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THE

Canadian Agriculturist,

OR

JOURNAL AND TRANSACTIONS OF THE BOARD OF AGRICULTURE

OF UPPER CANADA.

VOL. XIII. TORONTO, MAY 16, 1861. No. 10.

The Season.

The present must now be fairly considered as late spring; all kinds of vegetation being a fortnight behind the average of years, with no immediate prospect of a decided change. We fear that the late severe frosts have done considerable damage to winter wheat in exposed situations, and that many fields have been ploughed up for spring grain. It is to be hoped that the damage has been only partial, and that the great bulk of the extensive area sown to wheat is secure. The weather has been extraordinary, and all kinds of field work are behind. May was ushered in with a severe snow storm, and for several nights the thermometer sunk several degrees below freezing! Generally the weather has been dry, and the days comparatively cold; fruit buds and vegetation have therefore been kept back, and with a more genial temperature to come, they may not be found to have sustained any very serious injury. The recent heavy fall of rain put a stop for several days to farming operations, and upon heavy lands, at this advanced period, must prove detrimental. Still, if settled and genial weather should soon set in, a boon that may fairly be anticipated, the finishing of seeding may be performed under more favorable conditions, and crops, including fruit, prove abundant and remunerative. The prospect for grass, and consequently hay, will, under such circumstances, be more encouraging than for some time past; and the intimate connection between a good crop of hay and the economical management of stock during our protracted winters is a matter which every Canadian farmer perfectly understands.

We must not, however, altogether depend upon the produce of hay and straw for the carrying of cattle through winter; and therefore we again remind our readers at the risk of being charged with repetition, of the necessity of attending to the raising of roots; a branch of improved culture that forms a chief characteristic of modern agriculture. It is not now too late to sow carrots and parsnips, which may turn out as well as the earlier sown in such a season as the present, and mangel wurzel, as soon as the ground gets warm and dry, may be sown on all suitable and well prepared soils, with every prospect of remunerative returns. The long red on deep rich soils will generally be found to yield the heaviest weights; but on drier, and shallower land the yellow globe is to be preferred. Both require ample room both in and between the rows, and the frequent stirring of the ground in dry weather wonderfully conduces to the growth of all these kinds of crops. Mangels, if sown too early, are apt to run to seed, particularly if the land be rich and the season moist and warm; but they should be sown in this country as soon as the ground gets dry and warm, and all danger of night frosts, of much intensity, is over. Mangels, when properly stored, will keep fresh and good till the end of May, and

even later; and will be found excellent for sheep and all descriptions of cattle, particularly milch cows. In cold late springs especially, the farmer finds such an auxiliary in sustaining his domesticated animals of the highest importance.

The principal root, after all, is the Swedish turnip, the time for sowing which is near at hand; the end of the present, or the beginning of next month. If Swedes are sown too early, particularly on rich soils, and the season should prove warm and showery, the plants will, in all probability, become affected by mildew, and its feeding properties consequently very much deteriorated. The purple top yields, perhaps, the heaviest crop of the several varieties under cultivation, but Laing's Improved, from its peculiar growth and qualities, is the one most suited for table use. Sowing in drills is almost universally to be recommended, but the exact distances either in or between the rows depend in some degree on the nature of the soil, as regards texture and fertility, the variety of turnips selected, and must be left to a certain extent to the judgment of the cultivator. On good, well prepared soil the distance between the rows may vary from twenty to thirty inches; and under proper management in favourable seasons, a crop may be obtained of from six to upwards of eight hundred bushels per acre. No farmer, however small his holding, ought to be without this invaluable root. It is one of the most satisfactory signs of the improving condition of Canadian farming, that the cultivation of turnips, mangels, carrots, &c., is annually increasing.

The Provincial Exhibition.

In another part of this issue will be found a circular from John Barwick, Esq., President of the Agricultural Association of Upper Canada, calling the attention of farmers and all others interested to the importance of making timely preparation for a participation in the great Annual Exhibition of our Provincial wealth and industry, this year to take place at London. The Board of Agriculture held a meeting at that city in the beginning of April, and also attended a meeting of the local Committee there; when, notwithstanding there have been rather formidable difficulties to encounter, in regard to the local preparations, there appeared full reason to be assured that ample and satisfactory accommodation would be prepared; and that the intelligent and energetic farmers and business men of that fertile and prosperous district would by no means suffer even a partial failure to take place in their part of the programme. We have, therefore, every reason to believe that the exhibition at London this year will sustain the high position which the Annual Provincial Exhibition of Upper Canada has earned for itself amongst displays of a similar character. Farmers, breeders, manufacturers, and others who design exhibiting, cannot begin too soon to keep their preparations in view, if they would secure the greatest perfections, in form or quality, and most perfect condition attainable, in the different animals or articles detailed for show. The Prize List will appear early in June. In the meantime, those who design exhibiting may take the lists of former years as a guide, as prizes will be offered for the same articles, and the aggregate amount will be larger than that of any former years, except last year only, when the amount was considerably increased on the special occasion of the visit of the Prince of Wales.

Provincial Exhibition of 1861.

CIRCULAR FROM THE PRESIDENT OF THE AGRICULTURAL ASSOCIATION.

To the Agriculturists, Horticulturists, Manufacturers, Mechanics, &c., of Canada West:

The Board of Agriculture for Canada West lately met in the City of London, with the view of conferring with the Local Committee organized for the purpose of making preparations for the Provincial Exhibition to be held in London on the 24th, 25th, 26th, 27th September next.

The Local Authorities have procured very advantageously situated ground, to the extent of twenty-seven acres, for the use of the Association, (the same as that occupied in 1854), and are making active exertions to erect permanent buildings, stabling and sheds. Exhibitors may rely that ample and proper accommodation will be provided, and I trust that there may, as on former occasions, be a spirited competition from all parts of the Province.

The prize list will be published early in June, and will call for competition in the same class-

s in the past years, with some additions. The mount to be awarded will be about 12,00^ ollars.

Arrangements have been made with the reat Western, the Grand Trunk, and other estern railways, and also with the proprietors f the lake steamboats, to carry passengers, tock, and articles to and from the Exhibition t reduced fares.

The accommodation for visitors in London ill be ample, and the hotel charges moderate.

JOHN BARWICK,

President Prov. Agricultural Association.

Woodstock, 30th April, 1861.

Shipment of Stock for Canada.

EDITOR OF THE CANADIAN AGRICULTURIST.

On Thursday, the 11th inst., the *Helen Doulas*, of Annan, sailed from the port of Annan th a full cargo of general farm stock for merica. In every respect the whole of the imals are, from the continued improvement of he breed, much superior in quality to any pre- ously shipped from this country. The various gricultural Societies' shows held throughout e kingdom have done much to enlarge the ews of our noted breeders; and it may now be ted, with at least some degree of confidence, t the different kinds of stock in this country e rapidly approaching to a state of perfection. ny of the enterprising farmers and breeders this county (Dumfriesshire) have already ained a world-wide reputation for their horses, tle, and sheep; and their names, under the spective classes of animals, appear as emin- ly successful competitors, not only at all the eat and important shows of stock in this untry and in England, but also throughout continent, and in America.

Having had an opportunity of ascertaining om whom Mr. Simon Beattie, of Markham, anada West, purchased a portion of his stock, may be interesting to some of your agricul- al friends to learn that amongst his lot he a two-year old Durham heifer and a bull-calf om the far-famed herd of Mr. Syme, of Red- s, in this country. The heifer is a very su- ior and well-bred animal, and the bull-calf is of one of Mr. Syme's favourite cows, and is sidered by him to be one of the very best er sent from his herd. Mr. Syme's name, as breeder of Shorthorns, is not better nor more tensively known in this country than it is oughout Canada. He has sent out many e from his stock that have obtained numer- prizes there; and in this country he has held high ground among agriculturists the excellency and purity of his breed. The animal specially worthy of notice is a two- old heifer from the no less famous Gallo- herd of Mr. Beattie, of Newbie House, near Annan. This animal gained a first prize as a yearling, at a public show, where there were exhibited some of the best Galloways in Dum- frieshire. Mr. Beattie, of Newbie House, is, and has been the exclusive proprietor of the well- known race of Galloway bulls distinguished by the name of "Mosstrooper," that have gained more premiums and medals than any other bulls in Great Britain, and have never been beaten— see the catalogues of the Royal Agricultural So- ciety's Shows of England, and of the Highland Agricultural Society's Exhibition of Scotland. Mr. Simon Beattie has also taken out an excel- lent Ayrshire cow from a noted dairy stock in the south of Scotland. The sheep have been selected with no less care, and include rams and gimmers from the flock of Mr. Walker, North Leech, Gloucestershire rams, shearling rams and gimmers from the well-known Leices- ter stocks of Messrs. Simpson, Sandys, and Barton, in Yorkshire, and of Mr. Beattie, New- bie. The rams have been purchased at a cost of not less than £15 each. Indeed, it may be stated under this class, that the animals are of the best blood in the world; and it may also be observed that the different breeds cannot ap- proach more closely towards excellence of form. The English breeders above named have long held and enjoyed a high reputation for their sheep, and no less famed is Mr. Beattie, of New- bie. The latter gentleman was, last year, the most successful competitor for Galloway cattle, and Leicester sheep, at the Highland Agricultu- ral Society's Show, held at Dumfries, which was open to the world. Too much praise can- not be bestowed on Mr. Simon Beattie, of Mark- ham, and on the other gentlemen who accom- panied him, for their perseverence and enterprise. No expense was spared by them; and on this account they were enabled to visit and select from the stocks of the most eminent breeders in Great Britain. It is to be hoped, therefore, that the animals taken out with them will tend to improve the breed in America, and will main- tain the high-won fame and reputation which the breeders of them have deservedly attained in this country.

CORRESPONDENT.

Annan, Scotland, April 20, 1861.

Judges and Competitors—The Provincial Exhibition.

EDITORS OF THE AGRICULTURIST:—The time is drawing near when the Judges will be ap- pointed for the Provincial Exhibition to be held in London in the fall. The appointment of judges is an important matter. They ought to be men that know their duty and that will hon- estly perform it. One of your correspondents, in the No. of *Agriculturist* of 15th October last, says:—"I cannot refrain from making some remarks when I am hearing daily the bitter and numberless complaints of exhibitors

at the late Provincial Show held at Hamilton of the unjust decisions of inexperienced and incompetent judges." He thinks the only persons fit for judges are exhibitors—and at the same breath he says, "The judges permit and almost court the presence and interference of parties who are themselves exhibitors." And to such an extent is this carried that he himself has witnessed exhibitors accompanying the judges in the classes in which they were more immediately interested, particularly in stock, through the whole of the examination. It appears to me that judges and exhibitors are tarred with the same stick, and all this knavery might have been prevented by having honest, intelligent, practical farmers at the head of our Agricultural Societies. In more than one of our County Societies, the directors seek no further than among themseves, and although many of them don't know how to grow a rotation of crops, without a blush they assume the office of a judge in any class of animals, from a horse to a hen, even to animals that they never saw before, and, without knowing anything of their merit, make their remarks of approval or disapproval. The symmetry of an animal is scarcely ever looked at, if they are big and fat it is all they care for; and there is no doubt if Barnum's woolly horse was shown among the Cotswolds he would get a prize or attract a recommendation. There is something very objectionable in the unfair manner in which sheep are shown; it is two months since shearing was begun in a neighboring county for the Provincial Show; all the shearing they get is a little taken off the top of the back; all round the sides, and below is never sheared; this is nothing but deception in order to increase their apparent bulk, and hide their deformities. They are fatted on grain and oil-cake from the 1st January till the last of December. Both sheep and cattle of that stamp are unfit for breeding; and I know of more instances than one where the owners, after keeping them for a season, have been obliged to dispose of them without any lineage.

A Farmer.

On Tile Draining.

Editors Agriculturist,—As the farmers in this section of the country are beginning to see the advantage of underdraining, perhaps you would be kind enough to inform us, through the *Agriculturist*, how Tiles are covered up in the ground, and whether straw or any other material is necessary?

So far as our knowledge extends there is not a tile laid in the ground east of Kingston.

Single underdrains have frequently been made in this locality, but stones have been the material altogether used for making the pipe; and in some instances small round stones have merely been thrown in to form the drain. But it has always considered necessary to throw straw or brush on the stones, before filling in the earth.

Yours, &c., Andrew Wilson.

Maitland, May 6th, 1861.

Where proper tools can be obtained the bottom of the drain can be cut of the exact width of the tile or pipe, which should be carefully put in on an even bottom, having a sufficient and uniform fall. In a heavy clay subsoil it is a good plan to cover the tile a few inches with brushwood straw or the lighter portions of the soil, which renders the earth contiguous to the drain more porous, and thus allows the water a quicker access to the drain. A few inches of gravel or small broken stones are excellent for this purpose, but in many situations such additions would materially increase the expense of the operation. In lighter soils it is advisable to cover the tiles with the stiffer portions of the earth that has been thrown out. If the soil is very light and porous, it is of importance to dig the drain deep enough, if practicable to reach a stiffer stratum of the subsoil, and to cover it with the stiffest earth that can be obtained to the depth of several inches. In loose running sands,—the most expensive and difficult of all soils to drain the greatest care should be exercised, or the work will speedily fail. Where a stiffer soil cannot be reached, which always ought to be done if possible,—say within five or six feet,—a board should be laid at the bottom of the drain, and the pipes carefully laid upon it, and a few inches of soft clay closely trod upon and at the sides of them. The pipes or tiles should be made to fit each other at their joinings as much as possible. Indeed for running sands there is no safety but in having the pipes fit into each other or connected by collars, and protecting the joints by clay. If such precautions are not taken the sand will be sure to find its way sooner or later into the pipe and effect a partial, or, as is generally the case, a complete obstruction to the exit of the water. An inverted sod, either in stiff or light lands is a good covering for the drain. But in the sandy soils referred to clay is an indispensable material.

Stones are a good material for constructing drains, when they can be readily procured and

the right kind. It requires care and experi-ce to use them properly. Drains filled ten or e've inches with broken stones or gravel have en found effectual in some soils; but this ethod is not generally to be commended either the ground of economy or efficiency. An cture or conduit is desirable, if not an indis-nsable requisition, allowing the water a more ady egress,and renders the work both more dur-le and efficient. Drains formed of gravel or oken stones not only act slowly but are very ble to become silted up in a sandy soil, and cially when the inclination is small.

The cheapest and best material where suitable one cannot be got on the spot is unquestion-ly tiles, particularly that form designated the pe, which to be of good quality must be made good well-worked clay, thoroughly burnt, that it will have a metallic ring, when struck. t in remote places, where farms are still in a ugh and unfinished condition, very much may done in the way of temporary draining, by king open ditches through the wettest places, filling in covered drains with old rails, brush od, &c. Such devices will be found service-for many years, and will meet the wants of mers on new lands, till they obtain the means carrying out a more permanent and complete stem of draining.

Ploughing Match in Clarke.

Editor of Agriculturist.—I have been di-ted by the Board of Directors to send you notice, thinking that it may prove of some efit to our farmers. The Township of ke Agricultural Society held their Plough-Match last week, and awarded the following zes in their several classes :—

The Sweepstake, open to all classes of ploughs, rge Fountain.

