Thus, things pass along with no change for the better, when at length the system changes its mode of operating, and sends a large amount of blood to one place (the lungs in pneumonia) that the objectionable matter may there be expelled by *suppuration*, or what is commonly known as *gathering or healing*, leaving the remainder of the system without its due amount of the circulating medium—the life giving principle—the blood, hence the surface becomes cold.

Now the question arises, what shall be done? To which I would answer, EQUALIZE THE CIRCULATION, BUT DO NOT POISON YOUR CATTLE WITH DRUGS.

Allow me to remark here, that it afforded me a great deal of pleasure to observe the article, which appeared in your valuable journal for August, giving a description of, as well as the mode of using, the "Turkish Bath." A portion of the report, which was submitted by the committee appointed to inquire into the "merits of the Turkish Bath," I have seen fully verified, in sick people that were treated in a similar manner. It is as follows: "That the constitution is not impaired by the treatment with the bath as it is by any of the other systems with which we are at present acquainted." The committee adds, "and this fact is particularly illustrated by the rapidity with which, in every case, the milk almost immediately returns on the animals being relieved from the disease." A neighbour of mine has adopted a plan of treating his sick animals, which he considers very efficient in cases of colic, &c. It is to sponge the body with cold water and envelope it in blankets. This produces a reaction, by opening the pores of the skin, which immediately relieves the internal congestion. This treatment in Pneumonia would be presumptuous, as the lungs are so sensitive by reason of their peculiar organization. The Turkish bath is peculiarly adapted to the treatment of pneumonia, as the object should be to draw the blood away from the lungs gradually, without subjecting the system to any severe shock. This I think might be done by the application of a heavy blanket,

wet in quite warm water, followed by a dry. The first would tend to draw the circulation to the surface, opening the pores of the skin, and the second would retain the caloric, and establish a vigorous circulation. This established, let the blankets be taken off and as quick as may be, a couple of pails of cool water dashed over the animal, to be followed immediately by very thorough friction until nearly dry, when it should be again enveloped in blankets and placed in a comfortably warm place, which is well ventilated.

Indeed, there is little use of attempting to treat pneumonia unless there is a good supply of pure air, with cleanliness in every respect. Thorough and continued friction of the extremities is of untold benefit in treating pneumonia. Another important point is to keep the animal fasting for some time after the more prominent symptoms disappear, say from one to three days after which, commence by giving very small quantities of light food, increasing the quantities gradually for some days.

I would sooner trust to the starvation principle along with pure air and cleanliness, than the most approved method of drug medication. My apology for the length of this article is unfeigned pleasure which I should enjoy seeing the ruinous (to the constitution of live beings) drug system superseded by the more natural, and consequently, rational system of Hygienic medication. And the growing interest that is felt in stock raising, with the certainty that it must continue to occupy a prominent position in agricultural science, assures me the experience as well as the thoughts of one, however unpretending, may be of service

Yours, &c., ISAIAH R.

Pleasant Hill, Port Hope, C. W.,
Aug. 16th, 1860.

Queries.

EDITOR AGRICULTURIST,—The following subjects having been brought before the Gwillimbury and Georgina Farmers' Club discussion, I have been requested to forward them for insertion in your paper, hoping to the benefit of your remarks, or the opinion of any of your readers who have had experience in these matters. It is certainly as a medium for promoting discussion that an agriculturalist is of most service to a farmer.

SUBJECTS:

PLASTER USED AS MANURE.—Any mode of analysis?

Is it deteriorated by age, if kept dry?

Does it prove as beneficial to cereals, green crops, and to meadows as well as to clover?

How does it act when ploughed in, compared with the dressing?

Are its good effects felt on the second year?

Which is the best kind for manure?

What agency does plaster act on the crop?
CANADA THISTLE.—Best mode of destroying.
WHEAT.—Any means known to prevent being winter-killed, by top dressing or other.

SPRING WHEAT.—Is it better to plough for in fall or in spring, in clay and in sandy soils?

THOMAS SIBBALD,

Chairman North Guilfimbury and Georgina Farmers' Club.

E. B.—In the *Agriculturist*, August 1st, I see an article on the artificial formation of a moss, for striking cuttings, I would gladly be deemed as the best season for making the experiment in our latitude. J. S.

Perhaps some of our correspondents will be good enough to furnish answers to some of the above queries. In regard to the latter question, we believe the operation is performed in the winter season. It requires a forcing house, with a moist atmosphere, and a bottom of about 70 degrees. When the callous is removed, the cuttings are placed in sand, and put in a cool place till required for setting

The Provincial Exhibition.

R. EDITOR.—If it is not too late, would it be wise to give prizes on the four best loads of hay, including the quality and the loading, so on the best four loaves of bread made by the families of farmers. As there is no prize offered for the Red Globe Mangel Wurzel, is that an omission, or are they excluded?

S. KING,

Man's Corners, C. W.
 August 18, 1860.

My article of home production may be entered for exhibition, although not enumerated in the prize list. Loads of hay, however, we should rather too unwieldy and bulky for the provincial show ground. Such a prize may perhaps be offered with advantage at a county or township, or village fair. Red Globe Mangels not mentioned in the prize list; why, we do not know, but they can be exhibited as extras.—

Agricultural Intelligence.

STEAM PLOW.—The State Agricultural Society of Illinois offers a premium of \$1,000 for the best steam engine that can be practically adapted for animal power in plowing and farm work. This prize is simply for a locomotive which may be applied to do

general work. It is expected that several of such engines will be entered for competition this year. Much dissatisfaction has been felt heretofore, with the action of the committee of this society in not awarding the full prizes at the former exhibition of Fawkes' plow. We hope no cause for such blame will be allowed to rest on the Committee on premiums at the next fair.

State and Provincial Fairs for 1860.

Alabama,	Oct. 29 to Nov. 2.
American Institute, at Palace Garden, New York.	Sept. 25.
California,	Sept. 19, 20, 21, 22, 24, 26.
Georgia, at Augusta,	Oct. 22, 23, 24, 25, 26, 27.
Illinois, at Jacksonville,	Sept. 10, 11, 12, 13, 14.
Indiana, at Indianapolis,	Oct. 15, 16, 17, 18, 19, 20.
Iowa, at Iowa City,	Oct. 2, 3, 4, 5.
Kentucky, at Bowling Green,	Sept. 18, 19, 20, 21, 22.
Maine,	Sept. 25, 26.
Maryland,	Oct. 30, 31, & Nov. 1, 2.
Michigan, at Detroit,	
Minnesota, at Fort Snelling,	Sept. 27, 28, 29.
Mississippi, at Holly Springs,	Oct. 16, 17, 18, 19.
National Pomological Society at Philadelphia,	Sept. 11, 12, 13, 14.
Nebraska, at Omaha,	Sept. 19, 20, 21.
New-Hampshire, at Manchester,	Oct. 2, 3, 4.
New-Jersey, at Elizabeth,	Sept. 4, 5, 6, 7.
New-York, at Elmira,	Oct. 2, 3, 4, 5.
Ohio, at Dayton,	Sept. 25, 26, 27, 28.
Oregon,	2nd Tuesday of Oct.
Pennsylvania, at	
Wyoming,	Sept. 25, 26, 27, 28.
South Carolina, at Columbia,	Nov. 13, 14, 15, 16.
St. Louis, Mechanical and Agricultural Association,	Sept. 24, 25, 26, 27.
Tennessee, at Nashville,	Sept. 10.
United States, at Cincinnati,	Sept. 20, 21, 22, 23, 24, 25, 26, 27, 28.
Upper Canada, at Harpilton,	Sept. 18, 19, 20, 21.

DRAINING.—The first indispensable requisite to success in enabling the farmer to command his seed time and harvest, with clay land, is *underdraining*: this is the great panacea against winter-kill and wheat midge. The life and lightness of the land, thus prepared, will give the wheat plants such a start in the fall that they will cover their roots during the winter.

ter as a protection against frost: the absence of standing water will prevent winter-kill, the early warming up of the soil in the spring, will get the plants forward so they will cover the ground before the heat and drouth of early summer comes on: and lastly, the field is in vigorous head before the midge wakes up, so that the little pest gets only the outside portions, or scarcely none at all. In very favorable seasons, with skillful handling, these lands may and do yield abundant crops, without underdraining; but it is an even chance you lose your labor; while with underdraining and otherwise good handling, the land is good for thirty-five to fifty bushels of wheat per acre, every time.—*Ohio Cultivator*.

