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Canadian Agriculturist,

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OF UPPER CANADA.

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No. 24.

The Close of the Year.

The year 1860 will be a memorable one in many respects, throughout the world. The disturbed political condition of Europe and the East, involving changes of the greatest moment, as affecting the rights and liberties of the people, and the progress of civilization, will afford abundant material for an important chapter in the world's history. Our neighbors on the other side of the lines promise to contribute something in this direction. Let us hope, however, that the present excitement will speedily subside, and that a wise and moderate course will be pursued by those who govern public opinion, that the confederative Republic may be maintained in its unity and integrity. We, in Canada, must necessarily be affected by any excitement or troubles that may agitate our neighbors, since our commercial intercourse is every day increasing; and already our farmers here have suffered a reduction in prices from this cause, particularly in wheat. Commerce is a most sensitive thing; and its extension and prosperity essentially depend upon free intercourse and internal quiet among all nations; or in other words, upon peace and security throughout the world.

The year 1860 will be memorable in British America, and the United States, for a bountiful harvest, and a consequent revival of agriculture and commerce. While thankful to a gracious providence for this mark of Divine favor, it is most earnestly to be hoped, that our people will use the wisdom to use rightly, returning prosperity, by abstaining from rash speculations, and

the indulgence of an unreasonable desire of hastening to be rich; a mistake as disastrous in the light of a sound political economy, as it is inconsistent with the spirit of christian morals. Industry, intelligently, perseveringly and honestly pursued, will, in this country, be sure in due course, to meet a fair return; a condition of things the most favorable "to the greatest happiness of the greatest number."

The year 1860 will be memorable in the agricultural annals of the British Islands, and a large portion of Northern Europe, for an almost unprecedented decree of cold and wet, during nearly the whole of the spring, summer and autumnal months; and as a consequence, a harvest deficient in quantity, and very much deteriorated in quality. It is universally admitted, that so injurious and extraordinary a season has not occurred in that part of the world since the year 1816; and if draining, the enlargement of enclosures, and general improved culture had not been extensively introduced since that date, the result must have proved still more disastrous. In some situations the wheat has been so much injured as to be unfit for human food, and is being fed to cattle. Grain that was much sprouted in the field, and afterwards kiln-dried, is by such process imperfectly converted into malt; and in that state some of the English farmers consider it to be better adapted as food for stock. It is evident from the latest accounts received from Europe, that a large demand will continue for our best quality of wheat on this side the Atlantic, and that current rates, at least, will be maintained.

On the cold, wet lands of the British Islands, France, &c., in consequence of protracted rains, the soil was not in a state to admit of a favorable seed bed, and we have seen many complaints of the late and disadvantageous manner in which the wheat has been sown; the exact opposite to our experience in this western hemisphere.

We consider then that our farmers' prospects are now much brighter than they have been for several years past, and that prices are likely to continue remunerative. We require to pay better attention to the cleaning and cropping of the soil, the selection of seed, and the application of manures; matters of the utmost importance in order to reap abundant crops of good quality. And with a view of expediting the accomplishment of these objects, we would strongly recommend our readers to improve the leisure which winter affords for storing their minds with useful and appropriate information by judicious reading, and careful directions. Farmers cannot now complain of a want of suitable books, either as periodicals or standard works. The chief thing is to get farmers, young men especially, to form the habit of reading, thinking, and correct observation. Such acquisitions both dignify and improve their pursuit. The comparative leisure of winter affords opportunity also for considering and planning next year's operations; repairing implements, hauling posts and rails, so as to get fences into an efficient state for protection, before the hurried duties of the spring commence. Something can always be done by anticipation, towards rendering the operations of that extremely busy season less complicated, and more easily practicable.

Portable Manures and their applications.

The most signal improvement, perhaps, in modern British agriculture is the manufacture and employment of less bulky manures, which readily admit of being transported to the most distant parts of the farm, and the sides and tops even of hills and elevated ridges, places to which farm-yard dung and other heavy substances used for fertilizing the soil, would not reach. Hence we now see splendid fields of turnips, folded by sheep, followed by excellent crops of barley or oats, with clover and grass, where from time immemorial only heath, broom, and a few coarse alpine plants, cropped by the mountain or black-faced sheep, were only to be seen. Portable

manures, or Land tillages as they are sometimes termed, such as guano, rape and bone dust, super-phosphate of lime, poudrette, &c., are also extensively employed in the ordinary cropping of the lower portions of farms; and their introduction into Canada of late years, although a yet but to a small extent, is constituting a new and improved epoch in our colonial agriculture.

Portable manures are applied either in a dry or liquid form, broadcast or in the drill, prior to sowing, or during the time the side is being deposited. In some cases a portion is applied after the plants have advanced to a certain stage, a portion being deposited at the time of sowing the seed.

The application of portable manures, guano, or super-phosphates, in a liquid state, renders the germination of the seed, and the subsequent braiding, a matter of certainty, and is consequently of peculiar advantage in sowing turnip and other small seeds in such a climate as Canada, when drought is so frequently a cause of failure during the spring and early summer months. In a dry climate the applying of manure in a liquid form has been known, in some instances, to double the weight of root crop. Machines for the equable distribution of liquid manure have been invented, and found much beneficial under certain circumstances in practice. The quantity of water to the amount of manure per acre is regulated according to the condition of the land, the dryness of the atmosphere, and the supply of water within a convenient distance. The water-drill is used for manure as well as for turnip—the depositing of the seed following immediately the distribution of the liquid-manure, which is conveyed from the body of the machine by spouts. Super-phosphates are usually preferred for liquid-manure, but a mixture of guano with super-phosphate is occasionally employed.

In applying portable manures, the common practice is to deposit in the drills, either by hand or by machine. By this method the roots of the germinating seed rapidly come into contact with the manure. This condition, when manure is present, ensures a rapid growth during the first stages; but in practice it has been observed that the plants, when they reached the period of bulbing, do not grow so vigorously either in developing the leaves or bulbs. It

the manure is deposited broadcast, and prior to the forming of the drills, it becomes more mixed with the soil, and is more evenly scattered through the space in which the rootlets of the plant will ultimately spread. Hence the plants grow more uniformly, and are less subject to diseases, such as mildew, &c.

Another novel method of applying portable manures is partially followed. By depositing a part of the manure at the period of sowing, and applying another portion when the plants have attained a certain growth, very good results have been obtained. The second manurial application is made when the crop is being hoed for the last time, the manure applied on the surface being stirred into the soil by the use of the paring-plough, drill-grubber, and hand-hoe. In the cultivation of all root-crops, this supplementary manuring produces very marked results, particularly when moisture occurs shortly after the manure has been applied. The best descriptions of manures for the supplementary dressings are those containing a mixture of ammonia and phosphates; Peruvian guano, possessing these, can be profitably used for this purpose. When it is intended to adopt this practice, the manure applied at the period of sowing should be a phosphatic guano or super phosphate—applied at the rate of three or four cwts. per acre—the supplementary application being a similar quantity. Guano to be applied when the plants are well advanced, should be treated with sulphuric acid. The phosphates present will be more readily appropriated by the plants, and the results of the application will consequently be greater. Indeed as a rule, almost all guanos can be profitably treated with acid, whether applied prior to sowing the seed or used for surface manuring. In this country more particularly, the application of portable manures will be found most advantageous in raising root crops, especially turnips and mangels, and success will greatly depend on bringing the soil into a suitable condition by deep cultivation, and frequent stirrings during the growth of the crop.

How to ascertain the Quality of Guano.