1st Prize for Iron or Wooden Scotch plough, n,) John Gallbraith.

2nd do do do do do es Kenear.

1st Prize Canadian Plough, (men,) William rnett.

2nd do do do " do t.

1st Prize, Any Plough but Iron, (boys under years,) John Davie.

2nd Prize, do do do " hard Brown, Jr.

One of the most important features in con-ion with this Match was an *Extra Class*, a prize awarded to the ploughs of any make—of lightest draft ; they were to turn a furrow of nine inches wide, and six inches deep. There are few farmers but what have an opinion of their own respecting the various qualifications of ploughs ; but few, if we except the owners, were prepared to see the great differences existing in the draught of the various ploughs entered. It has opened the eyes of this community—and it should every other quarter—at all events to a class of ploughs which has been condemned by many, and yet who never tried them, as being more unwieldy and cumbersome, in fact *Horse Killers*, as they are frequently called. They appreciate them for their work, and yet condemn them for being too heavy. I refer to, the Iron Plough, which when of a proper kind, and a man between the stilts who understands them, cannot, for work, be beaten by any other plough.

I give you the draught and kind of plough as under :—

No. 1. Iron Plough, imported, Barrow Mould Board, 375lbs.

No. 2. Wood Plough, made in this Township, Gray's Mould Board, 400lbs.

No. 3. Iron Plough, imported, Gray's Mould Board, 425lbs.

No. 4. Wood Plough, Canadian, Holten pattern 450lbs

No. 5. Wood Plough, Canadian, Scotch Canadian, 475lbs.

No. 6. Wood Plough, Canadian, Scotch Canadian 500lbs.

No. 7. Wood Plough, Canadian, Markham, 575lbs.

No. 8. Wood Plough, Canadian, Markham, 600lbs.

These were tested by a competent Committee, and a Dynamometer.

There was a very large attendance of people, the day being well suited for the occasion, and the ploughing was done in first-rate style. After the plough-men got through with their work they, together with the judges and Directors were invited to partake of a capital dinner, provided by Joseph Rickaby, Esq., in whose field the Ploughing was performed. After partaking of the good cheer, the company separated, every one being satisfied with the day's proceedings.

Yours, &c., E. A. McNaughton.
Secretary.

Newcastle, May 8th, 1861.

The Royal Dublin Society's Spring Show.

The Spring Exhibition of this important Society was held as usual on its premises in Kildare Street, the beginning of April. The weather was unpropitious and the extensive improvements of the buildings and pens not thorough-

ly completed. Still the Show in point of numbers and quality was considered successful. The implement department was well filled, most of the English makers being represented. A new and capacious Hall has recently been erected and the society now possesses extensive and convenient premises for the purposes of the Show, as well as permanent offices, museum, etc., in the heart of the city. The live stock, on the whole, appears to have been large in quantity and excellent in quality. *The Irish Farmer's Gazette*, which ranks amongst the most influential and widely circulated agricultural journals of the United Kingdom, remarks:

From our spring shows, breeding animals have been sent to Australia and to America; and whilst English breeders of the highest eminence have drawn upon its sections for the far-famed excellence of their herds, some animals which have stood under the glass covered arches in Kildare street are to be found even as far north as "John O'Groat's House." It is the ready sale afforded for breeding stock which draws together such a number of superior animals as our spring shows exhibit in the Shorthorn sections, and not the intrinsic value of the prizes offered by the Society; and for this reason, therefore, we might as well expect Ballinasloe fair to change its site, as to think that the spring shows of the Royal Dublin Society should be held anywhere but in Kildare-street.

The plan of admitting the public from the moment when the judges commence operations, which was tried for the first time on Tuesday last, was found to give general satisfaction. There was a considerable number present even from an early hour, and as the best of the different sections were paraded, their several merits and demerits were closely criticised, and sometimes in a manner which told that public opinion did not go always with that of the judges. Of one thing, certainly, the public felt assured, that whatever might be the judges' decisions, those were never given hurriedly. They were most painstaking in all they did, and we dare say several who were present on Tuesday went away not only fully satisfied that the public lie under very great obligations to gentlemen who acted as judges on such occasions, but also that being a judge at such shows is not the easy matter many, perhaps, imagined it to be. At the same time, we do not see any necessity for quietly endorsing every decision which may be made by those gentlemen, simply because they have willed it to be so.

The Gazette furnishes four excellently executed wood cuts of Shorthorns' which obtained first premiums, medals and challenge cups. The Marquis of Waterford's bull, "*King of Hearts*," a two year old white heifer of Captain Bate county of Limerick, called "*Nightingale*," a yearling heifer, "*Florentine*," the property of Mr. Abbey, of Tralee; and a roan bull "*Sonbadar*," owned by Mr. Coppinger, of Ca ringtuohill. The latter was awarded not only the first prize in his section, but also the costly challenge cups of the *Irish Farmers' Gazette* and the *Irish Railway*.

The prizes were distributed in the evening by the Lord Lieutenant, who on a vote of thanks being passed spoke as follows:—

I feel very certain that those whom I have the pleasure to address do not need to be assured of the real interest which I feel in the exhibitions of this society, connected, as I conceive them to be, with the advancing progress of Irish agriculture (hear). I am only copying the example of the Prime Minister of England, and, I have no doubt anticipating the example of the Chancellor of the Exchequer, when he brings forward his approaching budget, when I make some allusion to the inclement character of the season through which we have recently passed (hear). True it is the spring, summer, autumn, and winter have conformed to the usual law and course of nature in the respective lengths of the nights and days; but hail, rain, frost, and storm have appeared to occupy a joint preponderance throughout the whole of those seasons (hear). Seldom, indeed, have these island shores been more strewn with wrecks, and we have had to lament the loss—outweighing unnumbered disasters—of brave human life (hear). But difficulties and drawbacks seem to be the appointed schooling through which improved agriculture as well as everything else that is sterling and valuable in our knowledge, is destined to struggle, to emerge, and to thrive, (hear, hear, and cheers). And I think it may justly be said that the show in your yards this afternoon has given good proof that even the weather of last year has not impaired the vigour, or the beauty, or the lusty proportions of the Irish stock (cheers). I think no one can have witnessed the exhibition of this day without feeling an increased confirmation of the conviction which we must have long entertained of the progressive character of Irish agriculture (hear, hear). The agricultural returns which are collected every year, while they show the material changes in various crops, as to the general condition of agriculture, uniformly exhibit a steady increase in the quantity of live stock. It is true that these returns, while they tell us of quantity, are necessarily silent with respect to the quality. It is to general observation and to advancing prices that we must look for information in that particularly; and such shows as those of Baker-street in London or in Kildare-street here, give the very best

ortunities for this purpose, taken in conjunction th the circulating visits of the agricultural so- eties through the various counties of the land. seems to me—and I wish we could have had ller testimony from those who could speak th authority on the subject—that the very ghest excellence marked the exhibition to-day roughout its various departments, from the rdly bull down to the less grand but far more nacious poultry (laughter and applause). is obvious that the increase of skill and the plication of science to agriculture must tend make us more and more independent of ather. The increase of agricultural mach- ry both enables us to save many crops, which accidents of a precarious climate would erwise only damage and destroy, and it fur- r enables us to improve our labourers in thods which call forth thought and develope ll. And there is no one circumstance con- ted with the whole subject more important d more gratifying than the certainty that the roduction of machinery, so far from injuring labouring classes, advances them in the le of society (hear, hear). To appeal to the st obvious test, the rate of their wages oughout this country already exhibits a very siderable increase. All the departments of iculture, you may depend upon it, hang to- her, and in improving the whole we improve y part of it, and also the condition of those o contribute to its respective branches. I e alluded, gentlemen, to the return of agri- ural statistics, the possession of which places country in a much more advantageous posi- , so far as that is concerned, than the sister ntries (and for them we are mainly indebted he wise foresight of my distinguished prede- sor, the Earl of Clarendon). But over and re the numbering of our oxen, our sheep, our es, and our swine, we are all about to un- go the process of being numbered—(a laugh) e diapason ended full in man." I believe agricultural returns contain particulars of the ctive ages of our yearlings and our two- olds: I understand that a scrupulous de- of accuracy will be directed to ascertaining ages of our ladies (a laugh). However, llemen, the census, when completed, will tell hat the exact number of our population is, also will enable us to infer with tolerable racy the extent of the emigration going on gst us. Now, I am not one of those who ider with any uneasiness the general results migration. Of course, when exile from e is occasioned by suffering and privation it be an object of regret to all well constitut- inds; but considered in its broad results, I re that while emigration fulfils the gener- stiny of our race, in peopling the whole , it ordinarily will be found to improve the ition of those who go and of those who re- (hear, hear). It is possible that the ap- hing census to which I have referred may exhibit some slight diminution of the population, but as the strength of an army does not depend so much on its mere numbers as on its discipline and its organization, so, depend on it, the good condition of a country results far less from its actual increase of numbers than from its command of the comforts of life, its industry, its intelligence, and its moral character. Well, gentlemen, I feel I am justified in heartily congratulating the friends and promoters of Irish agriculture generally, and the members of the Royal Dublin Society specially, upon the exhibition of this week. The members of this society bring together the principal results, the industry, and the art of this country into close and immediate proximity, thus symbolizing the real independence and connection which they have with each other (hear, hear). Already, as Mr. Foot has intimated to you, upon your ample lawn here, which has so long been devoted to agricultural displays, and where the live stock, the implements, and the husbandry of the country in all its branches have now met in friendly rivalry—already on one flank we see the fair length of the Museum of Natural History, and on the other flank there is approaching to its completion a corresponding building, destined to be a national gallery for painting and for sculpture. But I agree with Mr. Foot, that these last pursuits seem to require something placid and composed for their immediate framework. We have heard that there was a time when the flock strayed in the centre of the Roman forum, but that was before its pillared arcades became the centre of business and of worship. So I rejoice to know that it is sought to guard with additional sanctity the lawn of Leinster House, and there is a hope, to which I shall willingly give any efforts of my own to contribute—(loud cheers)—to provide a separate and still more convenient site for the general agricultural displays closely adjacent to the recently-constructed handsome covered hall (hear, hear). But whatever your own exertions, or whatever the help of the state may enable to be accomplished, you will still do well to remember that the real interests, and success, and glory of all such exhibitions consist in the intrinsic merits of what is exhibited; and I trust that all present on this occasion will often meet here to renew—I cannot venture to say to increase—the admiration which the exhibition of this week has now kindled (loud cheering).

Agriculture—Its Past, Present and Future.

Continued from page 271.

The Future of Agriculture—Steam.—It is impossible to overrate the enormous impetus given to every industrial, and, indeed, to every mental occupation, by the invention of steam power. Some of my views on this subject having been already laid before you in my paper

read last year, I will not recapitulate them. To withdraw steam power from us would be to plunge this country into ignorance, poverty, and disorganization. Agriculture is only on the threshhold of the use of steam power. She has never cheapened her products, nor supplied the wants of her customers. It is no exaggeration to expect that every farm of 100 acres will give employment to four horses of steam power. When this takes place, a large area of land used to feed horses will be set free for the production of human food. I also venture to predict that great commercial companies will be formed, who will purchase estates, parcel them out with topographical economy, and connect them with the towns and cities, whose sewage they will economise. We shall then see our agricultural engines gliding along a line of rails from farm to farm and city to city, drawing the produce to market—cultivating the farm. To see the powerful monster drawn by four horses along the common road is an insult to mechanical common sense, and, could the engine speak, would receive his indignant condemnation. When the locomotive was invented, somebody found means to expend £300,000,000 to make a suitable road for it, and somebody will, some day, do the same for steam in agriculture. The future of British agriculture may be said to rest upon the sufficient use of that cheap untiring power which has given such an enormous development to almost every branch of our national industry except agriculture. Steam, whether for cultivation or for the manipulations necessary in a well conducted homestead, for draining the swamps and irrigating the hills, and above all, for applying town sewage to our pastures, green crops, and root crops, will become the sheet anchor of British agriculture; and it is by this economy that the British farmer will be strengthened in his competition with other corn producing countries. That great man, Baron Liebig, has revealed to us the mysteries of our subsoil—that subsoil into which the British plough has never yet penetrated. His researches raise a doubt whether it is possible to manure the subsoil through the cultivated top soil; if so which I believe, how all important it must be to bring the manure, the air, and the subsoil into immediate contact and admixture with the surface soil. But, in any case, let us seek in our subsoil, by means of steam, that treasure which the old farmer told his son to dig for.

Public Companies for improving Agriculture.—Assuming and believing that great and comprehensive improvements in agriculture will originate with public companies, I prognosticate that a combined system of irrigation—town sewage irrigation—and railroad transit must form an important feature of any great district operation. The principles of drainage, steam cultivation, covered buildings, steam machinery, &c., so well understood by our agricultural engineers and surveyors, would naturally form a portion of every such improvement. "But," said a farming friend of mine, as we discussed the question of connecting farms and towns by rail, "how can you expect to do this? Mr. So-and-so would not listen to such a proposition, and his landlord would not like his farm altered and cut about." I reply there is no cure for prejudice like a public company and an Act of Parliament. At this very moment regardless of affections and prejudices in favour of old residences and old customs, our new Railway Companies are, by Acts of Parliament, levelling whole streets, and blocks of houses, overlapping, undermining, destroying and reconstructing, with hardheartedness yet unknown to British landholders, and British tenants. I hope the time is fast approaching when great associated companies of city merchants and rich agriculturists will expend enormous sums in the purchase and reconstruction of estates, making them subservient to the one grand object of an economical use of steam power for almost every farming operation, including sewage irrigation. We shall then not have the mortification to know that it is possible to carry coals at three farthings a ton per mile, at 20 miles per hour on a railway (farmed at enormous cost, and still paying Consols interest to its shareholders), while our farm produce on the common road costs 8d. per mile, and crawls along at a snail's pace. When estates and farmeries have been improved by public companies, farmers will be found willing to pay a double or a tripled rent, provided they see that such increased rent only represents a fair interest on the necessary improvements; and such estates, or portions of them, would readily find purchasers. We all know that farmers like to hold under public bodies (such as Charities, &c.), because their tenure is more secure, and they are more free from personal or political interference or caprice than when holding under a single individual. I have no doubt that Parliament will some day facilitate the registration and transference or exchange of lands, that public companies may be found to deal with land improvements. It seems odd that, while hundreds of millions of capital flow into almost every other channel British or foreign, agriculture has not been dealt with, except lately, on a limited but beneficial scale, by the "Land Drainage" and "Land Improvement" Companies. When I suggest public companies, I mean that they should act on a large scale and with immense resources that which it would be impossible for individuals to accomplish, and having made all necessary improvements, sell or let the various farms so improved.