KOHL RABI.—My success in growing heavy crops of this root for some years upon poor soils, and more particularly their goodness this year in contrast to the general failure of Swedes and Turnips from the summer drought, induces me to bring its valuable qualities to more general notice. Many of your readers may be unacquainted with it, and I therefore may mention that it is grown largely in the north of Europe, and found to stand its severe frosts, and being raised in beds in the spring, and transplanted out in May and June like Cabbage plants, it is not liable to the casualties that Turnips are exposed to. It partakes of the form and qualities of both the Swede and the Cabbage, that is to say, it has the leaves of the field Cabbage, with a bulb very similar to the white Swede. It is a native of Germany, very hardy, withstands frost better, and affords more winter cattle-food to the acre, in February and March, than any root that I am acquainted with. I have tested its feeding qualities against the Swede, and am disposed to think for sheep, and more particularly for couples in the spring, it is superior. They certainly prefer it, hares and rabbits pick it out, and are attracted to it from long distances. The bulb grows above ground, and is come at able in frost, and when the ground is covered with snow. It is very sweet and juicy, and the leaves are excellent picking for young lambs. There are two sorts, namely, the green and the purple; the former affords the greatest produce per acre, but perhaps the purple is the most nutritious. My practice is to prepare a seed-bed in winter by well dressing and digging in a corner of my earliest piece of tares. The seed is sown the end of February or early in March, thinly in rows 12 inches asunder, the beds are kept perfectly clean by hoeing and hand-weeding; and as the Tares are cleared off in May and June, the ground is deeply ploughed, ridged up, dressed and planted. The plants, at the first putting out, are placed 3 feet apart, the ridges being 28 inches asunder; but as the season advances, and the opportunity for reaching a small size diminishes, the distance between the plants is lessened. The value of this root, I assure your readers, is very considerable in any year, but more particularly after a dry summer, when most

other winter food is scarce, or in severe weather when the land is covered with snow, and Turnips are buried out of reach of sheep. I was very fortunate this year, when Turnips have generally failed, having on each of my farms considerable breadth; and I so much approve it, that I intend never being without it at all seasons. Lean stock, after such a season as I have just had, always sell low in the autumn from the prospect of a want of winter keep, while fat stock, in the following spring, sell very high, so that a crop of this description is not profitable in seasons when Turnips fail. On a field of 10 acres, broken up from heath last year (part of Bagshot Heath,) I have at the time more winter food to the acre than is commonly grown on good soils in favourable seasons from any other root—this, too, has been raised without the aid of any purchased manure and on land hitherto supposed of no value, and incapable of returning any produce paying cultivation. My next attempt there will be for corn or Barley, and I have little doubt of a crop.—Feb. 1848. *Hewitt Davis's Practical Essay*.

Horticultural.

Memoranda for September.

THE KITCHEN GARDEN.—There is not a great deal to be done in the vegetable department this month. Celery should be earthed up fully in dry weather. Prickly spinach for spring use may be sown to advantage. Early potatoes kept over for seed should now be dug, and before being put away exposed to the sun a few days, which will cause them to sprout earlier. Onions should be taken up and well dried before being put away. All seeds as they ripen should be carefully dried and cleaned out. The ground, as usual, should be kept clean, and especially weeds prevented from running to seed.

THE FRUIT GARDEN.—The work in the garden and orchard at this season consists principally in gathering in and making use of fruit, which does not require much advice. Prematurely falling, diseased fruit, however, should be carefully gathered up and be otherwise destroyed. This will aid greatly in checking the increase of insect pests.

THE FLOWER GARDEN.—In the early part of this month preparation must be made for the housing of green house plants. Previous to being done, let the room or green house be white washed with lime, which will prove efficacious to insects, and prevent their gene-

the plants. Chrysanthemums should be tied up to small sticks, and watered occasionally with liquid manure, to promote their coming in full perfection. Those in pots should be protected for late flowering, and be watched and taken in, on the appearance of a frosty night; they may, however, be exposed to the air as much as possible when it is mild and salubrious, as should all other half-hard plants.

The following remarks of Breck in "The Flower Garden" on the cultivation of Plants in the parlour, will be found useful and interesting, especially to our lady readers:

A judicious choice collection of plants in the sitting-room or parlor will add much to the charms of the room; but as we often see them, weak, straggled, drawn up, crowded together, and infested with insects, they rather give pain than pleasure. In this state, the clear sunlight through the window is far preferable to a congregation of plants in earthen pots and saucers, with their occupants. Judging from what we too often see, cultivators in parlors have very erroneous ideas of what is necessary for a perfect arrangement of their plants. In fact, the plants are often killed with too much kindness; too much water, too much light, and a want of water, are the general causes of the sickly state of plants, which have often escaped our notice; to which may be added, the use of bleached compost or mould. Saucers under plants, if water is suffered to stand in them, are dangerous, but necessary for the sake of neatness; they, therefore, suffer the water to stand in them, nor to be poured into them. The water should always be given on the surface, and never on the leaves, unless the surface is dry, and in moderate quantities, for most plants. Water should only be used, and that of a moderate temperature, but not warm. When water is necessary, it should be applied in the morning on a clear, sunny day.

Watering with guano water may be resorted to to stimulate the plants occasionally; but an excess will be injurious, if not destructive. A teaspoonful or two to a pail of water will be strong enough; this may be used twice a

week. It is useless to expend time upon plants in the parlour where the windows face to the north. South-east, or south-west exposures are better; or, of course a south window is the very best; it admits the sun all day.

Heat is more important than great heat; plants are frequently ruined, for all ornamental purposes, by keeping the room excessive. The hot, dry air of most sitting-rooms the present day is so injurious to the plants, as well as some other plants, that it is often made to flower, as the buds will often come on before the time of flowering. But

I have seen as fine blooms of the Camellia in an old-fashioned sitting-room in the country, as I have in the green-house. The room was so cold at night that the thermometer would fall nearly to freezing, with a plenty of air from the old window casements during the day. A good temperature for the Camellia is a range of 40° by night, to 60° during the day. I do not mean to be understood that this should be the highest range in the sun; but at the back side of the room, in the shade. This temperature will also do for most plants; some will thrive better with a higher range, but their cultivation should not be attempted in a sitting-room.

Where there is too much heat, and not well exposed to light, the plants will spindly up, and make feeble, sickly growth, and if they produce flowers, they will be so weak and pale as to excite the pity of the beholder.

Unless the pots are turned every day, the plants will grow one-sided; every plant should receive as much light as possible.

A stand for flowers should have rollers attached to the legs, so that the plants may with the least trouble be turned round to the light, or wheeled into the middle of the room at night, when the weather is severe."

J. F.

THE APPLE TREE BORER.—We copy the following from the correspondence of the *Rural New Yorker* :—

Inclosed please find a genuine *Saperda bivittata*, or *Apple Tree Borer*. It was taken from an apple-tree in my orchard, and is transformed from an ugly grub to the perfect insect, and is well fitted to choose a mate and go out in the world to propagate its species. This insect is so extremely shy in its habits, that it is seldom seen or captured, and this is only the second one that I have ever seen in the winged state. I would urge upon every one who is the owner of an apple orchard, the vital importance of waging a war of extermination against this insect, which appears so small and harmless, yet actually does more harm to the apple than all the other insects in America.

I have a fine apple orchard, about fourteen years planted, which I manage to keep pretty clear of the pest, by giving the trees a thorough examination in May and in October; and to sharpen the sight of the "boys," I pay for the first grub twenty-five cents, and five cents each for all the rest they capture, and you may be sure that they look pretty close after them.

We remove the earth from the collar of the tree, and then scrape the rough bark off; and if a dark spot is found, it is closely examined with the point of a stout knife. Sometimes they are just under the bark, like the peach grub; but generally they make a burrow in the solid wood, by cutting one-fourth of an inch in, and then working upward. Sometimes we find them about a foot from the surface of the

ground, but not often. In an orchard of about five hundred trees that we examined this spring we caught only fifteen grubs.

Old trees are sometimes so cut and perforated that it is impossible to get them all out without destroying the tree, which is the best way; for if one tree be left with a few grubs in it, it may be the means of stocking the whole orchard with them. My observation of the habits of this insect, has satisfied me that it does not travel fast, and persons who plant good *clean trees* in a locality where there are no grubs within a mile, may not be troubled with them for a life time; but don't plant trees unless you examine them well before you plant, as they are often sent out *gratis* with the trees.

GRAPE MANURES.—Strong or stimulating manure is most dangerous to the vinous property of the Grape. The general rule in wine producing countries is to manure only with its own cuttings, or the refuse of the grape when pressed, which contain tartar, essential to the vinous property of the grape. Excessive richness of the soil, though it gives a larger crop, and the best fruit for the table, detracts from the character of the wine. There have been several remarkable instances of this fact; amongst others, the celebrated vineyard of Johannisberg, which some fifty years since having been richly manured, it for several years afterwards produced a grape which gave wine of an inferior character, and much deteriorated in quality. It took twenty years before the soil became sufficiently poor to restore the vinous quality of the grape. Soils which produce choice and rare wines are never manured with any description of fetid manure, generally applied for the purpose of fertilizing land; but wool, horn, bones, and the cuttings and refuse of the vine itself, being only used. The scientific botanist tells us that the vine only takes up from the earth carbonic acid, ammonia, etc.: practice and experience, both ancient and modern, affirm the contrary.—*Florist and Fruitist.*

Suckers in Apple Orchards.