As much adulteration of guano has been made, before it reaches the farmer's hands, the following simple rules will be found useful, and can be

readily applied. For a precise knowledge of the composition and commercial value of guanos, a thorough chemical analysis is required, and which in many instances has been the means of securing the farmer's interests against the attacks of wilful fraud.

1st. *Colour of Guano.* The colour of coffee with milk is ordinarily that of good guano. If the colour is too grey, it is probably because the article is too earthy. When it is browner, there will in general be found a large quantity of water in it.

2nd. *Taste.* The stronger the flavour of guanos, as salt, piquant, and caustic, the richer they are in ammoniacal salts.

3rd. *Smell.* The smell of guano can scarcely serve as a means of comparison, for it varies with the degree of dryness, or moisture. However, a smell of ammonia is a good sign.

4th. *Consistence.* Good guano is ordinarily oily to the touch. It is in small grains, but sometimes in larger pieces. If the guano be rich in urates, the pieces, when broken, appear shining and crystalized. When the guano is of inferior quality, it is full of earth; it is bad if it contain many stones and gravel.

5th. *Flame.* A small piece of good guano put on a thin blade of platina, and held over the flame of a spirit lamp, will blaze up, burn with a long flame, and leave a residue of charcoal ashes. Guanos poor in organic matter give out less charcoal.

6th. *Testing with Quicklime.* A piece of guano rubbed with a piece of quicklime emits a strong smell of ammonia. Ammonia and the phosphates constitute the chief manurial power of all guanos.

Thistles.

A correspondent in our last number gives an account of his mode of destroying those most troublesome pests of the farm. When these weeds get a strong hold of land, as is the case with thousands of acres in this Province, their complete eradication is a difficult and often protracted operation. In pasture land, thistles may in a few years be entirely got rid of by cutting them off with a spud a little below the surface. And summer following arable land, and pulling them up or cutting them off as they appear;

eventually destroy the nuisance. It should be remembered that most kinds of thistles are endowed with an amazing quantity of seed, which the farmer often sows with his grain, so that the evil is self-propagating. The ordinary corn, or as it is here termed Canada thistle, (*Carduus arvensis*) often contains from five to six thousands seeds in a single plant, besides rapidly extending itself by creeping roots. The prevalence of thistles, and weeds generally, is an infallible mark of slovenly farming. Good cultivation and the sowing of clean seed, will in the long run prevent these pests from producing a serious annoyance. The only perfect cure, however, is to pull up or cut off the plant below the surface, *before it runs to seed*. In this way, by constant attention, thistles and all other weeds may be completely arrested, and the land kept *perfectly clean*, which in the end is by far the *cheapest* way of encountering the evil.

The following observations of Professor Backman, in a recent number of the *Mark Lane Express*, will be found both interesting and useful:—

We have now to speak of the perennial forms of thistle: and here the *Carduus arvensis*, from its specific name, might appear to be an agrarian rather than a pasture weed; but, in truth, it is far too abundant in both, and wherever found it is difficult to eradicate on account of the long succulent creeping *Rhizomata*, by which so large an underground growth is maintained, being ever ready to shoot up on the advent of spring, and suddenly to show forth the patch of thistles where formerly only a few had been observed. From the well-known fact of the increase of this plant by the means here described, the farmer concludes that it is only propagated in this way, and that the seed of this plant will not grow. And Curtis entertained the same opinion, for after describing the growth of the part which botanists call the *rhizome*, he says as follows,—“This, therefore, is the manner of their reproduction: the fibres left shoot out larger roots, which also rise higher in the soil and spread; these form buds, and hence come our annual crop of thistles.”

However, as we had reason to suspect some fallacy in this, we collected some seeds and planted ten in a pot, and we found that *every one germinated*. We have them still growing; and when the experiments are complete, shall hope to make out some new facts in the natural history of thistles. At present, however, we can only record the opinion that the *Carduus arvensis* is annually produced from seeds to an enormous extent; but so small is its first year's growth above the ground as hardly to attract

notice, while the underground growth is preparing small buds, which make a complete colon the second year. However, it happens fortunately that much of the seed of this plant is eaten by a weevil, and that which arrives at perfection is a favourite of small birds, and particularly of the finches.

To destroy thistles of this kind in a meadow we should take care never to let the leaves which are the lungs of the plant, have time for their growth; as soon as we see them we should trample them under foot, or hammer the young buds to bits with something like the old “clod beetle;” and when they greatly abound a repeated rolling with a Crosskill seems advisable, the object being to *bruise* them, as they do not recover injuries of this kind so soon as those done by a sharp implement, clean wounds in plants, as every gardener knows, being much more easy to heal than contused ones; and the object is to prevent the growth of the leaf which is the active agent in building up the structures of the plant, not even omitting those below ground. If this be continued with either this kind of thistles or nettles, the rhizome will gradually die out. Curtis condemns the earl attack upon thistles; he says,—“Clearing the wheat of thistles by the hook or spud is usual practised during the months of April and May, but, to show of how little avail it is to cut down thistles early in the year, the following rust doggerel may be subjoined:—

“If thistles be cut in April,
They appear in a little while;
If in May,
They peep out the next day;
If cut in June,
They re-appear very soon;
If in July,
They'll hardly die;
But if cut in August,
Die they must!”

From these lines it would appear to be generally known that thistles (and we have seen the same rhymes applied to the case of nettle grow again after injury, more or less readily according to the month in which it is done; so that in May, when the destinies for the year of so many plants are determined, the new growth is rapid. Well, be it so; but we would remark that cutting them in April or May does the greater amount of permanent injury on this very account, whereas although it is equally true, that if it be done in August, you see no more of them the next year; yet no real injury is done to the future crop of thistles or nettles, inasmuch as by that time the plant had used all its growth powers to the enlargement of the underground stems—the root-stocks, which are thus strengthened for the following year's growth; for should be remembered that in August its ordinary natural period of growth is nearly over. At this point we may quote the remarks of a writer in the *Agricultural Gazette* for June, 1859:

"In August the nettle has performed all its functions for the year, even to the production of seed, so that, although upon being cut down it will disappear for that year, the pest is not at all injured in productiveness for the next season. The fallacy of recommending August cutting of these weeds must be apparent to everybody. The madman in the poem is made to say to the soldier as to killing his enemies—

Kill a fool's head of your own;
They'll die of themselves if you let them alone."

And this is quite true of the enemies of the farmer at this season. The first cold night acts quite as readily in destroying the above-ground growth as the most careful cutting. Hence the jury inflicted by August cutting is more apparent than real."

In dealing, therefore, with perennial plants of this kind, as found in pastures, the only plan is to bruise them when they first appear, and again whenever they re-appear, and their permanent destruction will be ensured at a quicker rate than generally supposed.

Botanical Society of Canada.

We are glad to see that an influential meeting, called by public advertisement, has recently been held in the city of Kingston, to consider the propriety of establishing a Botanical Society. The Rev. Dr. Leitch, Principal of Queen's College, was called to the chair, and opened the proceedings with a perspicuous and eloquent address. The learned Principal was followed by Professors Williamson, Weir, Mowatt, Litchfield, Yates, Stewart, Lawson, etc., who pointed out the advantages which such a Society, in connection with a Botanical Garden, would confer not only in the vicinity of Kingston, but in the British Provinces generally. The interests of Botanical science would thus be protected in an extensive region of country, which hitherto been too much neglected, but which promises to all zealous cultivators an abundant harvest. The resolution to establish the Society was carried unanimously, and a code of Laws its government agreed to, and a considerable number of gentlemen entered their names as members. The Society consists of four classes, viz: 1. Honorary Members; 2. Fellows; 3. Annual Subscribers; 4. Corresponding Members. The subscription of Annual Members is \$10. Members generally will enjoy certain privileges, such as an exchange of plants; infor-

mation relative to their habits, mode of culture and economic uses, &c.