Land Drainage.—It would be an insult to this Club to enter into details on this now well understood subject. Its influence on the quality and quantity of the food of the people,

over a large area enormous; but still non-ainage is the rule, and drainage the excep-n. In this respect there is a grand future for ricultural improvement. Land drainage was ectised in Essex and Suffolk one hundred and enty years ago, on hard chalky clays, and xed or friable soils, and no doubt greatly in-eased the produce and reputation of those unties as grain producers. Strange however, say, it is hard to make farmers believe that in tenacious (birdlime-like) collapsing clays, inage is of any use, and there is consequently enormous extent of such soils undrained in ex and elsewhere. It is easy to understand t this prejudice arose from the impossiblity using with advantage in such soils bushes or w, the only draining materials formerly in —these butter-like soils collapsing and stop-g such drains; but now that we have tileries making pipes or tubes, no such danger need apprehended, and I hope our friends will soon e up their prejudices, and so fill their pock-

Honourable mention should be made of names of Elkington, Smith of Deanston, iah Parkes, Bailey Denton, and Clutterbuck, connexion with the science of this art. Scot-d was seventy years behind Essex and Suffolk his matter of drainage, but then our Scotch nds did it in earnest, and have connected with eep cultivation and subsoil cultivation, and his, respect are in advance of English agricul-sts. Scotland owes to James Smith, of Dean-n, her drainage and deeper cultivation, and arly appreciation of town sewage. I had pleasure to know this useful man, and his s agreed with my own, that we were still on the threshold of agricultural perfection. *River Reform*, so ably discanted on by Mr. Algernon Clarke, will surely soon make its . In former times, when our daily bread ended on the action of our watermills, the was strained in favor of the miller, who may aid to have occasionally, and not unfrequent-sed the adjoining lands as reservoirs of water n the river to the ruin or injury of said s: but now that mighty steam has insured s, at all seasons, a comfortable loaf, a change king place, and the Judges have recently, most important issue, ruled that the unseen r in the land is the property of the land-er, and that even if sinking wells and using water should dry up a river by diverting terraneously its waters, no action would lie. n ditches, or rivulets leading to a riv , however, be still respected. This decision lead to most important results, enabling owners to dry or lower the level of the water eir soil, and use it for irrigation if desirable.

Tenant-Right and Leases.—The history of past shows that the former violent fluctations d as a bar to security of tenure by lease: no ord or tenant believed in an average of s. Without going into the question of Free Trade, our Tithe Commutation Act has afforded us something like an approximation of averages over a given period. Let us hope that the words "average 56s. per quarter for wheats" may give confidence in leases: it is certain that without leases no tenant will invest his capital in impr ments, unless secured a tenant-right for such investments. The Scotch 19 years' lease appears to ensure a good improving tenantry, and a large increase of rental at the end of the term. In Essex, a man without a lease may expend £20 an acre in drainage, chalking, and other improvement, and if he dies, and the farm be given up, not a shilling of it would come to his executors.

The Labour Question.—Labour is silently, but surely, slipping away from agriculture to the better food and higher pay of other industrial occupations. The parliamentary and excursion trains have provided a quick and cheap transit, and so have our coasting steamers. The new implemental requirements of agriculture, both British and foreign, have absorbed many a farm labourer: and the almost unobserved but regular trans-mission of the same class to distant colonies, by the Emigration Commissioners, also tells upon the farmer's labour store. This is well for the country, for necessity is the mother of invention; and agriculture may be more readily impelled by need than by persuasion to resort to that mighty power which has enriched our manufacturers. Experience has taught us that, as farm labourers come in contact with manufacturing towns or cities, they can only be retained on the farm by an increase of wages; our southern and non-manufacturing districts will not, therefore, long retain cheap labourers, especially now that the penny press makes them acquainted with the money advantages of an employment elsewhere.

The Labourer's Condition and Cottage.—The labourer being the most important tool in agriculture, it is desirable that he should be sharp and well polished as well as strong. This has not hitherto been sufficiently attended to, but it must very soon be. The schools now gradually erecting will enable the rising generation to read the instructions for cleansing, repairing, and managing the steam engines which agriculture must put up. They will also be able to read their Bible and their penny newspapers; probably hereafter they may be not thought unworthy of local libraries and literary institutions, also baths and washinghouses. The extension or abolition of the law of settlement will destroy the old selfish and unfeeling practice of foisting on your neighbour, in his old age or affliction, the man whose labours, in his youthful vigour, contributed to your wealth. The landlords are beginning to believe that the indecent propinquity of crowded bed-rooms, added to the evil sanitary results of insufficient house room, tell indirectly, but most unfavourably, on their pe-

cuniary interests. The profit from good labourers' cottages must always be, in some degree, indirect.

Meat making.—Future advances in agriculture will, I venture to predict, be based upon and identified with the production of a much larger acreable quantity of meat than we at present produce. The constant increasing prices of meat plainly testify that demand is exceeding supply, and that foreign nations cannot make up the deficiency. Our acreable area being limited by the ocean, the only means of doing this must be the extensive use of purchased food and manures, and by the economy of the sewage of our towns. The consequence of this improved system will be felt in our grain crops; for the more meat you produce, the more manure you make, and, consequently, the more corn per acre you will grow on the arable portion. This production of more meat will necessitate a better knowledge of the mode of producing it, having regard to a profitable result.

The future Character of Farm Residences and Farmeries.—It is notorious that if you are to have for your tenants men of capital and intelligence, their residences must be suitable to their intelligence and means. I know practically, and it is notorious, that on many of our large south country farms the residences are totally unfit for such a class of men; who, I believe, would willingly pay an increased rental for such necessary accommodation. The landlords of such farmers are therefore obliged to put up with men of inferior capital and intelligence. Surely a farmer of 700 acres, with a capital of £10,000, should not be lest favourably housed than a merchant or a trader.

"*Burn your clay into Brickdust,*" will be a motto with every heavy land farmer. I know one who for years has continued burning a clay hill. It provides him with healthy bedding for his stock, and with alkalies for his root crops. It permits him to consume his straw in food, instead of wasting it under foot. It renders his land friable and more economical to work; and it has thus largely increased his green crops and profits. This is also my experience in the matter.

With regard to our Homesteads and Farmeries.—The time will come when we shall see them like factories and railway stations, warmed in cold weather, lighted with gas; the manure well cared for, unwashed, and with its full powers preserved. These things are all necessary to the cheap and abundant production of meat and bread for the British people. It is of no use to cry out, Where is the capital to come from? It will be found as it has been found, when the requirements of the times and the increasing intelligence of landlords and farmers shall have given the subject due consideration. Let the system be introduced by those who are able and willing, and let it be found to be profitable, and the rising generation will grow up with its acceptance, free from the doubts and disbeliefs of their forefathers, who had not had practical evidence of its advantages.

In conclusion, it is a great mistake to suppose that farmers are naturally more prejudiced than other men. It must be remembered that it has been their misfortune, and not their fault, that the difficulty of intercourse prevented those examinations and comparisons which the railroad and literature of recent times have permitted them to make. That there exists a most creditable desire to avail of such opportunities has been abundantly proved by their overwhelming attendance at the great annual and other exhibitions of stock and machinery. My object in reading this paper has been, not to find fault but to stimulate. I know the difficulties of agriculture: I know that we cannot control the seasons; but we may, by improvements, so moderate their ill effects as to avoid those famine and sufferings which, in less favoured times, afflicted this happy country. For the future let agriculture assume more of the manufacturing character; and let the question be, not what it costs, but what it will pay, to effect agricultural improvement.

Effect of Grass on Colts.

When horses are turned out to grass in the spring of the year, the succulent nature of the food causes them to purge, often to a great extent; this is considered by many persons a most desirable event—a great misconception. The herbage is over charged with moisture and is of a crude, acrimonious nature, to such an extent that all cannot be taken up by the organs destined for the secretion of urine, or by the absorbent vessels of the body; the superfluous fluid therefore, passes off through the intestines with the indigestible particles of food, and thus the watery fæces are thrown off. Flatulent colic or grips is a frequent attendant. The system deranged; but the mischief does not terminate here. If the purging is continued a constitutional relaxation of the bowels is established very debilitating to the animal, and often difficult to control. I am so decidedly opposed to unrestricted allowance of luxuriant grass to horses at any age, that nothing could induce me to give it to them. After the second year, it should form a considerable portion of the daily food in summer, to every animal intended for hunting or riding.

If a horse is supported entirely upon the grass which he collects in a rich pasture field, or even on that which may be cut and carried to him in paddock, he must consume a much greater bulk than of hay in an equivalent time, to afford nourishment to the system—Grass being very full of sap and moisture, it is very readily digested, consequently the horse must be

nually eating it. This distends the stomach d bowels, and the faculty of digestion is im- ired, for the digestive powers require rest well as other organs of the body, if they to be preserved in perfect condition. By e custom of grazing, the muscular system is feebled, and fat is substituted. This may es- pe the notice of the superficial observers, who not mark the distinction between the ap- arance of a fat and muscular animal, who con- ive, so that the bones are covered, and the ints are rounded, all that is requisite has been ained But that is a very fallacious impres- n. Let any person who is skeptical on this int ride a horse in the summer who has just en taken from grass, along with another kept hay and corn, at the moderate rate of seven eight miles an hour; the grass-fed horse will eat profusely, while the other will be perfect- dry. This proves that the one eating grass erbounds with fat and those portions of the od which are destined to form that deposite. Those who will advocate grazing will no ubt exclaim, "Oh, this is a test of condition, ich is not required in young and growing ani- ls." I beg to state that it is highly important he scale of condition is to be attained by imals of mature age, that the growth and dual developement of their frames should be mposed of those healthy and vigorous ele- nts upon which the structure of future con- ion can be raised. Animal substances are, a very great extent, subservient to the nature quality of the food with which the individ s are nourished. I believe farmers would it much to their advantage if they were to sider the subject with reference to feeding le and sheep, so that they might select those ds of food which abound with properties e conducive to the production of flesh than There is no kind of food which the horse sumes which has not a tendency to deposit It is a substance which must exist to a tain extent; but as it is muscular power, not redisposition to adipose rotundity, which en- ces the value of the animal, the reasons are vious what guide should be taken in the se ion of food.

have on a former occasion hinted the pro- ty of bruising the oats, and I will now state reasons for so doing. The first I will men- is economy. Three bushels of oats which e undergone that process are equivalent to which have not, and the animals that con- e them derive greater benefit. Various emes are adopted to induce horses to masti- their corn, all of which are ineffectual. ttering them thinly over the surface of a ious manger, mixing a handful of cut straw each feed, and such like devices, will not le the animal to the performance of masti- on. A horse that is disposed to bolt his corn, ever careful it may be spread along his man- ger, will soon learn to drive it into a heap with with his nose, and collect as much with his lips as he thinks fit before he begins to masticate.— Whatever food enters the stomach of any ani- mal, and passes away in an indigested form, may be considered as so much dross or extraneous maatter, which, not having afforded nutriment, is prejudical to the creature which consumed it. A mistaken notion of economy is often the in- centive to turning horses out in summer, to be entirely dependent upon grass for their support. A few remarks will surely dispel that error. Twenty two bushels of oats—allowing one bush- el per week from the 15th of May to the 16th of October—may be taken as the produce of half an acre of land, and half a ton of hay that of another half acre, although a ton and a half per acre is not more than an average crop. It requires at least an acre of grass land to support a horse during the period above named.—*Mark Lane Express.*

The Yellow Lupin—A New Fodder.

Every one knows the yellow lupin as a garden flower. It is possible that many may not know its uses as an agricultural plant. The Germans and French farmers are loud in its praises. It will grow in almost any soil, and the poorer the soil, seemingly, the better the crop. It requires deep ploughing, but no manure. If the subsoil is thrown to the top of the furrow, it is no mat- ter. The roots plunge themselves deep into the earth; the plant grows and may be used as green food for sheep, and the seeds after they have ripened, may be used in cases where bran or pollard is given. This is not a crop for rich, but for poor lands, which will grow nothing else. It grows well on dunes and sandy soils, accord- ing to the reports. On the waste lands of Pom- erania pines have been planted for many years, with the expectation of profit. No one buys the pines, and the proprietors, driven to their wits' end to make the soil profitable, in a happy hour were made acquainted with the yellow lupin. In Prussia the cultivation of the yellow lupin, according to the account of Victor Borie, has brought abundance and joy into regions where formerly there reigned only misery. "Thanks to this modest and generous plant, bad lands had become good, deserts have been popu- lated, and the wretched proprietors of sandy, barren soils, who fancied themselves abandoned by man and God, have been obliged to confess that their cruellest enemy is ignorance." The yellow lupin is the *Lupinus luteus* of Linnæus. Its external character must be known to almost every one. It answers all the purposes of green fodder for cattle and horses, and yields a useful crop of seeds besides. For the green crop, the Prussian and French sow in June; for the grain or legumes, in May. The soil must be

ploughed deep; the grains are scattered, much as for a bean crop; a harrow passed over the field and the tillage is accomplished. An English farmer should try the experiment on lands just reclaimed, or on lands upon which he has in vain endeavoured to grow an ear of wheat or a homely potato. The account we have been reading says:—The lupin grows anywhere in bad as well as in good soils: but it always seems to agree best in sand, and in soils which are of little worth, and where the subsoil is, for agricultural purposes useless." Experience seems to show that it is be ter to allow the crop to ripen. On this point we have no practical knowledge. When the lupins are dry, the sheep eat all—stems, seeds, and husks. Four or five quarts of grain are given with a feed of oats to a horse; for cows, three or four quarts of grain steeped, or sufficiently bruised. A Prussian declares that if he had to choose between lupins and potatoes as a productive crop on the barren soil of Prussia, he would be at a loss which to choose. The lupins are worthy of an experiment. The Germans say, "Work for the butcher and you will find the baker at your doors." The French say, "More the hay more the bread." The lupins are excellent fodder; fodder makes the beasts; beasts make manure; manure grows corn.

[The above is copied from *The Field*, and the *Irish Farmers' Gazette* remarks that the Lupin is a very suitable plant for ploughing under as a green manure. It would be well worth trying on our poor sandy and worn out lands for this purpose.—Ed. C. A.

New Zealand.

[Captain H. D. Twohy, for many years connected with the Royal Mail line of steamers on Lake Ontario, left this Province last summer for New Zealand. As he was widely known and as highly respected, we think the following copious extract from a letter of his, addressed to the Rev. S. Givens, Yorkville, and published in the *Leader* newspaper a few days since, will be interesting to many of our readers. Ed'r.]

"I must now give you some account of our journey, or rather voyage. We left Quebec on July 7th, had a narrow escape in the straits of Belleisle from shipwreck, and arrived in Liverpool on the 19th. We were disappointed in getting a ship for New Zealand direct; but God was kind to us in throwing us in the way of a ship of 1,300 tons, bound for Melbourne, the Captain of which, who, if not all we could wish, was perhaps better than most ship-masters of his class; his kindness and consideration greatly relieved the tedium of a passage of 99 days. We had only ten passengers in the ship, which was a piece of good fortune not to be obtained in every ship, they mostly carrying from 500 to 600 souls. We had no bad weather, sickness or casualty of any kind; our health was greatly improved by the voyage when we arrived at Melbourne; our baby doing the best of all. The country of Victoria, from the harbor, is very prepossessing. Some people from Ireland shed tears on seeing their future home;—a dull, sombre foliage, interspersed with sand hills, but the city is a wonder of progress; the main street seems about 20 feet wider than those of Toronto, and I saw more stone sidewalks than all the towns in Upper Canada could show collectively. One Bank, in the Corinthian style, surpasses every thing I had seen in America. A Methodist meeting-house, in the Gothic style, excels every church in Toronto, with the exception of St. James's. Every thing appeared more finished and complete than in American cities. At the wharf were 20 ships, varying from 1,000 to 2,000 tons, discharging at the railway that leads to the city, three miles off. Every thing appears solid, substantial and costly; but cease to wonder when we read they export £60,000,000, in gold in the previous six years. We found every thing cheap but boat-hire; every thing as cheap as in Liverpool. We transhipped to the Mermaid, 800 tons, and after a passage of thirteen days, arrived in Auckland, New Zealand. The appearance of every thing here is in great contrast to Victoria and Melbourne; the country is delightful to look at for those who love the picturesque.