The remark is often made, that the suckers of apple trees used to graft stocks in, are apt to produce suckers. This is only true so far as those particular trees which sucker most abundantly are apt to be selected from which to obtain the supply, and of course the new stocks have the same peculiarity. Suckers should never be used for stocks; but if they are, they should be taken from trees producing the fewest. To clear suckers from orchard trees, they should not be cut off, for new shoots will spring from every stub left. The right way is to keep the ground smooth, mellow and clean; and then about the middle season of growth, or during the first half of summer, put on thick cowhide boots and stout buckskin mittens, seize one sucker at a

time, placing the boot upon it close to the give a sudden jerk with the hands, and it be torn out root and branch, leaving no stub. An occasional repetition of this process keep the orchard clear. Suckers always & slovenly appearance to an orchard, and do not be suffered to grow. They also favor depredations of the borer.—*Country Gentleman.*

Miscellaneous.

COFFEE.—The consumption of coffee is estimated in the following manner:—The whole North America consumes 337,500,000 lbs. in the largest proportion. France, Sicily, Spain, Italy, Portugal and adjacent islands, consume amongst them only 202,000 lbs.; Germany, including Austria, 292,000 lbs.; Holland and Belgium, 142,500 lbs.; Denmark, Sweden, Russia, Finland, Poland, only 75,000,000 lbs. among the nations, probably, to the fondness of the nations for something stronger. Great Britain and Ireland consume about 60,000,000 lbs.

AMERICAN INSTITUTE FAIR.—The third annual fair of the American Institute will be held at the Palace Gardens, in Four street, this city, commencing on Tuesday the 25th.

American cotton manufacturers have their most profitable business during the past and their prospects for the future are all encouraging. The anticipation of good crops from all parts of the world is at the manufacturers of England in a surprising manner. In Lancashire, about 40,000 operatives are wanted, and in the small manufacturing district of Bury, no less than 100 cotton factories are now being erected.

THE IDEA OF FIRE AMONG THE ANCIENTS. According to Pliny, fire was for a long time unknown to some of the ancient Egyptians. When Exodus the celebrated astronomer introduced it to them, they were absolutely ignorant. The Persians, Phœnicians, Greeks, and other nations, acknowledged that their ancestors were once without the use of fire, and the ancients confess the same of their progenitors. Pompanius, Mela, Plutarch, and other authors, speak of nations who, at the time they wrote, knew not the use of fire, or had learned it. Facts of the same kind are attested by several modern nations. The inhabitants of the Mariana Islands, which were discovered in 1521, had no idea of fire. This was astonishment greater than theirs, who saw it on the descent of Magellan to the other islands. At first they believed it a kind of animal that fixed to and fed upon the ground. The inhabitants of the Philippine and other Islands were formerly equally ignorant. It presents even in our own day, some instances of this deplorable state.

corn GRASS.—A correspondent sends us the following dialogue, which took place in a corn-just as stated, all but the names:

NEIGHBOR—Good morning, Mr. Plowwell—
corn, I see. What has become of all the grass that was on this farm when you were here? While Slackwheel lived here he was more quack than anything else, I believe and it was called the most quackey farm in the district.

WELL—I smothered it.

NEIGHBOR—Smothered it—how?

WELL—I plowed it from eight to ten feet deep, then cultivated it with a two horse cultivator, and planted to corn. If corn is sown, your quack will disappear, and if you wish to make summer fallow on quackey land, plow but once. Quack grass, if turned the same season, will grow again, but if kept the ground, it will die.—*Rural New Yorker*.

S. S. Blodgett, of Ogdensburgh, N. Y., writes to the *Dental Cosmos*, and condemns the fine charcoal as a tooth powder. He says that it is as sharp as diamond dust, and wears off the enamel. He says:—"The best dentifrice that should be used at all times, under all circumstances, is soap. Its alkaline properties serve to neutralize the acids contained in the fluids of the mouth, and its property is to correct the breath and remove offensive matter than any article I have ever seen."

Transactions.

Continued from page 416.

settlers could now supply themselves with the necessaries of life from the mill store, and the roving and dissipated habits of the soldier was forgotten in the staid habits of the hard working farmer. In a more adventurous turn of mind he would man a boat, and ascending the river to Oswego, take a circuitous route around by river, and betimes carrying a pack on his shoulder high for miles at a time, finally reached the green valley of the Mohawk, dear to them still in memory, returning brought such articles as they could barter with them as they could, and providing themselves with a stock of goods at Carlton Island they swiftly glided down the river. As yet there were no

A good old German, however, whose name we cannot recall, gratuitously spent his time in going from house to house teaching two weeks at a time in different neighborhoods, where the children were gathered and received such instruction

as the limited time afforded. Before the close of 1792 they had erected two churches, and thus a new era dawned upon the happy little colony of U. E. Loyalists.

[After sketching the laws, martial and civil, by which the district was governed in its early days, the report proceeds:]

INTERMEDIATE HISTORY.—From the year 1800 to the present time, the history of the County of Dundas is simply the history of Canada, and it is at least satisfactory to know that the progress and improvements of the County have kept pace with the prosperity of the Province as a whole.

The war of 1812 found its inhabitants as loyal as of yore, and at their country's call they donned their armor once more and marched against the invaders of their country. The Militia of Dundas were ever found in their right place when their service were required. A detachment of them were in the engagement of "Crysler's Farm." Another remained to protect the town and fort of Prescott when the regulars went in pursuit of the enemy—in 1837 they were again called out to quell the Rebellion, and six companies of the Dundas Militia under Col. Crysler, numbering 350 men, were present at the battle of the Wind Mill; these were enrolled and under duty for six months at this time. Since then the peace and prosperity of the County have been uninterrupted.

HINDRANCES TO AGRICULTURE.—The extensive operations in lumber consequent upon the clearing up of a new and well timbered country resulted in a state of matters very unfavorable for the progress of Agriculture. Having spent the winter in the woods the farmer had to spend the greater part of the summer in conveying his timber to Quebec. The farm was neglected, and as he could not raise even provisions enough for his own use, he was forced to apply to the storekeeper to furnish him, which he readily did at his own prices, taking the timber as security for payment. If at the end of the year the backwoodsman made ends meet, he had reason to be thankful. The majority however came out on the wrong side of the ledger, but the indulgent storekeeper was as accommodating as ever and was perfectly satisfied with a mortgage on the farm. In many cases the embarrassed farmer, still clinging to the hope of redeeming his farm, embarked with renewed energy in lumbermaking; this time it was

to "make a spune or spoil a horn." In a few cases they were successful; in many instances the farm fell irretrievably into the hands of the merchant. The intimate and seemingly necessary connection existing between the lumberman and the merchant induced the long credit system which is now however fast disappearing.

At a more recent period and previous to the completion of the St. Lawrence Canal, the farmers of Dundas occupied much of their time in conveying goods and passengers from Cornwall to Prescott. The yearly increasing tide of emigration all bound for the West gave constant employment to as many teams as could be spared. This to a certain extent tended to divide the attention of the farmer from Agriculture again, but being a ready pay business it was found to be much more profitable than the lumber trade, the material for carrying on which were now becoming scarce in the country; and even for some time after the Cornwall Canal was finished all upward bound vessels had to be towed with horses from Dickenson's Landing to Prescott. The final completion of all the canals in 1847 and the introduction of powerful steam tugs removed the last hindrance to the progress of Agriculture, since which time it has received the undivided attention of the inhabitants and has proved by far more profitable than any of the enterprizes in which they had hitherto engaged.

Trusting that these few remarks respecting the settlement and early history of the County of Dundas may not be without some degree of interest, at least to its inhabitants, we now proceed to describe it in its different phases as it now appears, noticing them in the following order: Its soil and climate, system of farming pursued, agricultural productions and products of the forest, laborers, implements of husbandry, commerce and manufactures, animal, vegetable and mineral features, religious, social and political aspects.

SOIL AND CLIMATE.—The soil is varied, chiefly however of rich loam, varying in depth from 6 to 18 inches, resting upon a substratum of bluish marly clay. It may be described for the most as level, at least with little more inclination than is necessary for carrying off the surface water. In some parts towards the centre and rear of the county it partakes more of a rolling character, but in no place does the land

rise to any considerable elevations. interspersed with numerous swale or lands, not of sufficient extent to entitle to the name of swamps, and differing importantly from these, inasmuch as they are all capable of drainage. In most where the swale has been cleared of timber, a single ditch through the suffices to carry off all stagnant water; the land is found to be of the richest most productive nature. These swales well as the other lands are comparatively free from stones. On the contrary where the land partakes of a rolling nature we find the surface freely covered with bones. A few sand knolls scattered through the country, barely suffice to furnish material for brick making and building purposes.

In addition to these swales, which are always heavily timbered with elm and there are three cranberry marshes of considerable extent. The largest is situated near Winchester and covers an area of about 100 acres. These marshes, situated in a wooded region, themselves destitute of a single tree, save here and there a spruce, present a very singular and interesting appearance. They are completely covered by cranberry bushes and are resorted to by swarms of busy berry pickers at the season when they are ripe. The soil is much not unlike the peat moss of Scotland. The marshes are inundated each spring and are quite dry again in summer. They are destroyed from accidental causes or otherwise burnt off every few years, the fire sweeps away every trace of vegetation clean before it in the prairies. The succeeding young bushes is generally most prolific.