As the proceedings of this Society, if properly sustained and carried out, cannot fail to influence favorably not only the Horticulture but also to a considerable extent the Agriculture of Canada, we subjoin without abridgment the able and interesting address of Professor Lawson, who is ready to furnish all particulars of the organization and objects of the Society, and the manner of carrying the letter into effect.

PROFESSOR LAWSON'S ADDRESS.

Dr. Lawson pointed out the peculiar sphere in which the botanist is called to labor, the range of his studies, and the means required for their pursuit. It is of great importance that at the outset the real object of our proposed Society should be understood. The establishment of a Botanical Garden and other appliances must be regarded as secondary to the great object of the Society, the prosecution of scientific botany. Botany is at a low ebb in Canada, at a lower ebb than in most civilized or half-civilized countries on the face of the earth. At the close of the eighteenth century only five dissertations on botanical subjects had been published by the whole medical graduates of the great continent of America. Since then the indefatigable labors of such men as Michaux, Torrey, Harvey, Curtis, Boott, Engelmann, Tuckermann, Sullivant, Lesquereux, and especially of one whose name and fame rise above all the rest, Asa Gray, have brought our knowledge of the botany of the United States on a level with that of the best botanized countries of Europe. The Flora of Canada has also been elaborated since then by one who still presides over the destinies of botanical science, not in England alone, for his authority is recognized wherever the science is pursued. But during a period of nearly thirty years very little has been added to our published knowledge of Canadian botany. Information respecting our indigenous plants must still be sought for in the work of Sir William Hooker, issued from the Colonial office in England in 1833. That work, founded as it necessarily was, on dried specimens carried home by passing travellers, afforded to the botanical world an admirable example of how much could be made out of slender material when in good hands. Unimpeachable as a work of science, unsurpassed in the whole range of botanical literature in the accuracy and beauty of its illustrations, the *Flora Boreali-Americana* afforded the means of developing still more fully a knowledge of the Canadian Flora. The North American Flora of Torrey and Gray, and the Manual of the Botany of the Northern States, offered additional temptations to the pursuit; but advances have not been made commensurate with the advantages that were offered: we have

still, therefore, the singular anomaly of a country distinguished by its liberal patronage to science, dependent for its information respecting its native plants on the descriptions of specimens culled by early travellers. What was thirty years ago, and is now, of the highest value, can only in a partial manner meet the wants of the country in these days, when new manufactures and new forms of industry, seeking new products to work upon, are daily springing up around us. We desire to place the science of Botany on a more satisfactory footing in Canada than that which it now holds; we desire to increase the existing stock of knowledge; we desire to diffuse a taste for the study, so as to add to the number of laborers now in the field; and we desire to place on record new observations and discoveries, as they arise. The Botanical Society is designed as a means of carrying out purposes such as these.

Extensive circulation was given some time ago by Canadian newspapers to a report that Sir Wm. Hooker was on his way to Canada with a staff of assistants, to explore the botany of the country. I have the best authority for stating that that report was without foundation. It probably originated in certain proposals that were made to the Colonial office regarding the publication of a series of popular Manuals of Colonial Botany; but no expedition was ever contemplated by Sir Wm. Hooker, or any one else, at the instance of the Government. On the contrary, recent communications from the botanical advisers of the Home Government indicate that Canada must follow the salutary example of other old established British Colonies, and conduct for herself investigations into the nature and distribution of her indigenous productions.

We already possess in Canada several important scientific societies in active operation. While the Canadian Institute is of a comprehensive character, embracing all branches of science, literature and philosophy, the special department of geology is amply cultivated by the Natural History Society of Montreal, which has also, however, made valuable contributions to zoology and botany. In addition to such institutions as these, we have, of still more special character, the Government Geological Survey, which has been instrumental in carrying out investigations of the greatest importance to the country, whether their results be viewed as intellectual achievements or as contributions to material industry.

It is proposed that our Society shall have for its object the advancement of Botanical Science in all its departments—Structural, Physiological, Systematic and Geographical; and the application of Botany to the useful and ornamental arts of life. The means by which this object may be accomplished are various, and will come before us for discussion from time to time. In the meantime, it is proposed that there shall be monthly evening meetings in Kingston during

the winter for the reading of papers, receiving botanical intelligence, examining specimens and discussing matters of scientific interest in relation to the science; also that there shall be field meetings during the summer in distant localities in Canada, as well as in the other British Provinces of North America, and occasionally also in the adjoining States, whereby our members may have an opportunity of investigating the botany of districts that have been imperfectly examined. By the above, and similar means, much important information may be brought together. Such facts and results, new to science, as are laid before the Society, from time to time, will afford materials for the publication of "Transactions," whereby our store may be rendered available to the public in Canada, and to botanists in other parts of the world. In addition to such means, the Society may greatly promote its objects by correspondence with botanists in other countries, and especially with those who are located beside the extensive public herbaria, botanical libraries, and gardens in various parts of the United States and Europe. By correspondence with such persons, many doubtful points in nomenclature may be settled, while the existence of information relating to Canadian Botany may be ascertained which might otherwise remain unknown. Botanists distinguished in certain branches of the science may be called upon to furnish reports on the special subjects, for which materials may be brought together by the members. Such will be of the greatest value to the Society, and I have therefore gratification in informing that communications have already been received from some of the most active botanists in the United States, England, Scotland and Prussia promising cordial co-operation. So soon as preliminary operations enable us to proceed to the discussion of scientific business, you will also have an opportunity of ascertaining the extent and breadth of Canada, as well as in the other North American Provinces, from the Red River in the far west to the Island of Prince Edward in the East. In common with the botanists of other countries, we must necessarily take notice of those discoveries in structural and physiological botany which are daily challenging a careful examination. But our position comparatively new country points out a special path of research which it will be our duty to follow—that which has for its object the investigation of the species botany of Canada, the geographical and local distribution of the plants. The indigenous plants, whose uses are now used or are capable of being applied to the useful arts, will deserve a share of attention, and no doubt, regard also be had to those that are suited to our climate, but have not yet been introduced. Still around our path in the woods and on the shores of our lakes are many plants capable of yielding food and physic, dyeing, and the

materials, oils, fibres for spinning and paper-making, &c. Even in the midst of the city of Kingston, growing on vacant lots, and in court yards, here are drug-plants enough to stock a Liverpool warehouse. Such will no doubt be brought into use when better known, and thus an increase will be effected in the production of the country.

Two things are necessary for the successful prosecution of such researches—a good botanical library and a good herbarium. During the last year botanical works of great value have been added to the library of Queen's College, and these, together with others in private hands, which will be accessible to members of the Society, embrace almost all the works that have a direct bearing on the Canadian flora. There is now laid in Kingston the basis of a botanical library, which it will be the object of this Society to foster, by additions obtained by purchase or exchange with other scientific bodies, provided a suitable arrangement is made with the University authorities. With respect to a herbarium, or collection of dried plants, this is highly regarded by every Botanical Society as absolutely necessary to enable members to refer specimens correctly to their species. It will therefore be satisfactory to know that arrangements are now in progress, whereby the herbarium, presently attached to the Natural History air of Queen's College, will be re-arranged in a convenient room, so as to become available for this purpose. The Herbarium embraces a representation of the Floras of Europe, Asia, Africa, and Australia, and is especially rich in American species; it has been named with great care, under favorable circumstances, by any of the specimens, in difficult and obscure families, having passed through the hands of the best botanists as Balfour, Greville, Gray, Babington, Heldreich, Hooker, Lindlay, Bruch, andimper, Syme, Wilson, Berkeley, Moore, Mitchell, Tuckermann, Carrington, Watson, Lowe, and Gray, Harvey, Leighton, and other authorities in nomenclature. In addition to such specimens as the above, there is now an abundant supply of excellent Microscopes in Queen's College, with all needful apparatus for the prosecution of minute researches and microscopical analysis.