A noble harbor, sentineled by mountains rising out of the sea, ranges east and west; on the south side of which the town is built over the hills and ravines like Port Hope.

Up through the centre ravine passes Queen (the main) street, having all the appearance of Toronto thirty years since; very few brick houses, the stores small, mean in appearance, scanty in stock, no pretensions to wealth; the finest stores called the Canadian Block, are 2 two-storied houses, with plate glass windows, built by an Irish from Montreal. Auctions in the streets almost every day, no side-walks, no gas, no cabs, no police, no direct taxes, very little crime; every one complaining of the dull times and looking for the arrival of more troops to put down the Maoris war; with a good commissariat expenditure, electioneering going on, the one abusing the ins, with all sorts of plans for *making every one rich; embryo rail* schemes for a white population estimated this year at 72,000 souls, scattered over islands extending eight or nine hundred miles. From the top of Mount Eden, an extinct volcano, 500 feet high, about a mile from the town, you get a fine view of the country, and can count about eight extinct volcanoes within as many miles. Having no forests to clear, the country looks deli

ful, but the gathering of stones has been quite a labour to them in the neighborhood of the mountain. There are more good stone fences in the neighborhood of Auckland than in all Upper Canada. The roads for eight miles out of town are equal to the road between Napanee and Kingston; the scoria ash, obtained from the mountains, makes excellent metal, ready broken, and resembles blacksmiths' cinders. When you get away from the stone fences, in many places fast covering up with ivy, both native and European, you find hawthorn hedges, in some places ten feet high, interspersed with the multiflowering rose; this with the furze or gorse is the prevailing hedge or fence; posts and rails are exceptions. The road-side was so filled with clover, and *sain foin* (a grass very plentiful here) in a walk I took of eight miles, that 1,000 cattle might have been pastured on it, and well fed too. In fact the country is such that every Englishman feels at home here; the roads are so smooth and the scenery so charming that you meet numbers of ladies on horseback—the pleasure of riding being enhanced by having no tolls to pay. No gates are erected and the roads have been made from the public or general revenue. All the cattle have a sleek, healthy appearance. I have not seen a lean beast since I came here. Cattle raising seems a favorite employment; you may count hundreds of cattle during a walk, yet beef is 7d. per lb. and milk 5d. per quart; butter is. 3d. per lb. For money merchandize is very cheap. We have not drawn our land as yet; the best land is near the seat of war; but it will not do to go there. The natives are quite numerous in the town, but they belong to friendly tribes, and are dressed in all costumes, from the clerical gentleman with white neck-cloth and black coat to the lady with hat and feathers and hoops, down to the savage in his blanket or even gauntier attire. They are fast declining and must soon disappear from here; they have been spoiled and pampered by missionaries of all churches and by the government; but were they the noble race they have been reported they would not be walking the streets wrapped in a blanket, while 56,000 of them own 30,000,000 acres of this fine country. The great distance from Europe and America of this colony, coupled with the expense of getting here, has saved them from being swamped; but in less than 20 years they will be but a mere fraction of the population.

A number of people in Toronto desired me to tell them know what the character of the country was; what prospect it afforded to those who were desirous of leaving Canada to seek employment. Should you be asked you can say that those who come here at present must be prepared to bring their employment with them, in the shape of money enough to keep them on the land they draw, two years before they get a crop. From all I have observed it is a land of more flowers than fruit, more grass than grain, more herds than flocks. The land is not so fertile as in Canada, but the wants of life are fewer, and every one experiences the invigorating influence of the climate. I could wish that all faithful subjects of Her Majesty who cannot live in Canada would make this their home rather than go to the United States. Here they would be exempt from ague, noxious animals and the demoralizing influence of that land of liberty. I visited the bush for a short time one day; the sight was quite novel to me, who had been a good deal in tropical countries. The fern tree growing 20 feet high and then projecting its long feather-like branches at right angles, like the bones of an umbrella. The gickan, a palm-tree with branches, growing like the arches of a Gothic Church. The scarlet ralla, a tree as large as the largest oak, bearing scarlet flowers in profusion, with the kauri pine and the supple jack, were the most striking objects, whilst some of the smaller objects were no less beautiful. The most striking objects of the feathered creation were the ghes or parson birds, almost as large as a pigeon, with glistening raven plumage and two patches of white in the front of the neck, very active and imitating all sounds. All the water taken from the well in Auckland in localities exempt from social impurities has a very pleasant taste, and is verp soft for washing clothes.

Pine wood is very dear, 9s. per 40 cubic feet; coal £1 14s. per ton; bread 10d. the 4-lb. loaf; potatoes 1s. 7d. per bushel. We pay 10s. a week for a cottage of four rooms and kitchen; no taxes. The churches are in general all inferior to those in Toronto. We worship in a school-house that holds 450 people. The church is not yet built; it is to be called St. Matthew's. We heard Bishop Selwyn preach there. He officiates once a month, and sends a clergyman, Mr. Jones, to the country that day. Had we never heard the character of his Lordship, he gave us ample proof of the calibre of his mind in the continual flow of words, breathing zeal, power, humility and love with a look that at once commanded veneration and affection.

An Hour in a Pork Packing House.

Yesterday morning we spent an hour in the packing house of Messrs. Flint & Stearns, on South Clark street, near Twelfth. It is not generally understood to how great an extent the pork packing business has entered into the trade and capital of Chicago. There are several of these houses in this city and its environs, employing an immense capital.

This being the case, those who know nothing of the *modus operandi* by which one packing house can dispose of a thousand hogs in a day, will doubtless be pleased to accompany us in our savory visit.

Upon the outside of a large and substantial

brick building, the eye discovers a winding track, leading from the hog yard to the upper part of the building Up this inclined plane a stream of live hogs are lazily groping their way. Arriving at the top they enter the slaughter house—a pen ten or fifteen feet square. In this stands a man swinging with his muscular arms a ponderous sledge-hammer. At each blow a hog falls senseless. Two men armed with hog knives follow him and finish the work of butchery by severing the arteries of the neck. This done, the poor hog is slid through a trap door into a vat of scalding water, kept constantly at almost boiling heat by steam pipes passing through the bottom.

The hog is floated along to the opposite end of the tank, where a pair of tongs, (what else shall I call them) operated by a lever, picks him up and deposits him upon a table, upon each side of which is arranged a long row of men, (scrapers), who turn out the hog at the far end of the table in a state of nudity. There are not far from 25 of these scrapers, not one of whom is idle for a single moment. As soon as a hog emerges from the vat, the one that preceded him is passed to the next scraper, continuing his journey from one end to another as each successive porker follows after.

At the end of the table he is suspended upon a revolving crane. A pailfull of water vigorously applied, gives his carcase a sleek and cleanly appearance. Meanwhile he swings around in front of a savage looking man, armed with a terrible knife, sleeves rolled up to his shoulders, and besmeared with blood from head to foot. At one sweep of that knife the hog is opened and the inwards removed. Another pailful of water prepares the carcase for the cutting block. A truck, having projecting arms, is then trundled up to the crane, and by simply raising the hands, the person in charge receives the carcase upon the extreme end of the arms, and it is then easily transferred to the hooks, where it is left to cool.

This entire operation is so simple and yet so complete, that not a hand touches his porkship during the operation of being transferred. The hogs are usually allowed to cool off during the night, when they are taken to the cutting block, where two men with cleavers proceed to prepare them for salting down. Fourteen blows generally suffice for each hog, when the several parts are thrown into a hopper, and passed through the floor to the next story below, where the packers and salters put the pork in barrels, and the coopers finish the job by heading them up. After the pork has had time to settle and dry, the brine is poured in from a vat in which it is manufactured.

The packing season usually lasts about three months. Since the commencement of the present season, about the middle of November, Messrs. Flint & Stearns have killed and packed about 13,000 hogs. The average net weight of these have been 230 lbs., an increase of 100 lbs per head upon the average of last year.

About 75 men are employed in this establishment at from one to three dollars per day.—*Chicago Times*, Dec 1860.

The Eastern Prolific Corn.—The seed of the "Eastern Prolific Corn," a name which I gave it, originated, I believe, in Maine, and was first known to me about two years since, although some farmers in this vicinity claimed to have raised the same kind a number of years, and obtained much larger crops than I have been able to do, thus far. Last season I raised on Elm farm, Berkley, Mass., a little more than eighty bushels of good sound corn per acre. My corn land is what would be termed plain, level, and of a light, sandy loam. I plowed thoroughly ten or twelve inches deep with "Birch's Patent Iron Beam Plow," used five loads of rich compost, and twelve bushels of ashes per acre—the ashes being used at weeding time. Planted in hills about three and a half feet apart each way, in May, 16th and 18th, putting two cords of manure in the hill. I allowed five stalks to each hill, perhaps four would have done better, cultivated both ways, and hoed about the middle of last June, and subsequently a third time, without plowing. Cut and stacked the corn the first part of September, and allowed it to remain in the field for some five weeks. The value of the crop per acre was:

Corn	$83,58
Corn fodder and improvement of land	30,00—$113,58

The expense of cultivation was for

5 cords of manure on land	$40,00
12 bushels of ashes	2,00
Plowing, planting and hoeing	14,00
Harvesting	7,00
Interest on land, taxes and seed, about	7,00—$70,00
Net profit per acre	$43,58

Taunton, 1861. D. S. Dickerman.

—*New England Farmer.*

Artificial Guano.

A desire to obtain an artificial guano, equal to that of Peru, and at a moderate cost, has long been manifested. We take the following article from a recent number of the *Scientific American*. It is from the pen of Dr. G. J. Gesner, F. G. S., of Nova Scotia, who is well known for his scientific researches in chemistry and geology as applied to the agricultural resources of our Eastern Provinces. Mr. Bruce of Montreal, has manufactured a manure from the fish-offal of the Gulf of St. Lawrence, mi-

d with mineral matters, that is a very valuable nd powerful fertilizer. We hope to hear more f this soon.

Guano, so valuable a fertilizer, is chiefly com osed of the excrements of sea fowls. Fre uently it contains feathers, bones of fishes, hu us, &c. It is very variable in composition, a ircumstance that has been ascribed to the dif erent kinds of foods upon which the birds sub sted. Some guanos contain upwards of 25 er cent. of uric acid, in others that acid is al ost entirely absent, and it is the same in re ard to other acids, salts and alkalies. Am onia usually enters largely into the best quali ies of this fertilizer, and the presence of its car onate is known by its odor. The oxalate, rate and phosphate of ammonia and magnesia re almost always present with the phosphates f soda and lime, the phosphates having been erived from the bones of the fish upon which he birds fed. In the supply of ammonia and of rthy and alkaline salts, guano is of the great t value for plants cultivated for food. The ood of the birds from which the guano had een deposited has been certain fish that fed pon other fish, the food of which was marine lants, or animalcula. The origin of this ferti zer is therefore found in marine plants and ani als.

The writer has obtained a product analagous the true guano, and one nearly, if not quite, equal its value for fertilizing purposes. Chemical d mechanical means have been applied to the arine *fuci* and fishes and fish offal until an ar ficial guano has been obtained. The sources f the alkaline carbonate, chloride of sodium d organic matter have been found in marine lants, the phosphates and carbonates of lime d ammonia in the bones and flesh of fishes, d after many experiments carefully perform , they have been combined so as to form a eap and portable manure. At Long Island, the State of New York, *menhaden* are manu ctured into manure: the oil, which is very of nsive, being extracted from the fish and em loyed for common purposes.

Having visited a great number of the fishing tablishments of the Provinces of New Bruns ick, Nova Scotia, Newfoundland and the lands and coasts of the Gulf of St. Lawrence d Labrador, the writer obtained a knowledge the vast quantity of fish and flesh offal annu ly thrown into the sea, or otherwise lost to very useful purpose. The garbage thrown verboard yearly from vessels fishing on the anks of Newfoundland, if properly preserved d manufactured with the annual growth of sea eeds upon the shore, would fertilize the entire ltivated surface of the Eastern States and ritish Provinces; still the amount of animal atter thus referred to is far less than that pro ced by the inshore fisheries.

To the foregoing may be added the enormous quantities of mytili and other shellfish growing upon the shore, and which are not less applica ble for the manufacture of artificial guano, than the offal of the finny tribes. At many places on the shores, fish are met with in such abun dance that they are employed by the fishermen to manure the small patches of ground some of them cultivate. At the principal fishing sta tions, the refuse garbage and bones alone would supply a manufactory, and with good manage ment and the use of kelp, the offal may be trans ported from place to place without inconveni ence. Like the bones of terrestrial animals, the inorganic matter or ash of the bones of fishes consists in the greater part of the phosphates of lime, or bone phosphate, with carbonate of lime, the fertilizing properties of which are well un derstood. Few soils preserve their fertility for any length of time. Every crop removes from the earth certain elements, which it is the busi ness of the farmer to restore, and for that pur pose no manure is better adapted than guano, either natural or artificial.

Peruvian Guano.

In connection with the above the following article, from the *Irish Country Gentleman*, will be found interesting. Guano has for a few years past been used in Canada, on a small scale, by our more enterprising farmers, chiefly in the raising of root crops, with satisfactory results. Peruvian Guano comes very expensive; it is in fact a monopoly. The government of Peru fix the price of it, and farm it out to a great com pany, who charge from $40 to $50 a ton. This has occasioned great discontent, among British farmers especially. Guano should never be al lowed to come in contact with the seed, and is best applied mixed with dry soil. It requires moisture to bring it into action; hence its effects on vegetation in warm, showery weather are truly astonishing:—

"Peruvian guano is the most concentrated manure with which we are acquainted; and, under certain circumstances, it exceeds all other substances in its fertilizing influences. A ma nure is valuable in proportion to the amount which it contains of three substances—*ammonia, phosphate of lime.* and *alkaline salts* (com pounds of potash and soda with acids). The portions of these ingredients present in farm yard manure are shown in the following figures, and are the average results of several analyses made by ourselves:—

100 PARTS OF FARMYARD MANURE CONTAIN:—

Ammonia	0.450
Phosphate of lime	1.750
Alkaline salts	1.300

The great superiority of guano over farmyard manure will be seen from the following statement, which gives the average results of several hundred analysis of this substance, made by us during the last six years :—

100 PARTS OF PERUVIAN GUANO CONTAIN :—

Ammonia	16
Phosphate of lime	22
Alkaline salts	9

The use of guano, as a manure, was long known to the Peruvians, and so highly was the article valued, that the *Incas*, the ancient rulers of Peru, at one time attached the penalty of death to the offence of killing the 'manufacturers' of the article—the sea fowl that haunted the coast.