As has already been mentioned, the choice market timber, such as Oak, Elm, has long since disappeared, and the stumps, especially of the Pine, remain a convincing and lasting monument of the depredations of the huge denizens of the forest. Here and there are to be found entire trees of immense size, cut 60 years ago, which for a slight flaw had been rejected, mostly quite sound. These have been converted into saw logs and shingle blocks. In the meantime the beech and maple, which by a law of nature seem to be the coniferous species, have grown up as stately trees, and another mine of wealth has been sprung, affording winter employment to the farmer in cutting cord wood and drawing it to the river. The ha

a ready market in Montreal and the good supplying fuel for railways and others.

There is also abundance of cedar used for fences, and also as floats to convey iron and wood to market. Hemlock and spruce occupy sandy knolls; and where beech and maple thrive we are sure of an excellent soil and especially adapted for wheat.

Clay of the county is not esteemed good for brick making, being slightly impregnated with fragments of lime stone, which in the process of burning the and subsequent exposure to the sun makes them liable to crack. Most brick used in the county is brought from Wadsworthville in Stormont or from Wadsworth in the U. S. immediately opposite. There is abundance of good building stone in the county, though not very equally distributed. The quarries are chiefly in the rear. The stone is near the surface in layers of from 6 to 10 inches, is a grey limestone and is sold at the rate of \$1 50 per cord. Common field stone, suitable for rough purposes, is delivered any part of the county at \$2 00 per cord and well burned lime at 20cts. per cord delivered.

The soil of the county upon the whole is well adapted for pursuing the mixed system of husbandry. Wheat, corn, and clover are here successfully cultivated, and is equally well adapted for the coarse grass and roots.

The climate may be fairly stated to be a mean temperature between Montreal and the extreme of heat and cold being more severe than that of the former, while a continuance of snow in the spring interferes with agricultural operations 10 days or 2 weeks longer than in the neighborhood of the

"Oldest inhabitant" says that the climate is less severe since the country has been generally cleared up. The winter has been shortened at both ends, and the clearing up of marshes and woodlands at once admitted the fresh air, diminished the number of misquitoses and other like pests, and rendered the whole more healthy and pleasant. A few facts in connection with this are not without interest and will bear us out in these remarks. At the census of 1852, the population was 10,000 and the number of deaths in one year

64, being a ratio of 1 death to 216 living, a ratio far more favourable to our County than any portion of Canada or the United States, with two exceptions, and singularly enough these two are our next door neighbors in Stormont and Russell, the ratio of the former being 1 in 240, and the latter 1 death for 220 living. The next below us being a third neighbor, Carleton, 211. Addington and Kent of similar population are respectively 1 in 98 and 1 in 84, while in Maine, U. S., the ratio is 1 death for 77 who survive. We may here state that the OLDEST INHABITANT is no imaginary personage, but a most interesting old lady, Mrs. Coons, residing in Iroquois, now in her 94th year, and in full possession of all her faculties. Peter Shaver, Esq., is one of the oldest male inhabitants, now in his 84th year; both these have a very distinct recollection of the first settlement of the County, and of the trials and difficulties which followed. We mention their names particularly, because to them we are largely indebted for information and for substantiating certain dates which will be hereafter mentioned, possessing an interest far beyond the limits of the County.

IRRIGATION.—The County of Dundas is well watered. In front is the noble St. Lawrence, here averaging a breadth of nearly a mile and a half, and of great depth. The current is swift, with an average speed of 7 miles an hour, and from its purity and softness, is generally preferred for all culinary purposes. The Rapid du Plat shoots past the centre of the County at a rate of from 10 to 12 miles an hour. In rear it is watered by the Petite Nation River, with its numerous tributaries, and in addition it is intersected by small creeks in various parts of the County; these are fed by springs and swales, and in the spring and fall, assume large dimensions, giving motive power to numerous creek mills, which, though only in operation for from 3 to 4 months in the year, are nevertheless a valuable acquisition to those living in their neighbourhood.

An abundant supply of excellent well water is found all over the country on reaching a depth of from 15 to 25 feet. Besides this, numerous springs are met with, affording the fortunate owners an inexhaustible supply of pure water without any trouble or expense on their part. There is also in Winchester, a mineral spring, similar to the celebrated Massena Spring, and held in some repute for its medicinal qualities, but as no

hotel has as yet been built to accommodate visitors. it is not much frequented, except by those living in the neighborhood.

Upon the whole then, we cannot describe Dundas as otherwise than decidedly favourable, in regard to soil, climate and water, for the successful practice of Agriculture; while its geographical position, and facilities for reaching market in summer or winter, are scarcely equalled, certainly not surpassed by any other county in Upper Canada.

ROADS.—Within the past ten years the roads of the County have undergone a vast improvement. During the last four years the large sum of £5,577 19s. 6d. has been apportioned to the County from the Clergy-Reserve Fund, secularized in 1856, and this was all expended on roads, and considerable sums continue to be annually applied to the same purpose by the several Municipalities. The result is highly satisfactory. Remote parts of the County, formerly all but inaccessible, are now easy of access. Instead of toiling through the mud, knee deep, or bumping over the rough corduroy, dressing a break down at every step, and arriving at his journey's end much in the condition of a rat from a terrier's mouth, the farmer now moves along swiftly and aristocratically in his light spring buggy, or with his wagon load of grain, with ease and comfort to himself and his team. The value of lands in the rear has thereby increased ten fold, precious time has been saved, and wear and tear proportionably diminished. Abundant supplies of the very best quality of gravel for road making are found in various parts of the County, and much of the Statute Labour is absorbed in placing it on the roads.

The highways in the centre and rear of the county, being generally nearer the supply, have improved proportionally faster than the front roads. With the exception of two, one built by a Corporation, and one by a Joint Stock Company, our roads are all free from the nuisance of the toll gate.

SYSTEM OF FARMING.—In carrying out our programme, we would now advert to the system of farming pursued in the County. We must confess to a certain measure of hesitation in dealing with so important a matter as this, and, however much our inclination might lead us to let your Board form their own opinion from the statements to be submitted, we feel it to be our duty as Directors of the County Agricultural Society

at this time to speak the truth, the truth, and nothing but the truth.

We fear our system can scarcely be wisely defined, than as the absence of a tem at all: to take from the soil all yield and to return to it no more than sity compels us to do. We do not despair. We derive strong consolation the fact, that in this respect we are no worse than our neighbors in other ties, and further, that, while the holds good applied to us as a whole, even now not a few excellent, systems, and, as a result, *money making* among us, and we shall endeavor to before you the system, be it good, successfully pursued by them.

It may be premised that as a general it is found to be disadvantageous to much upon any one thing, the greater variety, the greater seeming success.

We shall have nothing to say of the woodsman, manfully struggling to the mighty forest, which in some places almost to defy the efforts of mortal subjugate it to his use, and at the time contending with poverty, no cult to be overcome; we look for no defined system at his hands, but are that he should take it just as it comes and make the most of it. It is to the settler on his well cleared farm that look for information on this head.

The following system is pursued of our best and most successful evidently the right man in the right the President of our Agricultural His farm embraces 500 acres, where are cleared. His whole farm is with cedar fences, proof against all, by which means his cattle have the and unrestricted privilege of roaming the woods, with all the benefits there pertaining.

Of his cleared farm 120 acres are to pasture, 100 acres to meadow, and tillage. His stock consists of 20 milch 6 working horses and two brood m 60 sheep. He makes from 10 to of summer fallow every year, to applies all the manure made upon and as much more as he can produce the neighbouring Village of Mo The proportion of different grains is entirely by the adaptation of the fields entering into his rotation. each year a certain portion of fall

and carefully avoids running into excess. He ascribes his success mainly to diversity of his productions. He employs cheap labor, say three at \$8 per month a year round, and keeps a sharp look on them; he generally has an apprentice two, who work gratuitously, and are paid with \$100 or so when they come of age. In hay and harvest time he employs 6 best men that can be had, at from 75c. per day. At these times he can count it to be important to be strong-handed, and he saves time by the forelock. He does not cut his clover hay in the end of summer, and by the time the timothy is ripe, he cuts it down in the morning, spreads it immediately, and puts it in the barn next day. He uses a horse-rake, but not a scythe, and the greater portion of his grain is threshed with the flail, just as it is referred to for his cattle. He raises 8 calves, as many head of cattle at 3 or 4 years old; two colts at 4 years old yield him \$100 each. He has his own wool cloth for his own wear, eats his butter, and has always some to sell. He has neither Ayrshire cows nor Clydesdale but has great faith in both, and will take the first opportunity to get into these

troubles. He wages a war of extermination against weeds, thistles, and quack, and very often his crops disappoint his expectations. He has 8 wells with chain pumps, and keeps his cattle trough always full of water, and supplies them with abundance of summer. All his grain is freely stored away in the barn, and is highly relished by his cattle in winter. His brood mares run on the straw and suckle their colts all winter until the first of April, when the colt is weaned for sale. His cattle are fed in winter with a very little hay, and neither grain, and in spring never need to be fed.