It will be observed that we propose to occupy a new field of research, to cut a new sod that hitherto been walked over by Canadians in comparative neglect. And, as before cultivation can take place, a clearance must be made, have endeavored to answer some of the objections that might be started to the formation of a Society, and to point out the nature of the ground which it proposes to occupy. While referring to other Societies the discussion of the general questions of science, and to special topics their peculiar topics, we propose to employ the Botanical Society as an instrument for the collection of facts and the working out of details, which are of immediate interest to the botanist alone, but of the greatest impor-

importance in leading to correct results in general science. Scientific Societies on a broader basis have too often degenerated into popular institutions, calculated rather for the amusement of the many, than for the encouragement and aid of the few who are engaged in the prosecution of original discovery. We shall be guarded against such a result, in a great measure, by the special object of our Institution, but it will be needful, also, while we attempt to spread a taste for Botany, and to diffuse correct information as to its objects, its discoveries, and its useful applications, that we should seek rather to bring our members and the public into scientific modes of thought and expression, than to allow our Society to yield up its scientific character to suit the popular taste. There is much reason to believe that the want of an organization of this kind, whose duty it is to collect and record facts and discoveries, has been the means of losing to science materials of great value. There have been casual residents in Canada, at different times, who have made collections of greater or less extent, and who have, in some cases, carried out special investigations in Botany, without leaving any printed record of their labors. Some of these may still be rescued from oblivion; but there are also other observations and discoveries made by present residents in the country which, we may confidently hope, will be made available to the Society's purposes. Professor Williamson's long residence in Kingston has enabled him to make an extensive series of observations on our local flora, which are of the greatest interest, and other Professors of Queen's College have followed his example. Some of our graduates and students have also, of late years, made collections of greater or less extent, during their vacation residence in different parts of the country. The neighborhood of Kingston and the adjoining islands have been investigated by Mr. Andrew T. Drummond, B.A., who obtained a prize for his valuable collection, in the Natural History Class, two years ago. Dr. Dupuis has collected the plants of the rear of Frontenac and Earnestown, while Newboro', Perth, the Ottawa country have each their collectors. Dr. Giles has, I believe, been devoting special attention to lichens. Mr. Schultz has had an opportunity, during the past season, of botanizing the Red River Settlement, and I have received notices of collections, formed by our students in other distant localities, that may prove of great interest. Circumstances such as these give us reason to hope that our efforts to raise up a Botanical Society will be attended with success, and that its labors will be beneficial in leading to a more extended knowledge of the indigenous productions of Canada.

The objects sought by the establishment of a Botanical Society in this country are of great importance, both in a scientific and economical point of view. The field is broad, and the soil is rich. The extent to which we can cultivate it will depend entirely upon the number of in-

borers, and the zeal and industry which they display. Let us, therefore, be not disappointed with our first results. Let us lay a foundation, and persevere in the work, and workers will gather around us as they have done before in the Botanical Societies of other countries. To organizations of this kind, more than to any other means, are we indebted for the advanced state of Botanical science at this day; and in a country such as this, it is especially needful to have a wide-spread organization in order to elicit satisfactory results. In an attempt to organize a Society such as this, we may confidently appeal to many classes of the community. The theologian and moralist see in the vegetable kingdom a display of the power and wisdom and goodness of our Creator, and beautiful types of spiritual teaching; the medical man recognizes in it the source of his most potent drugs; the sanitary reformer knows that the simpler forms of vegetation are often the cause, and more frequently the index, of widely spread diseases; the lawyer finds in the microscopical structure of vegetable products a ready means of detecting frauds, adulterations and poisonings; the commercial man recognizes the value of a science having such bearings, and directly devoted to the extension of the sphere of industry; the spinner and paper-maker must here obtain their knowledge of the mechanical condition of vegetable fibres; the farmer, the gardener, the orchardist, the vine-grower, the brewer, the dyer, the fanner, and the lumberman, must all apply to botany for an explanation of matters that daily come before them in their various avocations. As an utilitarian institution then, our Society is worthy, and will no doubt receive, warm support; but it is to be hoped that many zealous laborers will enter the field from higher motives—a desire to promote the cause of science.

On the use of Salt and Bones, Sulphuric Acid, &c.

At your request, I beg to furnish answers to the following questions put by "A Constant Reader:—"

"1st. Will common salt dissolve half-inch bones in a proper manner for the use of the turnip crop; and, if so, in what quantity (for a ton of bones) should it be applied?"

"2nd. Is sulphuric acid of itself of any use as a manure?"

"3rd. Which is the cheaper to use for the turnip-crop—dissolved bones or guano?"

1st. It is now a well-known fact that for the turnip-crop phosphoric acid is a most valuable manure; and, in order to obtain good results from its application, it must be used in a soluble state. There are several methods for rendering the phosphoric acid in bones soluble; and, unquestionably, that is the best which will give the greatest crop at the least cost. The method

proposed by Professor Liebig, of dissolving bones or other phosphates with sulphuric acid is a most excellent plan, and one which is generally adopted, care only being necessary to supply sufficient sulphuric acid to render soluble a sufficient amount of the phosphoric acid of the bones. Another very simple means of decomposing bones is by mixing them with wet ashes, which in a short time an immense quantity of heat will be generated, arising from the decomposition of the animal matter of the bones; and the bones thus finely divided, are found to be much better and in a more available state for the roots of the turnip. Even if crushed bones be moistened, and mixed together in a heap, similar effect will be produced: slow, spontaneous combustion commences, and heat is produced, by the same law that causes hay-stacks to fire when harvested, and also manure-heaps, when moisture is present in a favourable quantity.

But by this method of preparing bones there will be a considerable loss of ammonia, unless there be some good absorbent spread over the surface of the heap. Many successful experiments have been tried by Mr. Pusey, by decomposing bones with peat ashes and sand. A gentleman mixed one cart-load of crushed bones wetted, with two of ashes; and in another trial one cart-load of crushed bones, wetted, with one of sand. In a few days the bones were equally decomposed; and in these applications to a crop he found that the same value of bones, composed in this manner with sand, gave better results in the produce of the succeeding crop than he obtained by the application of an equal value per acre of superphosphate of lime. In my opinion that spontaneous decomposition of this kind will take place by the admixture of common salt with moistened half-inch bones, though it is probable that not much will be gained by the use of the salt instead of sand. This had better be decided by experiment. I believe that common salt would have little or no more power of decomposing the bones than the peat-ashes or sand; but there might be a beneficial effect from the application of salt to the soil, in connection with decomposed bones, inasmuch as it would supply the chloride of sodium required by the turnip: If common salt be used, I should recommend a less quantity, in proportion to the bones, than of peat-ashes, as used in the above-mentioned experiments.

2nd. Sulphuric acid is undoubtedly a manure for plants *per se*, as it can always be detected in their ash. For the potato crop it is very beneficial, and also for the clovers and turnips. Sulphuric acid exists in the latter to a very considerable amount. Now comes the mode of application. If the question means, Is it good to apply vitriol to the soil as a manure in its uncombined state? I would say it would certainly serve as a manure on such land that required it; its first action would be to decompose any carbonate of lime in the soil, and form gypsum.

and this gypsum might have been applied in the first case cheaper and more easily than the oil of vitriol, for that mineral acid is very destructive of anything it comes in contact with, and would be very inconvenient to put upon the land. Sulphuric acid may be applied in various ways to advantage, in the form of sulphate of lime, sulphate of soda, sulphate of magnesia, and sulphate of ammonia.