Sir Humphrey Davy was the first who suggested the employment of guano in British husbandry. This was in the year 1810; but the distinguished chemist's advice was not acted upon till thirty years afterwards. In 1840, a small quantity of the article was imported by Mr. Meyers, of Liverpool, which, on being applied as a fertilizer, produced such wonderful results that in the following year the large quantity which was imported was readily bought up, and ever since, the annual demand for guano in Britain has only been satisfied by the enormous supply of from 200,000 to 300,000 tons. The great demand for this curious substance induced enterprising merchants to explore other regions than Peru in search of a similar commodity, and with considerable success, as guano is now imported in large quantities from various countries. With scarcely an exception, the guano found in every locality, except on Chincha islands, the other places along the coast of Peru, contains but a small proportion of ammonia in relation to the amount of lime; and, as it is an established fact that certain crops requires more than others do, an abundant supply of phosphate of lime, it is very desirable that the farmer should know the composition of the various kinds of guano, in order that he may apply the most suitable kind to his crops, as the time for purchasing artificial manures is rapidly approaching."

The Culture of Tares.

EDITORS OF THE AGRICULTURIST.—As you invite those who have had any practical experience in the culture of tares to send you the result of it, I take great pleasure in communicating to you the following—considering the circumstances of the case—satisfactory trial of them.

Having for some time resolved to sow a small quantity of land with tares, as an experiment, I procured from Mr. Fleming, Toronto, a peck of seed, and, on the 16th May, I sowed it on a quarter of an acre. The land was ploughed, and well manured in the fall, and thoroughly cultivated in the spring. Shortly after they came into pod, I cut them, and found, when *cured*, there was *at least* three quarters of a ton. It made excellent fodder; in fact the horses, cattle, and sheep devoured it with avidity. Had the seed been sown at the proper season I am confident there would have been twice the quantity; but, as it was, before the tares had grown enough to cover and shade the ground, the weather came very dry, and scorched the land, so that, at one time, I thought they would prove a total failure—a few showers, however, settled that point. A SUBSCRIBER.

London, April 1861.

Agricultural Intelligence.

Spring Shows to take place.

Yonge Street Agricultural Society, at Richmondhill, May 23rd.

Niagara Electoral Division Society, at Niagara, June 27th.

Kingston Electoral Division Society, at Kingston, July 3rd.

On the Care of Live Stock.

The following paper was read by a young farmer, Mr. J. M. Joness, at a recent meeting of the West Durham Farmers' Club :—

MR. PRESIDENT AND GENTLEMEN,—The severity of the Canadian winter renders it not only expedient but necessary for all who intend raising stock to have good shelter as well as suitable food for them, and as the wheat crop has been a comparative failure in some parts of the country for the last few years, from the ravages of the midge, the importance of raising stock of all kinds is greatly increased. The question is, how can we winter our animals most profitably? We believe the farmer who takes the best care of his stock will eventually reap the greatest reward, at any rate we think the subject important, and have no doubt it will receive the attention of every intelligent farmer. There is one point upon which we all agree, which is, that all animals of whatever description should be kept in such condition that they will be constantly improving until they arrive at full maturity; and to accomplish this they must receive such treatment during the winter that they may be turned out in the spring in as good condition as when taken into the yard in the fall. To do this it is required to have warm, comfortable, and well ventilated stables, as well as the proper kind of food to nourish the animal and prevent the waste of the system. Yet there is a great di-

ersity of opinion as to the manner of sheltering tock. Some farmers, and I think the greater ajority, believe that stabling is preferable to ny other way, while others contend with equal nfidence, that the barn-yard, with suitable eds attached, is better than stabling. Their rgument is, that the animal will never remuner- te them for the expense of erecting buildings or their accommodation and the extra labor of eeding, while the former maintain that by keep- ng the animal in a warm stable less food is re- uired, as little is expended in keeping up the nimal heat. This I think is a good argument, nd I intend trying to show how this is the case. According to the science of physiology the heat f the body when in a state of rest, is the same n every part of the earth's surface at all sea- ons of the year. Blood heat in domestic ani- als is 100 Farenheit in the hottest day of sum- er, and should be kept up to the same point in he very cold weather, and according to one of ature's laws, when a hot substance is brought nto contact with a cold one, the heat imme- iately begins to leave the one and becomes ab- orbed by the other until they become of equal emperature; thus it is plain to be seen, that if n animal is surrounded by a very cold atmos- here, the animal heat will be given off, and un- es a fresh supply is provided the temperature f the animal becomes reduced to that of the tmosphere, and death would often be the result. ow suppose we enquire what this animal heat , and how it is produced. After food is taken to the stomach it undergoes many changes,—a art of it is converted into blood, portions of hich are carbon and hydrogen, which, when rought into contact with the oxygen of the air hich is brought into the lungs by breathing, nion takes place and heat is given out, just i the same manner as wood gives heat when rnt in a stove. Combustion is the same in oth cases, only that it is much more rapid in he case of the latter than in the former. This think will not only show what animal heat is, ut also that it is expended much faster in cold an in warm weather. If this be the case, then e necessity for having warm and comfortable tables for stock must be apparent to all; at all vents, we have concluded to furnish ours with a enial atmosphere, and save our fodder. Per- aps I have dwelt longer upon this part of the bject than was necessary; but we think it is ime the matter was understood, and some plan ther than an increased amount of food devi- ed to keep up the animal heat during our cold inters.

Much care should be taken with calves until hey become a year old. Be sure they have a lenty of such food as will give them bone and uscle from the time they are taken from their ms. Carrots or turnips may be used, give as uch hay as they will eat, and I think a little eal will be found very beneficial.

I do not think it advisable to tie up animals at this age, but let them have plenty of room in a well littered stable: if you are raising many—say six or eight—we would recommend dividing them into two or three lots instead of allowing them all to eat at the same manger. We would also provide them with water in the house, and only let them out when the weather is very fine. After they become a year old, they may be tied in the stall during the night, where they should be fed roots and hay, and be turned into the yard by day, where water should always be provided for them. This is often neglected, and the animals have often to walk a long way to water or go without, which they will often do in very rough weather. I think every farmer who studies his own interest as well as the comfort of his stock, will see the utility as well as the convenience of having water provided for them in the yard. A good animal is worth keeping well, a poor one is not worth keeping at all. When fattening cattle is practised during winter, (and it is becoming very prevalent among farmers since the growing of roots of every description has become so general) strict attention is necessary. The animal selected for that purpose should be full grown, and in good condition in the fall. Our custom is to tie them up as soon as the pastures fail and the rough weather commences: give them plenty of turnips and hay. To an animal which when fat would weigh from eight to nine hundred, give about a bushel at a feed, and three times a day, always keeping plenty of good hay before them. For the last six or eight weeks give them about four quarts of corn or pea meal extra. This seems to give them a fresh start, and we have invariably succeeded in making them first class beef at Easter. During all this time they should be kept as quiet as possible, never being disturbed except at the regular hours for feeding.

Sheep.—Stock sheep should have plenty of room in a house with a small yard attached, and I think should always have access to water, as the quantity of roots which it would be advisable to give them would not be sufficient to supply them with that article. Lambs and those that are fattening should have sufficient roots to prevent the necessity of having water, and should be fed a little grain every day, always keeping a good supply of hay or pea-straw in their crib. Roots, I think, should always be cut for sheep, as experience teaches us that they injure their teeth when fed to them whole. All kinds of roots should be housed as clean as possible; they will keep better and do more good: dirty roots always have a tendency to scour the animal fed on them. I fear that I am trespassing upon your time; but I cannot close without saying something about that noble animal, the Horse, the animal upon which the farmer in this part of the country depends more than all the domestic animals together; yet, strange to say, he is often

neglected, and sometimes allowed to suffer during our cold winters. But we hope the time is near when the horse, as well as all other animals, will be better cared for. If you wish to have your horses thrive and continue healthy, you cannot pay too much attention to their comfort. Their stables should be warm in winter and cool in summer; to secure these conditions they must be properly constructed, so that the outside air (except so much as is required for ventilation) may be excluded during the coldest weather. Warm blankets should be provided for working horses. Ventilation in stables constructed for horses is of much greater importance than in those for cattle. Colts should be taken great care of during their first winter. They should have a commodious house, well littered, but without a floor; as it is found that by standing upon a dry floor the hoof is subject to become brittle. We practise feeding them carrots and hay twice a day, and about three pints of grain once a day. Much care should be taken in feeding grain of any kind, as it is liable to contract the feet when fed in large quantities. Many a colt has been spoilt by being fed too much grain when young. Horses that have to work during winter should have grain twice a day, as well as roots and hay, and should be fed regularly at stated times, and in much larger quantities than in summer, especially in very cold weather. Carrots, I think, should be the roots fed to working horses, as they contain less of the fattening quality and more of that element which gives muscle than either the turnip or mangel. I refrain from saying anything more at present, and leave the subject with those better qualified to do it justice.

The Effects of High Feeding for Show.

[The *Mark Lane Express* thus notices the death of some famous Shorthorns from over feeding for purposes of exhibition. Let us take warning:]

"The Queen of Athelstane," the first prize yearling heifer at the Dumfries Meeting of the Highland Society, died during the past weeks when she was just two years old. This really beautiful heifer was bred by Mr. Douglass, of Athelstanford, and was by Sir James the Rose, out of Ringlet, by Frederick, her dam Pearly by Royal Buck. We had to speak of her in high terms in our report of the great northern meeting, where the Queen also attracted the notice of Lady Pigot, who subsequently brought her south at the price of five hundred guineas, and in whose possession the heifer died at Branches Park. She was said to be in calf to Lord of the Valley. The cause of her death was inflammation of the bowels, not the unfrequent end of over fed cattle, either from indigestion or on any exposure to cold. Her ladyship has only recently lost another promising heifer called Ethelgiva, from the same cause, out of Duchess of Gloucester the 2d, a prize cow at Canterbury; and Lucy, another of Lady Pigot's herd, bought at Wetherell's sale, for 150 guineas was killed, at Christmas, as butcher's beef. Her ladyship feeds high, and it was only during the past year that we had to notice her exhibiting a heifer in one week as a fat beast, and in the next as a breeding animal! Mr. Douglass also brings his stock out very full of flesh, and as a consequence his famous Venus de Medici has never qualified; while the sweet Maid of Athelstane, an own sister to the Queen of Athelstane, stood upon the extra stock at Dumfries from never having had a calf. What a commentary all this is on our remarks of last week, on Mr. Fawke's protest, and on Mr. Carr's letters. Of course the poor Queen of Athelstane was in training for the Leeds Meeting, or in other words being pampered up like a bilious alderman, or an over crammed turkey, who drops down with the last ball of barley meal in his throat "What really is the meaning of bringing an animal out properly for showing?" Would not killing be a better reading for such a state?

MAY FAIR AND MONTHLY MARKET.—Guelph May Fair has for many years had the character of being *par excellence* the busy day of the trading community of the town. The fair this year scarcely maintained the *prestige* it has acquired. The weather recently has been inclement, the season is late and the farmers are in arrear with their ploughing and sowing. Tuesday night was cold and boisterous and the morning of Wednesday—the Fair-day—showed the streets, and the hills in the neighborhood covered with snow, which melting as the sun went south, rendered the roads in the vicinity, previously sufficiently bad, almost impassible. There were nearly 200 cattle brought to town, however, comprising several fine lots of prime fat, which were speedily purchased by dealers from the South, at higher prices than were obtained at the April Market. Mr. Scott, of Ermosa obtained $4 per 100 lbs. live weight for four fat cattle, and another party sold two prime fat cows for $70 each, which it was calculated was equal to at least $4¼. There were fat cattle, however, sold as low as $3½, the average, as computed by the Secretary of the County Agricultural Society, being pretty nearly $4.

Milk cows were in request, and brought from $20 to $30. Fat stock was evidently in demand and more than were offered would readily have found purchasers at remunerative prices. It was rumored, perhaps on no sufficient authority, that purchases were made to furnish rations for the Federal troops. Should such be the case we shall doubtless soon learn that such unwonted 'feed' has put them in a condition to hurt somebody.—*Guelph Herald.*

Cost of Threshing.—A correspondent of the *Northwestern Farmer* claims that the cost of threshing by large eight horse power machines, causes to farmers a great less. His estimate, from a practical acquaintance with the work is as follows:

"We will admit that with a good Thresher, good stout horses, a full complement of men to handle grain and stack the straw, and with good weather and favorable wind, there can be threshed and *partially* separated, in a day *two hundred and fifty bushels of wheat.*

"The cost of this day's work I estimate as follows:

To the Thresher, [he furnishing machine, 4 horses and 3 men] 4c per bush.			$10.00
3 hands exclusive of above, 75c per day.			9.75
8 horses furnished by farmer,	50c	"	2.00
Board of 16 men,	30c	"	4.80
Grain for 8 horses,	25c	"	2.00
Cleaning 250 bush. through Fanning mill at 1½c. per bushel,			3.12
Total,			$31.67

Being a small fraction less than *twelve and a half cents per bushel*; leaving out of the account all contingencies, such as changing position of machine and horse power, breakages of machinery, rainy weather and adverse winds, which in a majority of instances would swell the cost very materially. It is evident, therefore, from the foregoing estimate, that there is a balance of just *five cents* per bushel in favor of the old mode, as compared with the modern improved, Eight Horse-Hower Threshers."—*Michigan Farmer.*

Horticultural.

Cobourg Horticultural Society.

We received some time since a Report, which unfortunately got mislaid, of this young and flourishing Society, whose operations have extended over only two years. The Directors say:

"It is with great pleasure we congratulate this Society on the continued success which has attended it during the second year of its existence; we would not attribute this success to our management, but to those spirited members, who, at great sacrifice of time and much personal exertion have by their example, stirred up that spirit of emulation which is the life-blood of all such Societies as ours, and without which failure would be the inevitable result.

* * * * * * * *

Our Fall show was remarkable in one particular, which we would here chronicle. *The Vegetable productions were astonishing.* Several of your directors had an opportunity of comparison by being present at the Provincial Fair at Hamilton and other local societies' Shows, and they certainly feel called on to say this much, that the display made by the Cobourg Horticultural Society, in this particular department was altogether the best they had been privileged to see, affording proof that our particular locality is peculiarly adapted for growing the *most profitable* garden products.

The number of members, each paying a dollar for the past year, was 88, and the financial condition of the society is good, the Treasurer having a small balance in his hands. We shall be glad to hear of the continued prosperity of this young and energetic society, and trust that Horticulture is destined to receive similar encouragement as Agriculture has long experienced in the old Newcastle District, and that the anticipation of the Directors will be fully realized "in obtaining a very large membership for 1861, especially as they see so many evidences that the dark days of Cobourg are with the past."

Culture of Annual Flower Seeds.