He carefully removes all surface water, and does not underdrain his land, and his farming is profitable, but hay excels.

His average return of hay is 1½ tons per acre, his maximum 2½, and his minimum. He sells largely every year of average price of \$10 per 2000 lbs. The average yield of hay for 1859 in the whole County to be not exceeding 1 ton per acre. He considers roots too expensive, and his principle is to keep no more than he has abundance of food for.

This is his usual rotation of crops:—

On Heavy Rich Land.

1. Summer fallow manured.
2. Wheat.
3. Corn and potatoes, no manure.
4. Barley or peas.
5. Oats
6. Summer fallow manured.
7. Wheat sowed to grass.

On Lighter Soils.

1. Summer fallow manured.
2. Corn and potatoes.
3. Barley and sowed.
4. Grass cut 3 years.
5. Pasture 2 years.
6. Peas followed by fallow.

The following treatment of old meadows is found successful in his hands:—Break them up in the fall, summer fallow ensuing summer without manure, and seed down in August without a crop. He generally gets 1½ to 2 tons from the first 2 crops. To every 10 bushels of timothy sown, he adds 120 lbs. of clover, and sows ½ bushel per acre of the mixture. If his cattle cannot consume the aftermath, he cuts a second crop of hay. He opines that grass seed is generally sown too thin, that farmers are too careless in extirpating weeds, that practical farmers work too much, and that gentlemen farmers oversee too little. It is a mystery to him to hear intelligent and industrious men speak of farming as unprofitable, and the summing up of his evidence leaves no doubt in our minds that his system pays, which he corroborates by the following figures:—In 1832, he went on to a farm of 250 acres, with 2 horses and 2 cows, and \$400 of debt. In 1840 he purchased 250 acres adjoining, for which he paid in cash down \$4000. Up to 1860 he has spent at least \$4000 cash in building and fences, besides other large improvements. He has cleared for the last 20 years more than \$600 per annum, and has now \$10,000 at interest at 10 per cent. He values his farm at \$14,000, and is quite satisfied that it yields him not less than 10 per cent. per annum clear of all expenses.

DAIRY FARMING.—Dairy farming is not extensively practised. We have but one in the county who devotes exclusive attention to it. His farm extends to 300 acres cleared, of which 150 acres is in pasture, 50 acres in meadow, and 100 under tillage. He pays an annual rental of \$450, or \$1.50 per acre;

keeps 55 cows he values at \$35 per head; he makes annually 230 cheeses averaging 60 lbs. each, which he sells for 10 cents per lb. He raises 13 calves and fattens 6 pigs, both are chiefly fed upon whey, and disposes yearly of as many old cows as he can replace with young ones. He has 6 head of horses and 10 sheep. His average cut of hay is one ton per acre. As a rule he grows enough hay and straw to feed his cattle in winters. His cows are fed hay and straw daily in winter, and stabled at night without bedding. In the fall they are fed oats in the straw until 1st December, when they are all put dry. He feeds some bran in spring, but neither roots nor grain. He keeps in summer two hired men and one female servant. His farm is economically managed, and he is reported to be making money.

IMPROVED STOCK BREEDERS.—Very little attention has as yet been given to what is called the improved breeds of cattle; more or less there has been a certain amount of prejudice against them. It seems difficult to give the objections to their introduction a tangible form. The prevailing idea is that they consume too much food in winter. In other words we are disappointed to find that they will not live on air, and to observe that in this respect they are no better than our native cattle. J. W. Rose was the first, many years ago, to introduce Durham and Ayrshire breeds of cattle. On leaving, his stock became scattered through the country, but being, in most cases, subjected to doubtful treatment they were pronounced inferior to the natives. It is our firm opinion however, that the opinion is erroneous.

Mr. Elliot, of Matilda, has some good stock, and keeps them well; he commenced by purchasing some high priced animals from the late Ralph Wade, of Cobourg, in 1855. Since then he has raised some choice stock. We submit the result of his observations and experience in this matter:—He conceives the most desirable breed of cattle for this country to be a cross between Durham and Ayrshire, and the next best to that, Durham crossed with native. With nothing more than fair treatment, they thrive with him equally well with the native breeds, far excelling them as milkers, and when fat will readily bring double the price as beef. He finds the yield of milk from a half Durham, quarter Ayrshire, and quarter native cow to be 25 quarts per day for three months after calving. A steer 18 months old was

killed by him in December 1859, which no time was stall fed, had only the common pasture, rendered scanty by an exceedingly dry summer, the four quarters weighed 500 lbs., worth 4 cents per lb. hide and tallow 160 lbs. more at \$8 yielding \$28 for a yearling steer. He does not believe in *high feeding*, but takes particular care of his calves by giving them of such good homely fare as every one can command, a warm stable in cold weather and a comfortable bed to lie upon. His first year, he says, forms the character of the beast. It is true they refuse to live on *nothing*, but with ordinary attention will do no trouble in raising them. He conceives that the cattle of the county, as a general rule, are well summered and badly wintered.

SHEEP.—Much improvement has in a few years been manifested in regard to the breed. The most desirable breed for the county is thought to be a cross between the Leicester and Cheviot, combining the properties of superior mutton, heavy fleeces of most fine wool, with a healthy constitution. The natives are more easily *imagined* than described; they have not a good point can lay hold of: *low necks*, long light fleeces, restless and roving in their positions, they will bound over the fences. It is from this cause that the ringleaders of every flock *shave* with a bell strapped round their necks is humane in comparison with the farmers of Cacouna, who deliberately cut the hoofs of their sheep off to the quarter to leave them to hobble in agony to their knees.

PRES.—We are more happy in regard to sheep; the small Berkshire, when dressed, about 300 lbs., is the *ultra* of pork, easily fed, comes to maturity, and when placed on the market is unsurpassed.

HORSES.—In these there is great room for improvement. The breed is deficient in size and symmetry. There is no good entire horse in the county. The same is true of the native cattle, so with horses, a strong prejudice has hitherto existed against imported horses. An imported Clydesdale, and excellent specimen of the breed introduced some eight years ago, and regarded as an *innovation*, and not appreciated he was withdrawn near Ottawa for \$1000 cash; probably he cost as a two year old, fair

half of Montreal from Rutherglen, and. The scanty stock which he left county are now the very best horses re, and can scarcely be bought for love money. The much talked of "horse of the" we esteem to be a manifest *populusion*. The *fast* man must still drive a horse, the *working* man his *work-horse*. When a heavy load is to be hauled from an ugly place the 2-40 animal must do. The horse of all work is well adapted for a light harrow or for scarifying surface with a light plough, but to heavy land with a good deep furrow it heavier metal.

RENTING LAND.—We may state the annual rental of fair farms in the county to be \$1.50 per acre including pasture, meadow, and tillage. Farms are frequently let from year to year. To a certain extent this betokens a mutual distrust between landlord and tenant, and is consequently a barrier to any permanent improvement of lands so let. As the great bulk of farmers are their own landlords it is unnecessary here to refer to the numerous disputes to the landlord, tenant, and the success of the short sighted policy of the times.

RENTING LAND ON SHARES.—A different method of letting land has, during the last few years been more generally adopted. It is to let the share system, which operates in three ways. 1st. The tenant finds all his implements, stock and seed, and yields the landlord one-third of the gross produce and, including hay and straw. 2nd. The tenant finds his own implements and stock and one half of the seed, and yields the landlord one-half of the produce. Or, the landlord finds all the implements, stock, horses and seed, and receives two-thirds of the gross produce. The second system is most commonly adopted, and is the dernier resort of what Mr. Hogan would call the gentleman farmer. We give the following exemplification of the system:—A farmer whom we shall style A, purchased a farm of 500 acres, where he cleared, and for 10 years prosecuted with energy and assiduity, and reared the best stock within his reach, and had the best implements to be had in the country, and the best laborers at the highest wages, and erected buildings in every respect adapted and convenient for conducting a farm to advantage. At the end of 10 years

there was but one trifling desideratum: he could not exhibit a balance sheet; in other words it didn't pay. In this respect alone he resembled immortal Mechi of Tiptree Hall, at the end of his 10 years probation, with this difference however, that he failed in securing for himself a name, which was profitably turned to account by Mechi in vending razor strops at No. 244, and 45 Leadenhall Street, London. Discouraged, but not in despair, his farm is now managed on the shares system, and the following are the figures for 1859, an unfavourable year on account of long continued drouth, severe potato rot and frost blighted corn. Hay averaged 1 ton per acre, valued at \$14. Wheat 15 bushels per acre at \$1.10. Oats 35 bushels per acre at 35 cents. Buckwheat 29 per acre at 40 cents. The following is his rotations of crops: 1st. Summer fallow, or hoed crops, manured. 2d. Wheat or barley, sowed with timothy, 1 peck, and 5 lbs. clover. 3rd. Meadow cut 3 years, with half barrel of plaster the third year. 4th. Oats or peas followed by green crop manured. Of 250 acres, 56 were let for \$75 or \$1.35 per acre. 194 acres let on shares which yielded a clear rental of \$4.90 per acre. Orchard and half of pasture retained by landlord.