3rd. The turnip crop is of immense value to the feeder of cattle, and it is necessary that every means should be made use of for producing it at as small a cost as possible. When the land is properly prepared, by a certain number of ploughings, &c., then a quantity of food is required to be stored in the soil to support the plant during its growth. The analysis of the turnip shows that phosphates and sulphates are very necessary as inorganic manures, whilst as an organic manure ammonia stands the highest. To say which is the cheapest to apply to the soil, phosphates in the shape of bones in a soluble state, or phosphates and ammonia as in guano, would be very difficult as a rule; for circumstances would alter the case: for, should the soil contain naturally (as many do) a considerable quantity of phosphates, then guano or ammonia would be the best to use; but, as a rule, for turnips it is better to apply in the manure both phosphates and ammonia, for then you give the organic and inorganic materials. From many series of experiments that have been made, it has been proved that both the organic and inorganic manures take their part in the production of vegetation. The use of both has proved practically to be the most efficient, and I should commend as a manure from one to two cwt. of superphosphate of lime, or bones in a soluble state, mixed with ashes or some other material containing potash, to be drilled with the seed; and one or two cwt. per acre of guano, to be sown broadcast on the land, and harrowed in, about one month previous to sowing the seed. This, I consider would be the *best* manure for the turnip crop, and therefore the *cheapest*. The superphosphate would force on the young plant, whilst the guano would be disseminated throughout the soil for its after-growth. E. LANE.
Mark Lane Express.

Distress of the Settlers in Minnesota.

The following memorial to the U. S. Congress presents a melancholy picture of the position in which settlers in parts of the great West are placed. It is deserving of the careful attention of those farmers and others in Canada, who know that all they need do to secure a fortune is to desert the fertile lands and sure prospects of success open to them in this country, and migrate to the Western and North-western States and Territories of the Union.

SALE OF PUBLIC LANDS.—MEMORIAL.

TO THE PRESIDENT AND PEOPLE OF THE UNITED STATES.

Fellow Citizens.—The proclamation of the President of the United States recently issued declaring an extensive land sale in Minnesota and other States and Territories, to take place in October and November of the present year, has induced us to present a few facts for your consideration.

Most of the people who sign this statement, together with a majority of those living in this part of the West, are settled on lands belonging to the United States. We came to this part of the country with the hope that by a few years of labor, economy, prudence, and deprivation, we could pay for enough land to make homes for ourselves and our families. In this we have been disappointed. Many of us have raised enough produce and stock, which, if they could have been sold; or could now be sold at fair prices, would enable us to pay for our lands; but we have no market at home, and no railroads to carry it abroad. If we wish to exchange our produce for necessary articles, we must carry it from five to fifteen miles to find a store, and when there, we must give ten bushels of wheat to buy a pair of boots, and four bushels of corn to buy a yard of coarse woollen cloth.

Our salt, iron, glass, and nearly all our manufactured articles come from distant places, and while we have to pay double price for these, we can get but one quarter of the ordinary value of our grain. We came to this part of the country generally without means, and you, gentlemen, upon a moment's reflection, can appreciate our condition, when we took possession of those lands. We have no houses, no roads, no bridges, no fences, no barns, no seed, no market. Suppose after getting our families into half tenable houses, we raise more than enough the first year to supply our bare necessities, our mill is twenty miles distant, and our nearest store ten. On account of the scarcity of teams, we often have to carry our grain and other produce a part or all the way to mill and market on our backs, and to bring back our flour, salt, mails, and clothes in the same way. Tea, sugar, molasses, spices, and the like, we go without for years, or use them only as a medicine, or on special occasions.

We wear corn-sack pantaloons, and old moccasins and boot legs for foot coverings. We use leather hinges, and wooden latches, and glass enough barely to do our in-door work.

We are not presenting to you the cause of the indolent and the profligate—we have worked late, and we have worked early, and have used as much frugality and patience as any class of people in the Union. Still, we are not able to pay for our lands. There are twenty thousand people here in Minnesota settled on Government lands, who cannot pay for their claims, without disposing of all else they possess, and there are

ten thousand of them who cannot pay for their claims on any condition. We have built houses, we have cleared land, and cultivated the soil; we have built fences and dug wells, and made bridges and roads, and in some cases school-houses, but after the 15th day of this present month (October,) any body who has two hundred dollars or a land warrant, can buy our improvements and our claims of the Government, and turn us out of doors.

We do not ask to have property taken from our fellow citizens and given to us for nothing, but we submit to you brethren, whether we have not done something of permanent benefit to the country, and something to entitle us to the land we occupy? There are, doubtless, some seekers after land, who would not disturb the settlers, nor buy the land from under them, but the power to do is theirs, and we fear the worst. We are confident the facts of the case will cause you to decide that we are about to suffer injustice, and so decide, as we are confident you will, we ask you to do what lies in your power to relieve us from this state of uncertainty, and the actual forfeiture of our claims.

Moses Goodrich.	P. Putnam.
D. B. Tompkins.	B. Wakefield.
George Coombs.	E. Hibbard.
Charles Bryant.	W. Walker.
George W. Fee.	James Hibbard.
Hiram Locks.	D. McKenzie.
Paul Kennedy.	Wm. A. Stone.

Sianca, Minnesota, Oct. 1860.

The United States cannot feed the whole World.

The present arid condition of Kansas, so much worse than is ever known further East, is suggestive of certain facts concerning the Western country, as a producer of cereals, which are not so widely known as they should be. Most of our people are as ignorant of the Far West as the English are of the United States generally. The idea seems to prevail that the whole region West of the Mississippi—except that occupied by a few insignificant plains—is a rich prairie land, which will all be ere long occupied by such thrifty farmers as now people Illinois. This is a great mistake. As to wheat, for instance, those who know and ought to know most about it, tell us that Ohio is the western boundary of the rich wheat-growing country. What, then, becomes of the dreams of those who would have it that we will soon be able to supply the whole world with flour? Few men know more about wheat than Mr. Klippart, of Columbus, Ohio, a gentleman of European reputation as a scientific agriculturist. He has made the study of this subject the great business of his life: and yet he, in his recent book on the "Wheat Plant," which was

mostly published at first in the report of the United States Patent Office, makes the above statement. Although American pride has prevented the due circulation of this statement, he substantiates it very thoroughly. He says that the black prairie soil is not the thing for wheat; that it needs a large admixture of clay, such as is found in Ohio and the States east of it; that showy crops can be raised for a while on the prairies, but something generally goes wrong with them. Smut or insects, or some other of the innumerable evils wheat is heir to, destroy so large a portion of the Illinois crop, that the farmers of that State consider it very unsafe, and in many cases entirely abandon it for corn, which is much hardier. Some will say, we can then feed the world with corn. This is a more reasonable supposition; but when we consider the present condition of Kansas, and the structure of all that region which feeds the tributaries of the Missouri river, we see but a poor chance for such an enormous increase of our annual corn crop as is anticipated. The great enemy of all those millions of acres at present called United States Territories, is drought; the condition of Kansas is only a foretaste of what you can find beyond; and consider the state of things even there. In which one of our Eastern States was such a condition of things ever known? After long preserving as strict a silence as possible, Kansas correspondence of eastern papers, for fear thing should be thought to be in a worse condition there than they really are, come out and acknowledge the following facts: Long caravans of retreating emigrants are repassing the border. The loss of the grain crop cuts all means of keeping the hogs now in the Territory. Four weeks ago hogs were almost given away in many places. No one would buy, as there was nothing for them to eat. Thousands could have been bought for half a cent a pound. Soon parties came in from Illinois to buy them up at a fair price—one for three cents a pound, and they are buying nearly all there are there. It has taken five years to accumulate this stock. As to cattle, they are being driven South for wintering; in many cases one-half being offered for the winter feed of the other. Seed wheat is being brought from Chicago; but it is of no use until rain comes. There has been only one remedy offered for these evils that seemed very plausible to us, and that is the thorough use of the artesian well, and irrigation by its aid. Of course it could never supply the place of rain; but by its help a moderate population could be sustained in almost any portion of the country between the Mississippi and the Rocky Mountains. For the "plains," hitherto supposed to be quite uninhabitable, only need some sort of chance to drop "the old oak bucket" in them, to make them the great grazing country of the world. The soil is generally too poor for cereals, but the short, mossy grass which spreads out a carpet of so many thousand of miles in diameter, furnishes excellent perennial cattle fodder, so that wherever the settl