The soil for these should not be over rich, and should be dug deep; the surface should be rendered smooth and fine before sowing the seed; *small seeds sown on rough ground fall between the clods and into the crevices and get buried.* Attention to this simple hint will save growers much disappointment, and seedsmen a great amount of blame; for, in cases of failure, the quality of the seeds is almost invariably impeached. Hardy Annuals may be sown from the middle to the end of September for spring flowering; the plants ought to be thinned out before winter, to prevent their damping off, and transplanted early in the spring, to the flower border, or, when more convenient, may be sown where they are to bloom. Many of the Hardy Annuals, especially the Californian, flower more profusely, produce finer blossoms, and remain longer in perfection during the spring months than at any other season of the year. For summer and autumn flowering, sow from the middle of March to the middle of June. A common error in the cultivation of Annuals is in allowing them to grow too close together; and many, of what would otherwise be an attractive bed of Annual Flowers, are ruined for want of thinning. We therefore say, thin early, and sufficiently to afford ample space for the perfect development of the plants left. It is also very important to afford support to such kinds as require it before they get broken or injured by wind or heavy rain; perhaps the simplest way of doing this is to place among and around the plants small neat branches, like pea stakes; the lateral shoots will extend among and hide the stakes, and the

support afforded by this simple and inexpensive means will in most instances be found all that is required. But perhaps the common practice of *covering the seeds too heavily,* causes more disappointment than all other errors. Small seeds should be covered very lightly, and with soil not liable to cake by exposure to sun and air. *Common garden loam and leaf soil, or old dung,* passed through a fine sieve and well intermixed, will be excellent for covering with. Half Hardy Annuals should not be sown in the open border before May, and the ground will require the same preparation, &c., as recommended for Hardy Annuals. But the best method of raising these is to sow in pans, or boxes, in April, or on a bed, about three inches thick, of light soil, placed on a gentle hot-bed formed of stable manure or vegetable refuse, and protected with a frame or hand-glass. Water sparingly and give plenty of air when the plants appear, and thin out, or prick off in small pots, and be careful to get plants well inured to the weather previou to planting in the open border, and also to give water as may be necessary, after planting, till established.—*Hand Book of Annual Record.*

Improved Hollyhocks.

A taste for this fine old flower has of late been reviving both in Europe and America. *The Gardener's Monthly* says:—

"Radical shoots, taken off as cuttings in the spring, no doubt give the strongest spikes, but they may be easily propagated by single eyes in July and August. Plant eyes in March; the former month is best for early flowering, the latter for very late blooming. Never plant on new ground or in maiden earth, but choose a soil that has been well worked, and if well trenched, so much the better."

In Mourning.—The gardeners of Great Britain are mourning over the deaths of many of their most valuable productions, occasioned by the severe winter, and don't seem willing to be comforted. The horticultural journals are filled with obituary notices of the loss of many of the finest ornaments of the lawns and grounds, which the keen and unwonted temperature of five or six degrees below zero has converted from a delight for the eyes into only material for faggots.

The Poultry Yard.

Do you want Eggs in Winter?

Then give the manufacturers materials to make them with, and a comfortable place to work in. Let the egg-less say what they will, we speak what we know, when we assert that it is perfectly feasible to keep the hens laying all winter. Give them animal food to supply the place of insects they catch in summer, and let them have a warm place to run into, with plenty of unfrozen water, not snow, and a frequent taste of green food, such as cabbage leaves, potatoes, &c., and remember to supply some gravel for their grinding-mill, and lime to make shells out of, and we will warrant the animals to repay all the care and food, in the plump eggs—no matter what the particular breed may be. Try it.

A hen without some kind of meat and gravel and lime, compelled to eat snow for water or go without, cannot make eggs. If she has to keep constantly changing from standing on one foot to the other to keep both from freezing, she can't stop to think about getting up eggs. If all she eats and can digest, must be expended in keeping the heat of her body, she has nothing left to turn into eggs. If her body is all shrunk up with cold, she hasn't room inside for an egg of respectable size, and though her instincts may sometimes induce her to produce a thin shelled "pullet's egg" at the expense of the lime of her bones, her pride revolts at such a dwarfed production, and she seldom furnishes beyond two or three.

Give Madam hen the odd bits of fresh meat, and the other fixings named above, not forgetting the water, and make her quarters so free from cold air holes that she is *comfortable,* and she can't help giving attention to her natural occupation of manufacturing eggs, much to her own satisfaction and the profit of her owner.—*American Agriculturist.*

Treatment of Hens.—Two flocks of hens were compared. One laid eggs almost all the time; the other scarcely any. On examining their treatment, the following differences were found to exist: the former had a warm cellar to roost in during the winter; the latter roosted in a stable where the wind blew in. The former had a fine place on an open cellar for scratching among the ashes, lime, and earth; the latter scratched in the manure heap, or in the stable when the cows were put out. The former had plenty of good water, with milk, &c.; the other had no drink, except what they could find.—*Rural American.*

Veterinary.

Bots and Bot Insects.

[In Mayhew's *Illustrated Horse Doctor,* we find the following excellent description of the bots, and the uselessness of attempts to destroy them:]

No animal which has not been turned out to graze during the summer months can possibly be troubled with these parasites. Such annoy-

acces form no light argument against the benefits accomplished by that which is, in slang phrase, termed '*Dr. Green.*' The appearance of the coat, and aspect of unthriftiness, after a run at grass, generally declare bots to be present within the body.

Uninformed persons are always desirous to possess some medicine which will destroy bots; they wonder that science lacks invention sufficient to compound such an agent. An anecdote may probably dispel such astonishment.

A patron of the Royal Veterinary College was once conducted by a pupil through the museum belonging to that establishment; the pair at last stood before the preparation of a horse's stomach eaten through by, and also covered with, bots.

'God bless my soul!' exclaimed the visitor, after the nature of the specimen had been explained. 'What a spectacle! What a myriad of tormentors! And have you no medicine to remove such nuisances? Can veterinary science discover nothing capable of destroying those parasite?'

'Why, sir,' replied the student, 'only look at that preparation. To my knowledge, it has been put up in spirits of wine, and corked air tight for two years. The creatures must be either very dead or very drunk by this time; yet, as you witness, they hold on. What sort of physic could accomplish more than is already effected by the spirits of wine and close confinement? I am at a loss to conjecture!'

For the above, the author is indebted to the admirable lectures delivered by Professor Spooner; but the conclusion drawn by the student must be more than satisfactory. Bots, once within the stomach, must remain there till the following year; when being matured, their hold of the lining membrane of the viscus will relax, and, in the form of a chrysalis, they are ejected from the system. No medicine can expedite the tranformation. It has hitherto appeared easier to kill the horse than to remove the parasite.

To the invertigation of Bracy Clark, Esq., V.S., the public owe all their knowledge of the fly, whence the bot is derived. The common parent, according to the above authority, is the œstrus equi; and the author gladly avils himself of the original description by the above-named talented gentleman.

'ON THE ŒSTRUS EQUI, OR THE STOMACH BOT.'

'When the female has been impregnated, and the eggs sufficintly matured, she seeks among the horses a subject for her purpose, and approaching him on the wing, she carries her body nearly upright in the air, and her tail, which is lengthened for this purpose, curved inwards and upwards; in this way she approaches the part where she designs to deposit the egg; and suspending herself for a few seconds before it, suddenly darts upon it, and leaves the egg adhering to the hair; she hardly appears to settle, but merely touches the hair with the egg held out on the projecting point of the abdomen. The egg is made to adhere by means of a glutinous liquor secreted with it. She then leaves the horse at a small distance, and prepares a second egg, and poising herself before the part, deposits it in the same way. The liquor dries, and the egg becomes firmly glued to the hair: this is repeated by these flies till four or five hundred eggs are sometimes placed on one horse.

'The skin of the horse is usually thrown into a tremulous motion on the touch of this insect, which merely arises from the very great irritability of the skin and cutaneous muscles at this season of the year, occasioned by the heat and continual teazing of the flies, till at length these muscles appear to act involuntarily on the slightest touch of any body whatever.

'The inside of the knee is the part on which these flies are most fond of depositing their eggs, and next to this on the side and back part of the shoulder, and less frequently on the extremeends of the hairs of the mane. But it is a fact worthy of attention, that the fly does not place them promiscuously about the body, but constantly on those parts which are most liable to be licked by the tongue; and the *ova*, therefore, are always scrupulously placed within its reach.

'The eggs thus deposited I at first supposed were loosened from the hairs with the moisture of the tongue, aided by its roughness, and were conveyed to the stomach, where they were hatched: but on more minute search I do not find this to be the case, or at least only by accident; for when they have remained on the hairs four or five days, they become ripe, after which time the slightest application of warmth and moisture is sufficint to bring forth in an instant the latent *larva*. At this time, if the tongue of the horse touches the egg, its *operculum* is thrown open, and a small active worm is produced, which readily adheres to the moist surface of the tongue, and is from thence conveyed with the food to the stomach.

'At its first hatching it is, as we have observed, a small active worm, long in proportion to its thickness, but as its growth advances, it becomes proportionably thicker and broader, and beset with bristles.

'They are very frequent in horses that have been at grass, and are in general found adhering to the white insensible tissue or coat of the stomach.

'They usually hang in dense clusters to this white cuticular lining of the stomach, and maintain their hold by means of two dark brown hooks, between which a longitudinal slit or fissure is seen, which is the mouth of the larva. When removed from the stomach by the fingers by a sudden jerk, so as not to injure them, they will if fresh and healthy, attach themselves to any loose membrane, and even to the skin of the hand. For this purpose they sheath or draw back the hooks almost entirely within the skin, till the

two points come close to each other; they then present them to the membrane and keeping them parallel till it is pierced through, they expand them in a lateral direction, and afterwards, by bringing the points downwards towards themselves, they include a sufficient piece of the membrane, to remain firmly fixed for any length of time as at anchor, without requiring any further exertion.

'These bots, as is also the case with two or three other species, pass the autumn, winter and spring months in the stomach, and arrive about the commencement of the summer at their full growth, requiring a twelvemonth fully to complete their structure.'

Distemper in Horses.

Dr. Dadd in the *American Stock Journal* remarks of distemper in horses:

About this season of the year we may expect to hear of a number of horses being attacked with influenza, or distemper, in stables that are crowded with "sale horses," and where the principles of ventilation are entirely disregarded. The disease is very apt to extend from the mucus surfaces of the nostrils, to the throat and interior of the air cells of the lungs; usually, however, the throat is the seat of soreness and exudation; while in some cases which have lately occurred in this city, a very profuse discharge from both nostrils was observed, which ended in a critical outburst of an abscess between the angles of the lower jaw. In two cases that have lately come under my observation, the disease ended in pleurisy, and effusion of serum into the cavity of the chest, which was attended with dropsical swellings in the legs, and external parts of the chest.

When distemper occurs in the system of an animal debilitated by previous disease, or one of a morbid or scrofulous diathesis, a profuse and protracted nasal gleet remains, and this is accompanied by tumefaction of the thyroid glands in the region of the throat. The purulent discharge from the nostrils need not occasion any anxiety on the part of the owner of the horse or the medical attendant, for as it increases in quantity, the other observable symptoms of the malady grow milder; in fact the discharge may be considered an effort, on the part of nature, to rid the system of morbific matter, and any attempts by injudicious treatment, to arrest this salutary discharge may effect a translation of disease, which often ends in death. Death may, however, be occasioned by the re-absorption of the morbid nasal discharge; under such circumstances the nasal membrane takes on a livid look, and streaks or spots of extravasated blood are observed; the membranes of the eyes assume a dark red color, the pulse becomes indistinct; cold sweats bedew the body; the patient becomes emaciated, loses his appetite and soon after, his life. In a few solitary cases a partial recovery takes place—death refuses to receive a victim—the animal lives to be the subject of confirmed heaves or broken wind.

Treatment of Distemper.—The animal should be placed in a comfortable location, where he can breath pure air, and be free from annoyance of every kind; should the weather be chilly, the body may be lightly clothed, and the lower part of the limbs bandaged with flannel. It is very important that the surface of the body be kept warm, for when cold, the equilibrium of the circulation is disturbed; the blood then localizes itself about the internal organs, and produces congestion; a condition very unfavorable, in view of the speedy restoration of the sick creature.

It should be understood by every husbandman that this affection is of a prostrating nature, that the object in the treatment of the malady is to husband the animal powers—*keep the horse alive while the disease runs its course*—and preserve the tone of its system by administering tonics and diffusable stimulants; a few doses of golden seal and ginger, accompanied by a rationale allowance of scalded oats, small quantities of hay, and water enough, are generally all that is needed by way of treatment. And if this course be pursued the animal will recover, very little the worse for having had the distemper. A mild form of this disease is often made to assume a typhoid or putrid type simply from meddlesome medication and overdosing, with agents which depress the vital powers, by bleeding.

No matter what may be the stage in which we find the disease, the treatment must be life-sustaining; no kind of treatment which contemplates a depression of vitality is at all admissable—this is my experience after a practice of many years—the most intelligent and liberal-minded physicians of the present day depend more on *nature* than art, in the treatment of distemper.

Should swellings appear under the chest and limbs, the proposed plan of treatment is not to be materially altered, only add to the golden seal and ginger, a little iodide of Potass; this agent is a glandular stimulant, and augments the function of the absorbents which take up the fluid and thus reduce the swellings, which are of a dropsical character. The proportions of the above agents are as follows:

Golden Seal, powdered,		2 ounces.
Ginger,	"	1 ounce.
Iodide of Potass,	"	3 drachms.

mix, and divide into twelve parts, and give one night and morning in food or gruel.

It may happen that the animal is unable to swallow, in consequence of soreness of the throat, as the saying is; in such a case we merely apply some stimulating application to the region of the throat, and wait awhile; soon the soreness

gabines and the patient can then swallow all he needs and as much as nature requires.

The best stimulating application for the throat is

Cod Liver Oil,	4 ounces.
Tincture of Casicum,	1 ounce.

Another perhaps equaliy as good;

Olive Oil,	6 ounces,
Spirits of Hortshorn,	2 ounces.

A portion of either of the above preparations may be rubbed into the thyroid region twice daily. Under the above mode of treatment I have found that recovery is not only soon accomplished but perfect.

Cure of a Bone Spavin.

Levi J. Reynolds, in the *New England Farmer*, thus states how he effected a cure of a bone spavin:

I have a fine mare, which, three years ago, became very lame from a bone spavin on the inside of the left hind leg. After pretty hard driving for several days, she became so lame that she was unfit for use. The spavin was very tender, and she rested the foot constantly on the toe when she stood. I took her to the blacksmith and directed him to put on a shoe without any toe cork, and with blunt heel corks two inches long. She immediately travelled much better, and when she stood, rested the foot on the toe and heel corks, thus relieving the contracted cord of the strain to which it had been constantly subjected. In a short time the inflammation and tenderness subsided. The swelling abated. she travelled very well. She wore off the inside cork faster than the outside one, when she began to be lame again. I then had the shoe reset and the corks made of the same length, and she soon became well. After a few weeks I had the corks shortened a little, and the next time she was shod, a liitle more, but still have her wear heel corks an inch or more in length. There is a slight enlargement of the bone where the spavin is seated, but she performs hard service, and is not at all lame. Several of my neighbors have applied the same remedy, with equally good results, and I think that a little thought and observation will satisfy any one that this is the appropriate remedy. The cords attached to the part where the enlargement is seated, become inflamed and contracted, and raise up the heel from the ground. When the horse brings the heel to the ground the cords are strained, and became irritated and inflamed. The long corks keep the heel raised permanently, and thus prevent the cords from being strained, and allow the inflammation to get well. Some enlargement and a slight degree of stiffness may remain, but seldom enough to affect the gait.

Transactions.

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

(*Continued from page* 286.)

NORTH OXFORD.