By his share of produce.....	\$940 04
“ Rent from other portions, houses, &c.....	130 00
“ Live Stock sold, wool, &c.....	296 00
“ Rental of house and garden, (cost £2000).....	365 00
	<hr/>
	\$1731 04
Expenditure for seed, &c.....	130 80

Net return.....\$1600 24
Cash value of farm say \$16,000—Interest 10 per cent per annum.

If these examples are of any service in describing our system of farming, we can vouch for the correctness of the statements produced. The first and last are the nearest approach that we can give to any system here. The other two are as yet the exception. Underdraining is much needed here, and little practised; like other improvements it only wants a beginning, and were a few of our good practical farmers to try the experiment of thorough tile draining, we have no doubt but that it would soon become general. Perhaps one of the greatest errors in our system consists in keeping more stock than we have sufficient food for, the result is

that the straw, instead of being made into manure, is nearly all eaten up, and there being no facilities for purchasing manure it becomes a difficult matter to keep the land in a productive state, and it has become a serious question amongst scientific and intelligent farmers whether, even with the very best management, the ordinary resources of an ordinary farm are capable of maintaining the fertility of every portion of it.

The horse hay rake has long been in general use; the American style upon wheels four feet high seems to be preponderant. Reaping machines have been introduced and are successfully worked.

In view of our present facilities for successfully prosecuting agriculture, and the very general indication of intelligence and improvement every where observable, we confidently anticipate that the next ten years will exhibit a progress far beyond anything that we have hitherto witnessed in this country.

OF LABOURERS.—The greater part of the labour of the farm is performed by the farmer himself, his sons and daughters, the former managing all the out-door operations, and the latter the dairy and domestic departments. Herein indeed lies all the secret of his success. Whatever qualifications the farmer should have, mental or physical, all are agreed on this one point—that a good wife is indispensable, and what it is the aim of the husband to accumulate, it becomes the province of his wife to manage, and whenever we hear of a managing wife, we are sure to find a money making farmer, and *vice versa*.

The average of our farms are 100 acres each, with from 50 to 70 acres cleared, two-thirds of which may be in pasture and meadow, the remainder in tillage. The demand for labor is therefore limited, and the supply equal to the demand. In 1852, there were in the county 1258 laborers, 53 male and 74 female servants, while at the same time there were 1570 farmers; three-fourths of the female servants are employed by other than farmers, so that not more than 18 farmers' wives required *hired help*. The usual rate of wages for laborers in the county is from \$10 to \$12 per month, for the summer, \$8 to \$10 for the year round, \$7 to \$9 for the winter. Daily laborers in summer receive from 50 cts. to \$1; in winter 50 cts., and expert cradlers earn their \$1 25 per day, all boarded. Laborers

are chiefly immigrants, Irish, German, few Scotch. They seldom continue longer than four years. If during time they are industrious and economical they have laid up enough to stock a farm, remaining as tenants a few years. They meantime look for a desirable farm that they may call their own, and soon as a suitable one turns up and the muster \$100 as a first payment, the treaty takes place, the log shanty is erected, the labours of the early settler are repeated with this difference, that the modern woodsman is surrounded with the fruits of civilization, in roads, markets, and which far more than compensate the difference between paying \$100 for and receiving it as a gift from the 75 years ago. Mechanics are well represented there are enough of them. Carpenters, smiths, masons and bricklayers receive \$1 to \$1 50 per day, with board. In 1852 we had 76 carpenters and joiners, 10 masons, with regard to blacksmiths bricklayers the census is silent; the few from Lower Canada are in this respect correct.

AGRICULTURAL IMPLEMENTS.—The implements of the county are kept up with other improvements. The first portable thrashing machine was introduced 20 years ago. It was one of the American horse power thrashers, without any other power. The whole power was in turning the cylinder of 2 feet diameter at an enormous velocity of 1500 revolutions a minute, (the maximum speed of 3 feet in diameter, of the best British is 400). It literally devoured the grain and required 10 to 12 hands to attend and left the barn in a woeful state of confusion. If kept on full speed for 10 hours it would thrash 500 bushels of wheat in short it was quite in advance of the time and was soon superseded by one of a higher pretensions, driven by the platform horse power, a Yankee invention. About 1840 the first treadmill, called, was here introduced.

In 1859 there were 10 reaping and 200 thrashing machines in the county the latter chiefly of Paige's and make, Montreal. Cost price delivered £50. They are very compact, and effective mills, with separator a mill combined, and will thrash upon an average 60 and from

of wheat per day, and from 150 to 200 bushels, according to quality. Circular ploughs mounted on a frame ready for work, of the size of \$40 are much used; they are driven by the same horse power placed at a lower position, and will cut 30 cords easily in a day with 4 or 5 men to assist.

Ploughs we have an endless variety. The most is undoubtedly the Scotch plough, which there are not over a dozen in the county.

The nearest approach to that and probably the next best that we know of, is made by James Millar & Co in Montreal, which they sell complete for \$8. Their tooth diamond Scotch harrow, coverlet, is fast superseding all others on the farm and is the best. No grubbers are used in the county, and sub-soil ploughs are rarely. Cultivators worked between rows of corn and potatoes are commonly used. Turnips, carrots and mangels are extensively grown, and are sown by hand. We have no machines for drilling in rows or broadcast sowing machines; the harrow covering a space of 16 feet, the width of the furrows, would be a valuable acquisition. Roller machines are used to some extent. Hay is very perishable, and cast iron ones are used.

Two horse lumber waggons cost each, are used to transport all the timber of the farm. Carts are considered a horse affair, and are not much used. They are made with wooden axle trees and upwards. The price of a good eight wheel with box complete and painted is \$100. Excellent fanning mills are made at Williamsburgh by McKenzie, at the price of \$100 and are largely exported to adjacent counties.

We embrace the principal implements of agriculture; they are all of Canadian manufacture with the exception of a sowing machine. We are not aware that any others are required.

AGRICULTURAL PRODUCTIONS.—We find it difficult with the means at our disposal to give a correct statement of the agricultural products of the county for the year 1859. The figures we might present would be only an approximation, and we do not state nothing here that we cannot substantiate, we prefer to go to the census and give the products of 1852, trusting that the figures fall in measure of what will be exhibited by the coming census of 1861. What we have however will serve to show the

proportion of different grains cultivated and the average per acre.

AGRICULTURAL PRODUCTS OF DUNDAS, FROM CENSUS OF 1852.

GRAINS.	ACRES.	BUSHELS.	AVERAGE.
*Wheat.....	7,308	111,979	15 20-60
*Barley.....	930	21,432	23
Rye.....	525	9,329	17 4-5
Peas.....	1,938	32,863	17
*Oats.....	6,654	155,381	23½
Buckwheat.....	833	16,321	20
Potatoes.....	1,435	90,877	63
Corn.....	1,003	22,109	22
Turnips.....	31	2,396	76
Carrots.....		2,132	
Mangel Wurzel.....		3,911	
Wool.....	lbs. 50,404	3¼ lbs. per fleece.	
Butter.....	" 358,488	per cow 66 lbs.	
Cheese.....	" 15,918	" 3 "	
Maple Sugar.....	" 36,850		
Hay.....	tons. 14,385	acres not stated.	
Horses.....	3,863		
Cows.....	5,454		
Sheep.....	15,298		
Pigs.....	6,740		

COMMERCE.—The total value of goods sold in the county in 1859, is as follows:

Township of Williamsburgh.....	\$150,000
" " Winchester.....	75,000
" " Matilda.....	76,800
" " Mountain.....	18,500

Total amount paid by farmers for goods..... \$320,300

There are in the county 2,666 families who thus tax themselves the sum of \$120 each per annum for store goods.

There are 30 shops and stores in Williamsburgh, 24 in Matilda, 11 in Winchester, 7 in Mountain, in all 72.

Traders sell at an average advance of 25 per cent. for cash.

[The report here gives a series of tables of exports, for which we have not space. The following is the summary:]

Williamsburgh and Winchester exported.....	\$139,760 29
Matilda and Mountain ".....	98,885 96
Total export of county, 1859.....	\$238,646 25
" imports ".....	320,300 00

Excess of imports over exports \$81,653 75

The deficiency of exports to pay for imports is accounted for by a large proportion of produce sold by merchants to laborers in

*There is a slight variation in the tabular and abstract returns of these in census.

the county, and by a considerable amount taken out of the county by private parties.

CUSTOMS, 1859.—Value of goods exported to United States and passed the customs, travellers, carriages, &c. exclusive \$40,189

Value free goods imported from United States	24,901
Value duty paying goods.....	6,399

Total imports from U. S....\$31,300

Free goods are those imported under the Reciprocity Treaty, two-thirds of which are composed of travellers' horses, &c., settlers' goods, &c. &c.

Freight forwarded by Grand Trunk R. R. Co., 1859, from the county, 2,202 tons.