an find a perpetual spring, he has at once a sure livelihood. As it is, their proximity to us makes the plains a far more valuable place for hunting cattle for their hides than the *pampas* of South America.—*Porter's Spirit of the Times.*

Wheat Growing in Ohio.

The experience of two years past has induced the hope that wheat may again be profitably grown in Ohio. As this crop, on land adapted to its growth, may be largely produced without manure, it becomes a question of deep interest to the generation of farmers now about taking the place of their forefathers, to what extent the reduction of this cereal may be urged without impairing the future ability of the soil. It has been proven by experience that some soils contain the specific food for the wheat crop in very small quantity, and consequently are soon exhausted. It is said that in some parts of New England, one crop of wheat may be raised on new land, after which barn-yard manure will give a large growth of straw, but the berry will be wanting. And it is well known that some sections once famous for wheat, are so no longer. In view of these facts, it was the counsel of Judge Buel, in the *Albany Cultivator*, many years ago, to farmers, that as soon as they had aid for their farms and accumulated some means for building, thus having their most urgent wants supplied, that they should cease raising wheat on land every other year, but, instead, introduce a course in which wheat should occur not oftener than once in three or four years.

I have been a wheat-raiser for thirty-five years, on the same farm, which is situated in a belt of land about two miles wide, and eight in length, lying between the Huron River and the commencement of the prairie region. The timber is originally oak and hickory, chiefly the former, with other varieties in the swales; the surface undulating; the soil varying from sandy clay; the average what may be termed a sandy-clay loam. This belt has been famous for heat, so much so that in thirty-five years there has been scarcely an instance of failure on land well cultivated and seasonably sown. The nearest approach to failure in my own experience has been a small yield of ten bushels to the acre the year, caused by the Hessian fly. Twenty-six years ago, I adopted the following course, which continued with success until the advent of the midge. I divided my wheat land into three fields—one was in clover; one in Summer fallow, satured with sheep in the Spring, and as the mowing progressed; and one was in wheat. In very Spring, the wheat division was sown with clover and timothy, and immediately afterward with one bushel of plaster to the acre. All my manure was applied to Indian corn. The wheat land received no fertilizer but the clover, plaster, and droppings of stock, and what nature

furnished from her store of recuperative supply. The average yield of wheat under this course, for a long term of years, was nearly twenty-six bushels per acre. Once I obtained thirty-six, often thirty, never, except one year noted above, less than twenty.

It may be remembered, that this average was from land naturally adapted to wheat, nearly exempt from winter killing, in a great measure, naturally drained, plowed deep and seasonably sowed. Doubtless it was doing well; but not near so well as might be done, nor so well as I should determine to do, if, instead of approaching the close of life, I were just beginning.

The example of English and French cultivators proves that much better can be done. The low price of labor and the high price of land with them, permits a larger outlay than would be remunerative with us, but something more can be profitably done than we are in the habit of doing. I think I proved that with the above course the land was improving more reliable for wheat, and better adapted for the growth of any other farm products.

After the arrival of the midge, I changed the course to corn, oats, and wheat, and then two years rest in clover. The object was to sacrifice something of the annual average to an earlier, thinner and shorter growth of straw, ripening earlier. I went on the principle that half a loaf was better than no bread. This course yielded from fifteen to twenty-five bushels per acre, besides that the midge destroyed—never less than fifteen, and seldom over twenty.

In conclusion I may say, that if we skilfully co-operate with nature, she will aid us with her recuperative powers; if not, the goose that lays the golden egg will die of consumption under our hands. The time may come when the State of Ohio will raise double the wheat it now produces, or when it will cease to be famous as a wheat-yielding State.—PETER HATHAWAY, Milan, Erie County, Ohio, 1860.—*Porter's Spirit of the Times.*

The Machinery of Agriculture.

It is astonishing what changes and improvements have been effected among the implements and machines of the farm within the last quarter of a century, both in Britain and America. The result has been the diminishing the cost of Agricultural productions, and very greatly increasing their amount. Mr. William Fairbairn, the celebrated English Machinist and Engineer; in treating of the subject, observes:—

“This is a branch of mechanical arts which requires the careful consideration of the mechanic and the engineer. The time appears to have arrived when the introduction of machinery, combined with the wide diffusion of

education, is absolutely required amongst our agricultural population; and in my opinion increased intelligence, together with new machinery, will double the production of the soil, and improve the climate in which we live. Much has already been done, yet very much is yet to be accomplished; we must persevere in the new process of deep draining and subsoil ploughing, and in the introduction of steam-power in place of horse and manual labor, before we can realize such large and important advantages as are now before us. Great changes and improvements have been effected in my own time by the introduction of new implements to relieve the labors of the farm. Everything cannot, however, be done by the mechanic and engineer; much has to be done by the farmer in the preparation of the land to render it *suitable for machine culture*; and a willing heart as well as a steady hand is required of the Agriculturist before he can work for the public good in concert with the engineer. The reaping machine has now attained such a degree of perfection as to bring it into general use on lands prepared for its reception; and the steam plough is making rapid strides towards perfection, and is likely to take the place of horses, and effect a change as beneficial to the farmer as it will be to the public at large."

Upper Canada as a Field for Emigrants.

The correspondent of the *Morning Post* confirms the glowing accounts given by his brother "special" of the *Times* of the immense agricultural resources of Upper Canada. He says—"Intending emigrants may find comfort in turning their views to a land which, in its general physical aspect, in its climate, and its splendid agricultural capabilities, wonderfully resembles the mother country, while, in the variety of its resources, and in their vast extent, it far surpasses the three kingdoms of England, Scotland and Ireland, put together. These facts must be strongly again and again urged on the attention of the emigrating classes at home; and it is, in my opinion, a meritorious act on the part of those who desire well to their country and their fellow-subjects to enlighten the world generally as to the superior advantages which Canada possesses for the emigrant over the timberless, ill-drained prairie lands of the Western States of America, recently so extravagantly hepraised by Mr. Caird, M. P., and other interested parties. I have seen enough within the past few weeks to satisfy me that Upper Canada is the most fitting place for the English emigrant. Thousands upon thousands of acres of splendid land are offered almost at a nominal price by the Canadian Government, and upon the several lines of road opened during the last three years, free grants of 60 to 100 acres are given to actual settlers. This liberal policy has been most successful, and the great valley of the Ottawa, and the

vast region lying between the Ottawa and the settled parts of Upper Canada, and extending to the shore of Lake Huron, is gradually being brought within the embrace of civilization. Only ten years ago, the settlements on the Ottawa hardly extended beyond the old town of Bytown; to-day there is navigation on the Upper Ottawa, and flourishing settlements and villages to be found several scores of miles up the Ottawa, and beyond the new capital of Canada. At the two extremities of the province, likewise settlement is progressing most satisfactorily. At the Sault Ste. Marie, on the river Ste. Marie between Lakes Huron and Superior, now one of the free ports of Canada, town lots have been freely disposed of during the past two years; and in the rear of the town plot is a fine agricultural country, laid off into 200 acre lots, which are rapidly being taken up and settled upon."