County Society.—One hundred and twenty-seven members; amount of subscriptions, $130; balance from previous account, $149.25; deposited by township branches, $350.50; received for services of horse owned by Society, $234; government grant, $479.98; total receipts. $1343.73. Paid township branches, $659.89; paid on account of purchase and keep of stallions, $397.10; paid in premiums, $212; expenses and sundries, $61.46.

TOWNSHIP BRANCHES.

Bleinheim.—Two hundred and eighteen members; subscriptions, $234; balance from previous year, $288 84; public grant, $120. 37; sundries, $59 76; total receipts, $702. 97. Paid in premiums, $338.75; expenses, $42.79; balance in treasurer's hands, $321.43.

East Nissouri.—Twenty-nine members; subscriptions, $35; balance from 1858, $28. 52; government grant, 47 23; total, $110.75. Paid in premiums, $96.75; expenses, $13.25; balance in hand, 75c.

East Zorra.—Fifty-nine members; subscriptions, $64; balance from previous account, $5.25; special subscriptions and entries, $79.50; government grant, $50.15; received in payment of a note, $120; total received, $318.90. Paid in premiums, $94. 50; paid on notes, $173; expenses and sundries, $27.52; balance in hand, $14.88.

West Zorra.—One hundred and two members; subscriptions. $102.25; balance from preceding year, $68.52; public grant, $70; total received, $240.77. Paid in premiums, $128.50; expenses, $17.75; balance in treasurer's hands, $94.52.

SOUTH OXFORD.

County Society.—One hundred and forty eight members; subscriptions, $148; balance from 1858, $267.80; deposited by township branches, $206.50; government grant, $479.98; total received, $1102.28. Paid township branches, $474.48; paid premiums, $330; expenses, $96,25; balance in treasurer's hands, $201.05.

TOWNSHIP BRANCHES.

DEREHAM.—Fifty-one members; subscriptions, $53; public grant, $75.56: received on a note, $74.54; total received, $203.10. Paid in premiums, $171.75; expenses, $16. 13; balance in hand, $15.22.

NORWICH.—Ninety-six members; amount of subscription, $100.50; balance from previous year, $79 61; public grant, $137.43; sundries, $1.12; total, $318.66. Paid in premiums, $194.75; expenses, &c., $65.44; balance in treasurer's hands, $68.47.

EAST OXFORD.—Forty-two members; subscriptions, $48.50; balance from previous year, $102.45; government grant, $74.89; total received, $225.84. Paid in premiums, $98; expenses, $22; balance in treasurer's hands, $105.84.

PEEL.

COUNTY SOCIETY.—One hundred and thirty-three members; subscriptions, $182; balance from 1858, $56.35; deposited by township branches, $562.50; grants from municipal councils, $180; government grants, $599. 96; receipt at show and ploughing match, $194.81; total receipts, $1775.62. Paid township branches, $872.48; paid in premiums, $478.50; copies *Agriculturist*, $25; expenses, &c., $171.11; balance in treasurer's hands, $228.53.

TOWNSHIP BRANCHES.

ALBION.—Sixty-six members; subscription, $66; balance from 1858, $6.36; grant, $34.95; entries, $7; total, 114.31. Paid in premiums, $105; expenses, $13,85; balance due treasurer, $4.54.

CALEDON.—Thirty-two members; amount of subscriptions, $54 50; government grant, $28.28; balance from previous year, $21; receipts at show, $10 50; total, $114.28, Paid in premiums, $90; expenses, $21.56; balance in hand, $2.72.

CHINGUACOUSY.—Seventy-three members; amount of subscriptions. $87; government grant, $42.14; total received, $129.14. Paid in premiums, $98; paid balance due from 1858, $10; expenses, $16; balance in treasurer's hands, $4.86.

GORE OF TORONTO.—One hundred and thirty members; amount of subscriptions, $165; balance from previous year, $49.74; grant from township council, $28.50; government grant, $112.39; total, $355,63. Paid in premiums, $248; expenses, &c., $55,79; balance in hands of treasurer, $51.84.

TORONTO—One hundred and eighty members; subscription, $236.25; balance from 1858, $81.12; entries, ploughing match, $7; grant from township council, $80; government grant, $112.22; total received, $516.59. Paid in premiums at shows and ploughing match, $322; expenses, &c., $77.62; balance in treasurer's hands, $116.97.

PERTH.

COUNTY SOCIETY.—One hundred and eighteen members; subscriptions, $224 50; balance from 1858, $166 38; deposited by Townships Branches, $273; received for premium wheat sold, $51 84; donation from Canada Company, $40; grant from Stratford Town Council, $60; Government grant, $599. 96; total receipts, $1655 68. Paid Townships Branches, $745 05; paid in premiums, $410 38; expenses, &c., $245 58; balance in Treasurers's hands, $254 67.

TOWNSHIPS BRANCHES.

BLANSHARD.—Eighty seven members; amount of subscriptions, $147; received from County, $55; Government grant, $136 25; balance from previous year, $22 93; total received, $361 23. Paid in premiums, $219. 25; expenses, $78 35; balance in Treasurer's hands, $63 63.

FULLARTON, LOGAN AND HIBBERT.—Eighty members; amount of subscriptions, $122 75; Government grant, $138 67; County grant, $70 45; premium refunded, $30; sundries, $1 40; total received, $363 27. Paid balance due treasurer from previous year, $15 05; copies "Agriculturist," $12; paid premiums, $225 50; expenses, $117 25; balance due treasurer, $6 53.

WALLACE AND ELMA.—Thirty one members; amount of subscriptions and government grant, $80 00; balance from previous year, $40 45; total, $120 45. Paid in premiums and expenses, $106 75; balance in treasurer's hands, $13.70.

PETERBOROUGH.

COUNTY SOCIETY.—One hundred and three members; subscriptions, $109; balance from former account, $99 06; received from sale of seeds, $128 90; deposited by Townships branches, $264; Government grant, $479 98; receipts at show, $34 40; total $1115 34. Paid for clover seed, $122 50; paid Townships branches, $589 98; premiums, $355; expenses, $42 78; balance in Treasurer's hands, $5 08.

TOWNSHIP BRANCHES.

ASPHODEL AND BELMONT.—Twenty-five members; subscriptions, $26; government grant, $27 13; received for seeds, $53; sundries, $9 75; total received, $115 88. Paid for seeds, $61; premiums, $39 88; expenses $8; balance in hand, $7 00.

DUMMER AND DOURO.—Sixty members; subscriptions, $71; balance from previous year, $134 99; Government grant, $87 67; total received, $293 66. Paid for clover seed $132; ploughing match, $15; expenses, $21 92; balance in Treasurer's hands, $124 74.

OTONABEE.—Amount of subscriptions, $74 02; Government grant, $77 79; received for seeds sold, $17 61; receipts at show, $23 50; total $192 72. Paid Treasurer, balance due him from previous year, $56 16; copies "Agriculturist," $10; paid premiums, $89 87; expenses, &c., $34 40.

Extracts from Report.

In presenting their annual report on the state of agriculture, in the Township, the Directors beg leave to introduce a short history of its early settlement and progress:—

The first settlers arrived in the township about the year 1820. At that time it was an unbroken forest. The price charged by government for the land was £7 per hundred acres, but large tracts were granted to naval and military officers, who had been discharged from service a short time before, at the close of the Peninsular war. These located themselves along the front of the township on the north Shore of Rice Lake, attracted by the picturesque and beautiful scenery which there abounds. Had these men remained, the advantage to the settlement would have been very great, as most of them were in receipt of annual pensions from the British Government, and thus a large sum of money would have been brought into the township yearly; but the novelty of their position soon wore off. These men who had been accustomed to move in the aristocratic circles of Europe, and surrounded by the refinements of wealth and fashion, the isolated and laborious life of the Canadian pioneer became irksome and intolerable, and within five years from their first settlement, they had all abandoned their locations and sought homes and occupations more congenial to their tastes and habits. And as at that time the regulations in regard to absentees were such that the township derived no benefit from their land, the progress of the township was very much retarded by large tracts being left unoccupied; as the actual settlers were compelled to open roads through the lands of the absentees, and by improving their own property were at the same time increasing in equal ratio the value of the property of those individuals who had deserted them in their greatest need. In consequence of the township being situated so far inland, and having Rice Lake in front of it, great difficulty was experienced by the settlers in conveying themselves and their necessary stores, to their places of destination. Most of these had to be transported on the shoulders of the hardy Pioneers, from the shores of Lake Ontario, a distance of from 25 to 30 miles. But little inducement offered for clearing land, as the cost of taking produce to market would have been equal to the price obtained for it, nor were there any mills within reach to grind that required for home consumption. In view of these facts, it will not be wondered at that many were discouraged, and left the township during the first 3 or 4 years, and that only the most dauntless and energetic should persevere in the face of what appeared almost insurmountable difficulties, until the most adverse circumstances yielded to their indefatigable industry and unwavering purpose; and until they had succeeded, after long years of toil and hardship, in converting the frowning wilderness into pleasant and comfortable homes for themselves and posterity.

The Township of Ontonobee contains about 70,000 acres, and it is computed that fully one half of this is cleared and under cultivation. Along the front, and for some distance back from the lake the land was principally timbered with pine, the soil varying from a light to a heavy clay loam, well adapted to wheat, and most of the cultivated cereals, and roots. Where heavy clay loam prevails, the land generally requires draining, further back and in the middle of the township the timber was chiefly hardwood, and the soil a calcareous clay mixed with small limestones, the surface rolling, in some places thickly covered with boulders of lime and granite, from 100lbs. to a ton or over in weight, and adapted to all cultivated crops. Along the northern boundry the land is more broken; narrow swamps and ridges alternately prevail; the land here is not so well adapted to wheat, in consequence of the mucky nature of the soil.

Cleared farms are worth from $20 to $40 per acre, according to improvements, actual sales have been made in diff rent parts of the township, at from $16 to $40 per acre; the fences are generally of rails and are equal to any in the country. Some farmers have lately commenced to build stone fences, which, as far as tried, have proved efficient.

The original log buildings have nearly given place to frame and stone dwellings, frame barns, stables, sheds, &c., &c., mostly of a very superior description.

The leading product is Fall Wheat; on land properly cultivated, sown at the right season, and otherwise well cared for, the yield is 25 bushels per acre or over, in some cases 41 bushels have been raised; although much of it is inferior, from being sown on land in poor condition, and improperly cultivated, yet probably one half of all the wheat grown in the township, will reach the figure indicated above.

Peas are sown to a considerable extent, and the product is 25 to 30 bushels per acre.

Oats are grown chiefly for local consumption and produce, and produce about 30 bush. per acre, with the very best cultivation, and in favorable seasons, as high as 80 bushels per acre have been obtained.

Spring wheat is not much grown, the proportion not being over 1 to 5 of fall wheat; the average yield is about 10 bushels per acre, the climate and soil being much better adapted to fall than spring wheat.

Formerly turnips were grown very successfully on new land, but for several years past very little land has been cleared, and farmers have had to resort to old land for that purpose. Root crops are now very generally though not extensively cultivated; the quantity of land devoted to roots, exclusive of potatos, does not probably exceed 1 per cent. of the cleared land of the township. Turnips produce from 400 to 800 bushels per acre, Mangel wurzel about the same. Potatos about 200 bushels per acre.

The prevailing system of cultivating and cropping is: wheat after summer fallow,—then oats, followed by peas, which is sometimes succeeded by wheat, then seeded to grass, which is mowed one or two years, then pastured one or two more, and again summer fallowed for wheat, and so on again. The current wages for farm laborers, during the past year, has been from $10 to $12 per month with board. Carpenters $1 25 to $1 50 per day. Masons $1 50 per day, all with board.

In 1858 it was computed that the wheat crop was injured to the extent of 30 per cent. by the weevil or midge; in 1859, the damage to fall wheat was hardly perceptable. The Fife wheat also almost escaped uninjured, while Club wheat suffered to the extent of 10 per cent; fall wheat suffered considerably in some places, by the severe frost of June 4th; in a few cases the damage was estimated at 50 per cent; but the greater portion of the township escaped without injury; the lands on which its effects were most severely felt, were mucky soils, and very light sandy loams.

The hay crop of 1859 was a complete failure, the principle cause of which is ascribed to above mentioned frost, although it is believed that the ravages of the Grasshoppers the previous fall had an injurious effect on the plants by stripping off the leaves, and leaving the roots more exposed than usual.

Potatos were a full crop, and not affected with rot except in a few cases. Turnips were above an average, in several cases 800 bushels were obtained; Mangel Wurzel and Carrots were also good, but the quantity raised is insignificant. Several small parcels of the Hungarian Grass seed were sown last spring; on very rich garden soil, the produce was computed at 4 tons per acre; in one case ¾ of an acre was sown, in a piece of dry calcareous soil, of an average quality, without manure, with the view of testing its value for general culture, as a forage crop; the quantity of seed sown was 15lbs, time of sowing 1st of June, and the yield 1¾ tons per acre.

The season of 1859 has been regarded as very peculiar. Notwithstanding plowing commenced at least two weeks earlier than usual, yet vegetation was exceedingly late, and was again checked very early in Autumn; thus while the growing season has been shorter than usual, the working season has been much longer, the average plowing season may be regarded as commencing April 1st and continuing until Nov, 15th, or about 7½ months, while the past season, plowing commenced on the 18th of March, and continued until the 2nd of December, or about 8½ months.

But little care has been taken in improving the breed of cattle; a few importations have been made of the Durham and Devon breeds; the latter have not proved successful, as a cross with the natives. The Durhams have proved

perior to any other for feeding, and it is be-
ieved that a cross of the Durham and the
atives is best adapted to general purposes.

Horses are a mixture of breeds which it is
ardly possible to define, and require to be
mproved in size, being in general much too
mall for heavy plowing.

Several importations of Leicester sheep have
een made, which are now diffused throughout
he greater portion of the township; most of
he flocks having been partially crossed with
hem.

The breed of Pigs is very good, having
een first crossed with the Berkshires, and
ore lately improved by the introduction of a
rge white breed, said to be imported from
ngland.

Until very recently cattle-breeding was
onfined to the wants of the locality, but
r the last four years a considerable
mber have been bought up by drovers
om the United States, the price of 4
ear old steers being about twenty dollars.
bout 500 head of cattle, 500 sheep, and
000 pigs, have been taken out of the town-
ip during the past summer, in this way,
n the winter of 1858 and 1859, Thomas
hort, Esq. fed 150 head of cattle for the
ontreal and New-York markets; and he
d others are again engaged in the same
siness the present season. The result of
. Short's operations last year, chiefly in
nsequence of the scarcity and high price of
d towards the end of the season, was unsa-
factory; but it may be stated that his cat-
were fed wholly on hay and grain, while,
present year, straw has been substituted for
y, and roots in some measure for grain; and
perience thus far seems to indicate that this
rse is equally efficacious, as it is evidently
uch less expensive; although the system of
all feeding is evidently attended with more
oubl and risk, and may not yield so large a
ec profit as selling in a lean state, yet by the
ge quantity of manure it produces, it must
pidly improve the soil and ultimately result
the greatest profit.

Thorough drainage cannot be said to have
been commenced, although quite a number
re partially drained, some extensively, and
result has been very satisfactory.

It has already been remarked that roots
not extensively cultivated; but the quan-
y is increasing every year. One farmer
a field of fourteen acres last season, which
the largest quantity yet raised in the
nship.