MANUFACTURES.—The following mills and manufactories in the county, 1859 :

Grist Mills, 8 ; No. Run of Stones, 19 ; Saw Mills, 26 ; Number of Saws, 43 ; Carding Mills, 4 ; Tanneries, 8 ; Carriage Factories, 4 ; Foundries, 1 ; Chair Factories, 3 ; Stave Factories, 2 ; Lock Gate Factories, 1 ; Fanning Mill Factories, 1 ; Total by power, 42 ; Total by water, 31 ; by Steam, 11.

These mills and factories work chiefly for the home market, and their exports are included in the general exports of the county. Grist mills grind on an average 6 bushels wheat per hour each run of stones. Saw mills cut per day 2,500 feet each saw while working. Carriage factories turn out annually 38 buggies at \$90, 70 cutters \$32, 30 waggons at \$70. The steam-stave cutter cuts 10,000 per day, or 60 to 70 per minute while working, has a 25 horse engine which runs on refuse shavings alone, and employs 10 hands ; staves cut by circular saws are a trifle more valuable, and are turned out 7 to 8 per minute.

The fanning mill factory has an engine 8 horse power, runs on shavings, employs six hands at \$1 per day and turns out 250 mills per year at \$24 each, 200 of these are sent to Montreal, Ottawa and Glengarry. The foundry casts 65 tons metal annually, and turns out 400 ploughs at \$8, and 75 stoves at \$20, besides other castings.

The lock-gate factory employs 12 hands, and turns out 7 pair lock gates at \$3,000 per pair.

A first-class grist-mill of stone or brick, with flume complete costs \$3,500 to \$4,000 per run of stones. First class saw mill complete, except the dam, costs \$1,000 to \$1,

500 per saw. First class high pressure engine, except the building, costs \$100 horse power delivered here. A well farm house 26 by 36, with kitchen, &c. by 24, 1½ story, with cellar complete, \$1,600. A barn costs \$4 per foot in length. Board fence with cedar posts sunk 4 feet a straight well-built cedar fence costs \$1 rod. Bricks \$4 per thousand at the Stone \$1.50 per cord at the quarry. 15 cents per bushel at the kiln.

SOCIAL ASPECT.—Under this head we shall endeavour to present a brief outline of the manners and customs of our people at the present day ; their position in regard to legal, municipal and educational institutions ; the different public societies to be found among them, and the public burdens.

Mr. Hogan,* in his admirable picture of 1855, speaking of the farmer of Canada, describes us so truly that we need merely to quote his words:—"The farmer of Upper Canada has plenty, and he uses it. A large proportion of the people live on the same table with their servants and borers."

There is found to be a mutual dependence between master and servant, which completely removes the distinctions seen in older countries betwixt these ranks. As a result of this, the man who is content to place his servants upon terms of equality with himself is never at a loss for labour. His work is well and cheerfully performed while on the other hand, those coming from the old country and who feel displeased were to stand upon their dignity, and less, experience great difficulty in doing with suitable servants, and it is in such a case that servants remain long in the country. "As a general rule, the gentleman is not or rather the gentleman *who would not be a farmer*, because he would not value the value of labour, has lamentably failed the gentleman however, who is willing to take off his coat, and as the Yankee observes, to march forward to his own axe, may be certain of pleasing his children well off." The Scotchman who raised himself from a ploughman to affluence, forcibly says, "Na, na, there's nae gentlemen in this country," and we believe there is more truth than poetry in the assertion, while

* This was written before Mr. Hogan's disappearance had begun to excite

of Burns, at once poetic and true, find
tho in each of our sturdy farmers :

What tho' on homely fare we dine,
Wear hodden gray an' a' that,
The fools their silks and knaves their wine,
A man's a man for a' that."

The patriotic Canadian this state of society is rather pleasing than otherwise. It betrays a friendly and harmonious feeling, and evinces a spirit of independence and enterprise amongst all classes,—honesty, industry and intelligence never fail to be recognized in whatever station the man is found. Unfrequently those who are learned in literature and law have to chew the bitter of disappointment, and in aspiring to positions of elective distinction, have to submit to the practical farmer or the ingenious mechanic, whose accomplishments summed up in the one comprehensive phrase *plain common sense*.

In this class, our farmers are persevering rather than enterprising, slow to compromise themselves by word or deed, but honest in transactions; the faculty of accounting property is fully developed; never deficient in money, they are yearly surrounded by themselves with all the necessaries, and most comforts of life; the home spun hosiery, manufactured in whole or in part by the farmer's family, forms his daily dress, the finer fabrics of Scotch tweed and broadcloth supply them with a suit for all occasions. The wives and daughters of farmers are neat and tidy in their personal appearance and industrious in their habits, slow to bear a hand when help is needed in the barn or in the field. And when they are attired for "meeting," even Broadcloth cannot present a more elaborate and fashionable embellishment. If a farmer is blessed with a family of sons, more than one or two remain at home receiving as good an education as the county affords. The rest branch out in different ways to push their fortunes.—Some spend a few years as Common School boys, and thereafter engage in any other lucrative employment that may offer. Some have found employment, with good remuneration, in the management of mills, steamers and telegraph; some have studied medicine at Toronto and Montreal, and a very few have turned their backs on the law, they are rarely found here, but in the West, while divinity appears to

possess no attraction whatever, at least we are not aware of any such students natives of the county. This is certainly a matter of regret, and must be regarded either as an indication that the office of the ministry is not appreciated and supported among us as it ought to be, or that the principles of self-denying Christianity are still latent here.

Love of home is a prominent trait in the character of the young men of Dundas, hence very few have been tempted to the gold diggings of Australia or California, while the greater part of those who leave the paternal roof ever cherish the hope of returning at some future time to abide in their native country.

MUNICIPAL.—In 1800, we find from an old collector's roll that a uniform rate of assessment was imposed upon each freeholder of 2s. 6d. for each 100 acres occupied by him, 2s. if under 50 acres, and 1s. for a householder.

In 1832 the assessment for the Eastern District purposes was at the rate of 1d. in the pound, and the amount raised was \$7,080.

In 1858 the total assessment of *Dundas* for county and township purposes, was at the rate of 2 cts. in the pound, and the amount raised was \$10,000.

Williamsburgh expends yearly in roads \$2,000, and Matilda \$1,600, exclusive of Clergy Reserve appropriations. The total amount received from this fund in 4 years ending 1859, was \$5,577 19s. 8d. the whole of which was also expended on roads.

The number of brick and stone buildings in the whole Eastern District in 1832, was 36, and in 1852 the number in Dundas was 109, in Stormont 96, and in Glengarry 59, total 264. Next census will find Dundas at least trebled.

[Some statistics in regard to educational and other matters are here unavoidably omitted. The facilities for obtaining a grammar or Common School education are shown to be good, and at a moderate cost.]

AGRICULTURAL SOCIETIES.—The first Agricultural Society in the county was established in the year 1830. In February, 1853, a society was organized under the Act of 1852, and has continued in existence from that time, with some slight modifications in the constitution under the Act of 1857.

It affords us pleasure to testify to the steadily increasing efficiency and usefulness

of the County Society as now organized. Although still very far from the position we should like to see it attain, each successive annual exhibition marks improvement in some agricultural feature or other. At the last show held in October, 1859, the improvement in horned cattle was very decided, some fine specimens were exhibited of well bred Durhams. In sheep there was also an improvement, and a ready market for all that could be spared was found upon the spot. Horses, however, were inferior in quality to former exhibitions. There was an excellent display of butter, while the grain and vegetables were very creditable. The number of spectators was beyond former years, giving symptoms of increasing interest.

[We here omit a large portion of the report relating to the denominational religious institutions of the County.]

PUBLIC BURDENS—ASSESSED AND VOLUNTARY.—The Municipal assessed taxes come to 2c. in the \$4; additional school tax, 1½c. in \$4; voluntary religious tax, 1½c. in \$4; total tax for School, Church, and State, 5c. in \$4; or at the rate of 1¼ per cent. on the value of property. *E. g.*—A farmer who owns 100 acres of land, which with his personal property is valued at \$2,000, would pay municipal taxes, \$10; school tax, \$7.50; for religion (if he paid his share) \$7.50; in all \$25 per annum. The *storekeepers'* tax amounts to 64 cents in \$4, or at the rate of 16 per cent, annually on the value of property.

CONCLUSION.—We believe there is no such thing as sublunary perfection, and even though there were, we should be very far from claiming it for the County of Dundas.

We have endeavored to give an outline of its features in different lights, not as they *ought* to be, but as they *really are*, and we are fully assured that in every light in which it can be viewed, there is abundant room for improvement.

We should like to compare statistics with any other county of similar population, in order that from them we might learn wherein we are most deficient. In prosecuting our enquiries, various improvements and amendments have come under notice, and we conclude this Report by here submitting a few of them.

As farmers we have much yet to do and to learn before we reap the full benefit of the healthy climate, moderately fertile soil, and

other physical advantages which a bountiful Providence has conferred upon the County of Dundas.

Were less attention manifested to increasing the extent of our farms and the number of our stock, and *more* to thoroughly cultivating the former and taking good care of the latter, we should not only secure an increased revenue from our farms, but should do this a great deal more easily ourselves, and at a much less expenditure of labor, &c.