Agricultural Exhibitions.—Autumn of 1866

Continued from page 556.

PROVINCIAL AND STATE.

OHIO.—The *Ohio State Fair* (at Dayton, Sept. 25—28,) was quite successful. The weather very fine until the third day, the morning which was wet and unfavorable, though the attendance and receipts were large. The *Ohio Farmer* thus sums up the result:—"The *Fair* was excellent in nearly every department, and the management better than ever before; what is equally to the purpose, we have never visited a fair where the people seemed to stimulate all the departments with such interest and industry. This was particularly true of the agricultural implement department. The large grounds devoted to this interest, were continually crowded, even more than the horse-race. The receipts, we understand, were about \$12,000, large enough to pay expenses and have a small surplus left."

The *Ohio Cultivator* says of the Stock department:—"The magnificent show of Short-horn cattle, was without a rival in any previous field show in this country. The show of thorough-bred horses was much better than any previous display in Ohio, where this class of stock is beginning to be better appreciated; and the other classes of horse stock were of the highest order of excellence. The long-eared tribe was well represented by quite a display of the finest bred and mules. Sheep were there in great number and unsurpassed quality, of all the leading popular varieties. And the swine! such glorious specimens never before spread their oleaginous fingers upon the boards of an Ohio State Fair. Cashmere goats were a rare attraction, opening up a new source of production in this country which promises to be a profitable one. The other fowls were very few and of fine quality."

U. STATES.—The *Fair of the U. S. Ag. Soc.* (at Cincinnati, the week preceding the Ohio State Fair,) resulted in a failure, as we learn from friends who attended, and reports in the

papers. There was a fair display of machinery and artistic and domestic manufactures, but the show of Stock was a total failure. Though the weather was most favorable, *the People* were not at the Fair—showing that the protests of the State and Local Ag Boards, and the advice of the Ag Press, had been read and heeded.—*Rural New Yorker*.

MAINE.—Held at Portland, Sept 25 and 26. We take the following summary from the *Maine Farmer* :—The Horse department, as usual, was well filled with very many excellent horses, and some indifferent ones. Their display, and their exercises in the different departments of their class, demonstrated that there was at least no diminution of strength and discipline in the horses of Maine, and that their reputation for speed and endurance is still well sustained.

The Cattle department was well filled. Every stall and stable was occupied with choice stock. Marked variations are always manifest in the numerical amounts of the various breeds, according to the locality of the Show. In Kennebec the Durhams were in the ascendant numerically. Here the Durhams were less numerous and the Devons took the front rank. A good display of Durhams was, however, made by W. Percival of Vassalboro', O. Whittier of North Vienna, and others. Isaiah Wentworth brought on the Prime Devons of the East Poland Shaker family. J. F. Anderson, of South Windham, also brought on his beautiful stock of Devons, which he is very successfully breeding back to the original milking qualities, once known among the Devons of olden time. The Ayrshires were not very numerous, but some excellent specimens were exhibited. But one or two Herefords were on the ground; a splendid bull of this breed was exhibited by J. P. Perley of Bridgton. Of Jerseys there was an increase. In spite of the lack of portly size and symmetry of form, and notwithstanding the jokes and jeers of those who look at cattle only through a *butcher's eye*, they have steadily increased from an exhibition five years ago, of only three individuals, (being all that were then owned in Maine,) up to thirty entered at the last Show. Their dairy qualities are becoming appreciated, and by their good deeds they are slowly working their way as they are better known. The exhibition of Galloways was small.

The Hog department, though not very numerous, nevertheless showed a marked improvement. There was not a mean specimen on the ground.

There was a great falling-off in the sheep-fold. We missed the fine flocks of Somerset County. The exhibition consisted of pairs of the several breeds.

We regret to say that there was a great falling off in the Dairy department, not only in the quantity but quality of the products. This must be attributed to the unparalleled drouth which has borne so heavily all summer upon Maine. It is impossible to make good butter and cheese, or much of it, when the grass of the pastures is dried and roasted to a crisp. Another year, we hope, will bring back the Maine dairies to their former good condition.

LOWER CANADA.—The Lower Canada Provincial Show was held at Quebec, on the 26th, 27th and 28th Sept. It was originally intended to hold it in conjunction with the Provincial Industrial Exhibition held at Montreal, on the occasion of the visit of His Royal Highness the Prince of Wales, but that arrangement fell through. We are not in possession of any report except the list of prizes awarded. At the earliest Provincial Shows in the lower Province, the show of cattle was very far behind the times. Since then, however, stock has greatly improved, and now very fine cattle of the pure breeds are to be found in Lower Canada. Amongst the chief prize takers for Durham Cattle we find the names of R. N. Watts, Drummondville; Edmund Longley, Shefford; C. S. Baker, Dunham; B. F. Knights, Stanstead; Lord Aylmer, Malbourne; A. O. Kellum, Compton. For Ayrshires, T. Dawes & Son, Lachine; John Gibb, St. Colomb; James Logan, Montreal; Wm. Ashton, Shefford; John Dods, Petite Cote; Robert Waters, St. Colomb. For Herefords, L. K. Benton, Stanstead; Rufus Kimpton, Roxton; John McLary, Compton; P. Fallon, Lachine. For Devons, A. Sanborn, Roxton; Allan Lothrop, Dudswell; E. Longley, Shefford; P. Fallon, Lachine; John Wood, Roxton. For Horses, James Logan, Montreal; John Wiseman, St. Laurent; Godfrey Blais, St. Pierre; Robt. Elliot, Montreal; Michael Scullim, St. Foye; Alex. Hassock, Petite Riviere; John Dods, Petite Cote; Wm. Crawford, Petite Riviere; Robert Cassells, Ste. Foye; Thos. Walker, St. Sylvestre; Wm. Bennett, Montreal. For Implements, F. Bourassa, St. Jean; James Patterson, Montreal; James Jeffrey, Petite Cote, Montreal; Wm. Evans, Montreal; M. Moody, Terrebonne; Mars Tremblay, Charlesbourg. We have not space to refer to the other departments. The number of competitors in the various classes does not seem to have been very great.

COUNTY SHOWS—UPPER CANADA.

Essex.—Held at Amherstburgh, on the 16th and 17th October. The *Sandwich Maple Leaf* says:—

"The display of articles exhibited was exceedingly creditable to the agricultural progress of the County. The weather was very favorable, and there was a respectable turn out from various parts of the County.

The Fruit and Vegetable Department presented the best appearance, and, certainly, Essex may well lay claim to a high rank in the Province for the raising of those valuable productions; the show of them would do credit to any Provincial or National exhibition, and would at the same time show the striking fertility of our land and salubrity of the climate.

There were also some excellent parcels of Butter and Cheese shown, which we feel satisfied cannot be excelled in the Province.

We consider the samples of Grain offered for exhibition were unsurpassed in Canada; the Wheat, particularly, was of a very choice and even quality, and, from the regularity, color, and preparation of the different lots, the Judges had

a difficult task to give a correct award. The samples of Ba ley, Oats and Indian Corn exhibited, were also of a very superior quality, and will do much to maintain and increase the celebrity of our district, as unrivalled for the growth of all descriptions of Grain.