The subsoil plow was introduced several years since, but the expectations regarding it were not realized. The past year two farmers have used the Michigan double mould-board plow, of which better results are anticipated.

A great improvement has taken place in agricultural implements, most of which are now manufactured in the township, at an extensive establishment erected by Thomas Short, Esq., M. P. P., and leased to John Moscripp, by whom it is well worked. The machines and implements made are of the best description. Pitt's 8 horse power thrashers are generally used. Plows are of almost every description. There are a few reaping and mowing machines, but most of the land requires improvement in the removal of stones and stumps before they can be generally and efficiently worked.

The greatest improvement required in farm management is, deeper plowing and some means of increasing the quantity of manure. Although it is not admitted that the township is inferior to others in general farm management, yet it is beyound a doubt that with thorough and deep tillage, the produce of the land might be increased 100 per cent.

SMITH.—One hundred and eight members; subscriptions, $108; balance from previous year, $5.81; government grant, $133,36; total, 247.17. Paid in premiums, $52; paid for clover seed, $65; paid for plaster, $70; expenses, $60.17.

PRESCOTT.

COUNTY SOCIETY.—Fifty members; am't of subscriptions, $50; balance from previous year, $9.60; deposited by township branches, $160; government grant, $374.40; total, $594. Paid for copies of *Agriculturist*, $13.25; paid township branches, $384.64; premiums, $163; expenses, $32,90; balance in hand, 21 cents.

TOWNSHIP BRANCHES.

CALEDONIA.—Forty members; amount of subscriptions, $40; balance from previous year, $2.50; government grant, $56.16; total, $98.66. Paid in premiums, $86; expenses, $12; balance, 66 cents.

HAWKESBURY.—Forty members; subscriptions, $152; government grunt, $112.32; total, 264.32. Paid County Society, $36; paid premiums, $184.62; expenses, $36; balance in hand, $7.70.

LONGUEUIL.—Fifteen members; amount of subscriptions, $15; balance from former acc't, $8.45; government grant, $56.15; total, $109. 60. Paid in premiums, $84.65; expenses, $21; balance in treasurer's hands, $3.95.

PRINCE EDWARD.

COUNTY SOCIETY.—Ninety-four members; subscriptions, $94; received proceeds of a note discounted, $93.40; deposited by township Societies, $239; government grant, $570; receipts at show, $40.26; total received, $1041.66. Paid balance due treasurer from previous year, $57.09; paid note, $100; copies *Agriculturist*, $36.80; paid township branches, $580.80; premiums, $158.30; expenses, $20.60; balance in hand, $88.07.

TOWNSHIP BRANCHES.

AMELIASBURGH.—Forty members; subscriptions, $40; balance from previous year, $8.09; government grant, 56.28; total received, $104.37. Paid in premiums, $90.48; expenses, $7.83; balance in treasurer's hands, $6 06.

HALLOWEL.—Forty two members; subscriptions, $42; balance from previous year, $6.68; government grant, $54.29; total, $102.79. Paid in prizes, $86.58; expenses, $12.75; balance, $3.64.

HILLIER.—Fifty-six members; subscriptions $56; government grant, $78.80; balance from previous year, $22.25; total received, $157 05. Paid in premiums, $115; expenses, $29.20; balance in treasurer's hands, $12.85.

MARYSBURGH.—Twenty-nine members; subscriptions, $63; government grant, $80.32; total, $143.32. Paid for clover and timothy seed, $138.60; incidental expenses, $4.72,

SOPHIASBURGH.—Forty-five members; amount of subscriptions, $48; balance from previous account, $35.72; government grant, $69.10; total received, $152,82. Paid in premiums, $131.40; expenses, $15; balance in treasurer's hands, $6.42.

Miscellaneous.

JAVA WHEAT.—"*Despise not the Day of small things.*—The introduction of this variety of wheat has added so much to the agricultural wealth of New England, that its history is worthy of record. Until within a few years the cultivation of spring wheat was scarcely practised in this vicinity. The weevil, rust, and other enemies of the wheat crop, were considered so sure and destructive, that few farmers could afford the experiment. So generally did this idea prevail that the State offered a bounty on the crop, in order to induce farmers to attempt the culture. By the returns made to the authorities in this town, I find that the largest crop raised on the choicest fields, was less than twenty bushels, while the average was but about fifteen—not enough, even with the state bounty, to encourage farmers to sow wheat largely. About twelve years since, a young lady while burning some Java coffee, found among it a grain of wheat. Struck with its fine plump appearance, she planted it in the garden. It came up and grew vigorously, maturing some half dozen heads, all well filled, with no appearance of weevil or rust. The product was sown in the garden the next season with the same favourable result. The third year, a portion was distributed among some friends, sown upon different soils, but in every instance yielded abundantly. From this small beginning, the "Java" rose rapidly in value and in the estimation of the community, until it has become a general crop with us, being considered not only more profitable than any of the grain crops, but more sure than even the corn crop. The yield the past year varied from 25 to 12 (or more) bushels per acre—worth for flouring purposes $1 50 per bushel, and a trifle more for seed. I have not heard of a failure with this variety within the two past years. For flouring it is said not to quite equal some of the winter varieties, nor the Scotch Fife. The services of the lady who was the means of its introduction, have not been acknowledged or rewarded by individuals or associations; but I think entitle her to at least a vote of thanks, and could she have one cent on every bushel of Java wheat raised in New England the past year, it would not be an undeserved though abundant reward.—*C. W. G., Holden, Mass., in Country Gent.*

GREAT DESTRUCTION OF RUSSIAN GRAIN BY LOCUSTS.—The following is from the circular of Messrs. Carr, Rostock:—The total shipments of wheat from Russia up to the end of September were 684,871 quarters, against 508,105 quarters in 1859. Taking into account the sad havoc done by the locusts in the whole of Southern Russia, Russian and Austrian Poland—the devastation being so enormous that in the Odessa districts alone some 400,000 or 500,000 quarters of wheat were destroyed—and considering that from the St. Petersburg, Riga, and Archangel districts, and from Poland the yield is not great, but the reverse, I think I may estimate Russia and Russian Poland's capabilities or exports for the next campaign at one million quarters. Having so often been written to and asked to give an idea of the devastation committed by the locusts, it may not be out of place, once for all, now to do so. In the distance a swarm of locusts look like a dark thunder-cloud, and as the

rosch a whistling sound is heard in the air, ilar to a violent thunder-storm; the sun, if ing at the time, is darkened, and the temper- becomes 5 or 10 deg. Reaumer cooler, as warmth of the sun is prevented from pene- ing the mass. The swarm takes from twelve fteen hours to pass over, and the enormous or quantity of this fearful scourge in the osphere, as far as the eye can reach, makes an overpowering impression on the human e that a person feels an inward depressing ing, such as difficult breathing, and inability hake off the horror-stricken nervous sensa- . Business is suspended. If these plagues once reached the ground, the earth is for ral miles in extent a foot deep at least with , and they do not ascend until they have n every particle of grain, pulse, grass, &c., the soil then looks as if it had been laid e by fire. These insects can only be got rid hen they are not tired and are able to fly y, when a great noise is made, and several sands of persons set to work together; in- it often happens that the Government s two or three regiments of soldiers to assist farmers; if, however, the swarms are tired so enormous that they cover the fields a foot or more, then it is not in the power of hu- beings to prevent their committing sad c, and when killed and left on the ground, hould a swarm be driven into the sea and wards washed ashore, the stench is past ing, and generally is followed by a pestilent e. According to a map drawn whilst the emor-General of Odessa made a tour of in- tion early last May, about 75 Russian square were covered with the eggs of these insects. e fields surrounding the small Polish town omaszow, no less than 625 baskets of living ts (each basket containing about 6,400, and gornats of 15,600 eggs each, making in all four million locusts and nine million eggs) delivered to the burgomaster of the place.

SINESS QUALITIES OF THE FARMER.—The ghtful farmer may find a hint of value in the wing, from Chas. Betts, in the *Ohio mer.*

If the farmer needs any two qualities more others, as business qualities, it is *forecast orce*—qualities which will enable him to forward into the coming years, and lay his , and then with a vigor which will over-ride stacles, push them into execution. In any ess where investments are made to-day and us reaped to-morrow, reliance is chiefly on ready capital, and the circumstances e hour. But the case with the farmer is ent. He must exercise forethought; his ations must run through the year, and on gh a series of years; and, to be successful, many collateral influences to weigh, and nsive operations a complication of influ- which require for their proper adjustment and direction, the highest skill, judgment and forethought. His success, like one of those mysterious and almost stranger planets, takes ever a varying course, and is sometimes lost to view. But if he is a true Le Verrier, he will count, and weigh, and demonstrate the bearing of all controlling causes, and, with master ability, usher in the grand result."

SHADE TREES IN PASTURE.—Upon the first subject you mention, viz: "should shade trees be allowed in pasture fields?" there may be, perhaps two opinions, but the one most generally held is against shade, unless it is in the immediate vicinity of water.

The most important object to be attained in grazing, next to good and plentiful grass, is that the cattle shall be free from any disturbance whatever, and that they shall take as little exercise as possible. In the first place, then if the shade trees are at any distance from the water, the cattle will collect under them, and in hot weather will often stand there until their drinking time arrives, and then run in a body to the water, where they will push and fight for the first drink, and then run back again to the shade. I have seen them do this often. Then again, one of the greatest enemies to fat cattle is the biting-fly, which loves the shade as well as the cattle, and when the latter are huddled together under the shade, they suffer a great deal more annoyance and worrying than they do in the open field. I have seen bullocks smart enough to leave the shade and stand in the sun all day, and they seemed to thrive better by it. If, however, a man has a stream running through his field, where the cattle can stand over their knees in water, let him by all means have abundant shade on the banks. His cattle can then stand, their legs protected, and whisk the water over their backs with their tails, and bid defiance to the flies.—*R. W. Downman in American Farmer.*

APPLES FOR STOCK.—All kinds of stock relish apples during the winter months, almost as much as do children. They will eat them with avidity, and in preference to any grain or roots fed them at the same time. An experiment of feeding stock with, say, half a peck to a horse or cow daily, will soon satisfy any person that they conduce both to the health and spirit of the animal.—*Ohio Farmer.*

SALT, OR LIME AND SALT, TO PREVENT GRAIN CROPS FROM LODGING.—In looking over our foreign exchanges we not unfrequently meet with passages like the following, from which we infer that the power of salt to strengthen the straw of grain crops, even when the growth has been rendered very luxuriant by guano or other nitrogenous manures, has been often tested, and is now *well established:* "When the crop is liable to lodge from a weakness in the straw, three cwt. of salt should be mixed with the

guano. Lime and salt will prove equally beneficial, but this dressing is more expensive, while the lime and salt require to be mixed for some weeks previous to application to the land."

EXCESSIVE CLEANLINESS.—Even cleanliness can be exaggerated, as in the case of the Pharisees, and the late Duke of Queensberry, who would wash in nothing but milk. Our own Queen uses distilled water only for her toilet; but this is not a case in point, since it is for the sake of health, I believe, with her. A sad case however, was that of the lovely princess Alexandrina of Bavaria, who died mad from over-cleanliness. It began by extreme scrupulousness. At dinner hour she would minutely examine her plate, and if she saw the slightest speck on it she would send for another. She would then turn the napkin round and round to examine every corner, and often rise from the table, because she thought she was not served properly in this respect. At last it became a monomania, till on plates, napkins, dishes, tablecloth, and everything else, she believed she saw nothing but dirt. It weighed on her mind, poor thing; she could not be clean enough, and it drove her to insanity.—*English Hand Book of Etiquette.*

GLACIERS.—Among the most remarkable objects on the surface of our earth are the great rivers of ice that are forever slowly creeping down the valleys of the Alps. The globe on which we live is sweeping through a region of intense cold, the warmth which is essential to animal life extending at farthest but a few miles from its surface. The rays of the sun, which produce the heats of summer, pour through the cold space above without leaving in it any traces of their power, The water which is evaporated from the ocean and rivers, as it floats upward into the cold regions, is there condensed, and, falling upon the summits of the mountains, covers them with deep layers of perpetual snow. As the snow accumulates in vast masses in the valleys which furrow the steep sides of the mountains, it is pressed downward by its own weight along the valley, and when it reaches the boundary of perpetual frost, it is converted into clear solid ice. From what we know of the properties of ice we should suppose that a mass of it hundreds of feet in thickness, wedged in between the rocky and ragged sides of a crooked valley, would remain immoveably fixed in its position; but careful and repeated experiments show that this is not the case. Professor Forbes, in Edinburgh, by placing rows of stakes across a glacier and observing them carefully with a theodolite, ascertained that the whole mass was moving slowly and steadily downward, at the rate of a few inches only in 24 hours.

Within a few years glaciers have been thoroughly investigated by Agassiz, Forbes, Tyndall and many others, and hundreds of observations of their motions and phenomena have been made with suitable instruments. It is found that the motion is more rapid in the middle than at the sides, at the surface than at the bottom, in the summer than in the winter—and like rivers of water, glaciers move the most rapidly in the steepest part of their course, the motion becoming very slow indeed where they spreads out to fill a broad part of the valley. When the earth falls down from the sides of the valley upon the edges of the glacier, it rests there, forming long lines or walls, which are called *moraines*. When two streams of ice unite, the moraines upon the contiguous edges come into the middle of the combined stream, and thus the glacier in the lower part of its course becomes marked with rows of earthy matter and broken rocks extending lengthwise along its surface. When separate masses of rock roll down from the sides of the valley and rest upon the ice, they protect the ice directly beneath them from the action of the sun's rays, and while the surface around is melted away, these rocks remain lifted up in short pillars, presenting a very singular appearance. Isolated masses of gravel also protect the ice from melting, and when that around melts away, the mass falls in a conical form, and thus the glacier becomes dotted with cones of gravel the hearts of which are of ice.

As the glacier moves down the mountain into the warm regions, it is melted on the surface, and thus its vertical depth diminishes at the lower portion, though it generally terminates abruptly with an end of considerable thickness, a stream of water usually flowing out of a deep cave in the end. In summer this end melts more rapidly than the glacier moves down, and the terminus retreats up the valley; but in winter the head of the frozen monster is pushed downward along the valley, plowing up the ground, tearing trees from the earth, and sometimes crushing in the walls of houses.

The Himilayas and other mountains which rise into the regions of perpetual frost produce glaciers, as well as the Alps. Near the poles the glaciers are sometimes pushed quite into the sea, when their ends break off and float away, forming the icebergs, which are occasionally encountered on the voyage from this country to Europe.—*Scientific American.*

Editorial Notices &c.

A few more Subscribers wanted.

We have much pleasure in being able to state that the *Agriculturist* has attained a considerably larger circulation this year than ever before

...e its establishment. Having commenced ...year however with a largely increased edi..., we have still about a thousand copies on ...d from the commencement of the year, and ...consequently able to fill orders to that ...nt for he whole voluume. If as many of ...correspondents as possible will favour us with ...w more orders, they will enable us to distri...te these back numbers in their various locali... where of course they will be of more ser... than in our office. We regret that owing ...s pressure of occupation we are not able yet ...announce the list of subscriptions up to 1st ...l. We hope to be able to do so by next ...ber.

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HUGH C. THOMSON,
Secretary.

Toronto, 1861.

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