We have yet to learn the fundamental principle the most important of all improvements needed with farming: thorough understanding. The naturally level nature of our soil particularly calls for it. Did it pay us by any other way it certainly would lengthen the time for performing agricultural operations at least two weeks later in fall, and three or four weeks earlier in spring; and where our seasons are so short, even a few days become of great importance. Many of our richest lands cannot be touched (because damp) until the first of May; if drained, we should have disposed of by the first of May.

We would strongly recommend the farmers of Dundas to improve their breed of cattle. This might be done according to the means within their reach; our opinion is that the cross between Durham and Jersey is peculiarly suitable for our purposes.

The sooner we improve our breed of sheep the better it will be for us. The *best* are annually sold, and we shall soon have nothing left but the

As a community, too much attention should not be given to the improvement of the soil. Much of the statute labor of the County is lost, from want of proper management.

Agricultural societies should hold regular meetings, especially in winter, for the purpose of mutually receiving and parting useful information. The *"dian Agriculturist"* should be in every farmer's hand.

Each County Agricultural Society should devote yearly a portion of its funds to reporting improved breeds of horses, sheep, and thus place these within the reach of every member of the society.

We believe that the source of our agricultural languencies and deficiencies is to be found in one of two prominent traits: first, the love of money, and secondly the love of the natural course of events, work its

men will discover that money in itself, no value further than the amount of which by its agency it enables them to accomplish. Even now we find enterprising farmers, wisely expending the accumulated dollars of their fathers in permanently improving their farms. While thus fitting themselves they become public factors; and the habit acquired will stop at our own door, but will lead us on a path of philanthropy.

I would very respectfully suggest to the Board of Agriculture, that a case for drainage might be imparted to the farmers of the County, if the services of some duly qualified person of practical experience were directed under the auspices of your Board to deliver at one lecture before each County Society in Upper Canada, accompanied with a set of the tiles and draining tools; and information in respect to the cost of laying of tiles, and of tools, and if need be, orders for tiles to be delivered

would further respectfully state our opinion that the sub-division of the Legislative grants to township societies is productive of no good, but is rather a squandering of public money, and therefore should be discontinued. The improvements to agriculture which the public have a right to expect will more naturally flow through the aid of the County Society, if sufficient funds are placed at their disposal to enable them to import good stock, encourage literary and scientific attainments among practical farmers, and generally by liberal premiums and merit, and engender a spirit of emulation and enterprise amongst the farmers.

Editorial Notices.

MEMORIALS IN FAVOR OF THE DESIGN OF A NATIONAL STATISTICAL SOCIETY. OR COLLEGE-MAN IN LONDON. By A. C. Hope, Esq., Cornhill. We are in receipt of a copy of this pamphlet. It was written on the occasion of the approach of the Statistical Congress at London. The object of the writer is to obtain the sanction of a Society, or of some other authority, for the purpose of collecting and rendering available to the inhabitants of England and the Colonies full information in regard to the condition and resources of the numerous Colonies

of the Empire; a kind of information that is at present very difficult to be obtained. We should be certainly glad to see some such project carried out. The writer is a brother of the Rev. Mr. Hope, lately editor of the *Old Countryman*, in this city.

BLACKWOOD'S MAGAZINE FOR AUGUST, 1860. The Contents of this number are as follows:—National Defences and Volunteers; Lord Macaulay and Dundee; The Pursuit of Tantaia Topee; The Great Earthquake at Lisbon; Norman Sinclair, an Autobiography, part VII; Wycliffe and the Huguenots; *Domine, Quo Vadis?* The Transition State of our Indian Empire.

All the Reviews and Blackwood's Magazine may be obtained at H. Rowse's, Toronto.

PREMIUM LIST, California State Agricultural Society. We have to thank O. C. Wheeler, Esq., Secretary of the Society, for copies of this list. The exhibition is to take place on the 19th to 26th September at Sacramento. The California Society appears to be flourishing, and exerting itself to improve the Agricultural and Industrial pursuits of the State.

THE LONDON QUARTERLY REVIEW FOR JULY. —The following is an abstract of the Contents of the present number: I. The Missing Link and the London Poor; II. Joseph Scaliger; III. Workmen's Earnings and Savings; IV. The Cape and South Africa; V. Ary Scheffer; VI. Stonehenge; VII. Darwin's Origin of Species; VIII. The Conservative Reaction. The character of this Review is so well understood that it is almost unnecessary to say a word in its favor. Some of the articles in the present number will be found especially interesting, not only to the politician and the grave philosopher, but to every reader of cultivated taste, feminine or masculine. We hope to see these valuable re-publications attain a largely increased circulation in this Province, and displace much of the worthless rubbish under the name of light literature now offered to the public.

This number commences a volume. Price of one Review, \$3 a year. Price of the four Reviews, \$8. "Blackwood" and the four Reviews, \$10.

TRANSACTIONS OF THE NEW YORK STATE AGRICULTURAL SOCIETY FOR 1858. We are indebted to the politeness of the Secretary, B. P. Johnson, Esq., Albany, for a copy of this volume. It contains, as usual, a large amount of valuable and interesting matter, some of which we shall be glad to be able to notice more fully on a future occasion.

WISCONSIN STATE SHOW.—We have received Prize List, &c., of the Tenth Annual Exhibition of the Wisconsin State Agricultural Society, which is to be held at the city of Madison, on the 24th to 29th inst. Wisconsin is making very rapid progress in Agriculture; the scenery in the vicinity of the Show grounds is beautiful; and we may safely promise any of our readers who may find it convenient to visit that part of the world, an interesting exhibition and a cordial welcome from the officers and members of the Society.

In common engineering practice, the combustion of a pound of coal imparts to the water in a steam boiler about 10,000 units of heat, which is equal to the evaporation of 8 lbs. of water of ordinary temperature. In the laboratory 14 lbs. of water have been evaporated with one pound of coal.

The population of the world is now estimated at 1,279,000,000, viz.: Asia, 755,000,000; Europe, 272,000,000; Africa, 200,000,000; America, 50,000,000; Australia, 2,000,000.

Markets.

TORONTO MARKETS.

WEDNESDAY, Aug. 29, 1860.

The supply to-day was about the same as yesterday. The quality of the Fall Wheat is getting better every day—very much improved. One load to-day brought \$1 27 per bushel; several loads brought \$1 25, and the average of the entire sales was about \$1 23. The range for a prime article was from \$1 15 to \$1 25; and for common to fair \$1 08 to \$1 14. On the Grand Trunk R. R. good Fall wheat sells at from \$1 17 to \$1 20 per bushel. Spring wheat is still poorly supplied. There were only a few loads on market to-day, which brought from \$1 05 to \$1 10 per bushel. Of barley about 750 bushels realized from 62 to 66c; the average being 64c. Oats are in small supply at from 30 to 32c per bushel. Peas also in small offering; one load sold at 60c per bushel. Flour—there is still little doing, and quotations are as follows:—No. 1 Superfine, \$5 15 to \$5 20; Fancy \$5 30 to \$5 40; Extra \$5 55 to \$5 85; Extra Superior \$6 to \$6 30 per bbl. Hay \$9 to \$14 per ton. Straw \$5 to \$7 per ton.

PROVINCIAL EXHIBITION

TO BE HELD AT

HAMILTON,

ON THE

18th, 19th, 20th & 21
SEPTEMBER, 1860.

Entries of articles for Exhibition, except Horticultural Products, Ladies' Work and Foreign Products, must be forwarded to the Secretary's Office, Toronto, on or before September 1st.

Horticultural Products, &c., may be sent till the evening of Monday, 17th, when books will be closed.

Entries, as above stated, will be received in Toronto, till the evening of Friday, September 14th, and afterwards at Hamilton.

Prize Lists and Printed forms of Entries, containing full information, may be obtained from Secretaries of Agricultural Societies, or Farmers' Institutes, throughout the Province.

Articles for Exhibition must be placed at the Crystal Palace, or on the Grounds, on the 17th, except Live Stock, which must be not later than Tuesday, at noon.

Exhibitors must themselves provide for forwarding of their articles, and placing in the grounds.

HUGH C. THOMPSON

Secretary Board of Agriculture

BOARD OF AGRICULTURE OFFICE,
Toronto, August 24, 1860.

AYRSHIRE CATTLE—Patrick R. Wright, Cobourg, C. W., breeder of Ayrshire Sheep, &c., has several young Bulls and Sheep for sale. His herd is well known as the best in Canada West, and his terms of sale liberal.

Full Pedigree of all animals—U. C. Register.

The Agriculturist,

OR JOURNAL AND TRANSACTIONS OF THE
OF AGRICULTURE OF UPPER CANADA

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Not being now able to supply the subscribers of the current volume, the subscribers to "The Agriculturist" from 13th May to the end of the year will be 30 cents per copy, with bonus at the end of the year, viz.: one additional copy with each year and paid for in advance.

For the half year commencing 1st July the price is 15 cents. Nine copies for \$2.