The show of Sheep was excellent, and surpassed the Michigan State Show in this respect—those offered by Mr. Shepherd and Mr. Wingfield deserves particular mention.

SOUTH WELLINGTON.—Held at Guelph, on Friday, September 28th. The show was not quite so large as it has been on some former occasions, but there was no falling off in quality. The neighborhood of Guelph may be considered as the head quarters of the Short Horn breed of cattle in Upper Canada. Here Messrs. Wingfield, Howitt, Fergusson, Stone, &c., commenced their herds, and from hence they have been distributed all over the Province. Amongst the principal exhibitors on this occasion we notice the names of Messrs. Stone, Taylor, Iles, Hogge, Hodgskin, Hughes, Harland, Armstrong, Jackson. Of Leicester and Gotswoold Sheep, for which this locality is nearly as much noted as for its Durham Cattle, the principal exhibitors were Messrs. J. Parkinson, J. Kirby, L. Parkinson, John Coulter, W. Whitelaw, F. W. Stone, E. McDonald, &c. Grain, roots, &c., which are cultivated to great perfection around Guelph, were well represented, as well as implements and some other domestic products.

HALDIMAND—Held at Cayuga on October 2nd. The exhibition was successful, particularly in Sheep, in which the show was better than on any previous occasion, both as to numbers and quality, and presented the novel feature for this County of one or two pens of Merinos belonging to Mr. Henry Shaw, of Rainham. Among the exhibitors in the Long Wool class were Messrs. Martindale, McEwen, Petch, Blanchard, Kellem, all of whose stock was much admired.

PERTH—Held at Stratford, Oct. 4. The *Stratford Examiner* says:—

In point of attendance and the number of entries, it surpassed any previous exhibition. Some remarkably fine horses were shown, and the cattle, although not numerous, were generally of a superior appearance. Of sheep there was a very fine display, but there were very few hogs. The display of implements was almost entirely confined to a few waggons and ploughs, straw cutters, &c. The first and second prizes for ploughs were carried away by Messrs Gray of Stratford, and Modeland of Inkerman. Both of these ploughs were made out of the county. Mr. Wm. Robertson of Stratford, showed ploughs entirely of his own manufacture, which were very highly spoken of by competent judges.

In domestic goods, fruits and vegetables the show was much larger than usual. There were quite a number of entries in butter, and the samples shown could hardly be surpassed anywhere in the Province. There were about half a dozen cheese, but with one exception they were poor in quality and poorly made.

NORTH YORK—Held in Newmarket on the 9th

and 10th October. There was a creditable display of stock, &c, there being over 600 entries. Amongst the exhibitors of horses, cattle, &c, were J. Nixon, B. Jenkins, J. Parsons, J. Playter, Dr. E. Morton, Thos. Atkins, G. L. Pearson, Col. Beresford, &c.

EAST DURHAM.—This was held in conjunction with Hope Township Society at Port Hope, on Wednesday, October 3. There was a good show of stock and other articles. The *Port Hope Guide* says:—

The show of horses was better than last year. The number on the ground was larger and they seemed of a superior class. There were some fine bro d mares and foals in the Agricultural class; John Beatty took the first prize, and Joseph Peart the second. The 2 years old colts were promising: and the same may be said of the yearlings.

The show of cattle was very creditable indeed. The principal exhibitors in Durhams were Messrs. J. & R. Wade, Mr. John Foott, and Mr. S. Dickinson. In Devons, Mr. N. Choate had the whole field to himself. In Grades the competition was lively; and we noticed that in this class the number of exhibitors had largely increased. There were representatives of the herd of Messrs. James Gray, John Beatty, A. Choate, John Robb, John Vanslone, Asa Rider, J. & R. Wade, W. Hatch, &c.

There was a fine display of sheep this year. The competition was confined principally to: Messrs J. Foott, S. Dickenson, James Martin, J. & R. Wade, John Vanstone, Joseph Simmons; W. Hatch, William Guy, T. Tindall, and Michael Sisson of Manvers. In fine wool sheep, Messrs. A. & N. Choate were alone.

It is very encouraging to observe that the exhibitors of sheep are increasing every year. It was formerly a matter of complaint that a few persons carried off all the prizes. Of course this could not be otherwise so long as those few persons were the only ones who thought it worth while to breed and show good stock.

The show of grain, roots, vegetables, dairy products, &c., was superior, and that of manufactures and domestic products respectable.

EAST BRANT.—Held at Paris, on 27th September. A very successful turn-out. Amongst the exhibitors of horses were M. Folsater, J. Ferris, L. Sovereign, L. Moffatt, &c, of Durham. Attle, C. Taylor, D. Buchan, J. Good, S. Moffatt; of Devons, D. Tye, J. Martin; of Ayrshires and Galloways, G. Stanton, J. Randall, J. Roddick; of sheep, A. Kyle, P. Marshall, W. L. Ewing, J. Dickie, J. Lowes, &c. Besides these classes there was a large and excellent display in the classes of pigs, poultry, grain, roots, vegetables, fruits, plants and flowers, dairy products, carriages, implements, harness, leather, domestic manufactures, iron and stone ware, &c.

FRENCH AND CITY OF KINGSTON—This was a union exhibition of the County and the City Electoral Division Societies, held on the 26th and 27th Sept., in the Crystal Palace, on the Provincial Exhibition Grounds, Kingston. There was an extensive list of prizes awarded for horses,

cattle, sheep, hogs, poultry, Agricultural and Horticultural products, ladies' work, implements, fine arts, manufactures, &c., &c. The exhibition was well attended and seems to have been entirely successful. It closed with a series of rustic and athletic games and amusements.

WEST MIDDLES X. Held at Strathtroy, on Tuesday, Oct 2nd. The show was more successful than any previously held, and of a highly creditable description for a new society, and a portion of the County where all the townships are comparatively new. The cattle appear to have been the leading feature of the show. The *Free Press* says:—

"The Township Society of Caradoc exhibited an imported Durham bull, three years old, which was greatly admired, and obtained a prize.

The grade cattle were of the best description, and some of them looked better, and were considered to be of equal value to some of the thorough-breds that were on the ground.

Mr. Buttery, of Metcalfe, exhibited a herd of twenty-one grade cattle, among which were two bulls which were much thought of. Mr. Pincombe, of Lobo, showed 21 Devons and grades, the former from the well known stock of Mr. Locke, of Yarmouth, and some from Mr. Tye's stock, of Wilmo'. Mr. Jacob Beer, of Metcalfe, had a small herd of seven, and a yoke of capital working oxen. F. Arriss, of Metcalfe, brought a fine milch cow, which was much admired. The Secretary, Mr. Keefer, had on show a fine bull, calf, and heifer which attracted considerable attention. A good selection of bulls, young and aged, were also on the ground, but the names of the owners did not reach us. Respecting the cattle, it may be remarked that upon this occasion, the quality rather than the quantity appears to have been aimed at. This year there happily exists no occasion to force cattle on the attention of buyers, and it was generally remarked that the absence of quantity was a sign favourable to the country, while the quality made amends for any deficiency that a superficial observer might detect in quantity.

WEST BRANT.—Held at Brantford on 25th September. We extract the following from the general report in the *Brantford Courier*:—The show, though nothing much to boast of in point of numbers and quantities of the several animals and articles displayed, was in quality superior to any preceding show of the West Riding. The total number of entries was 941.

The show of horses was very large, numbering some 178 entries, and was considered, by competent judges, to be superior to the show at the Provincial Exhibition at Hamilton. While the cattle, in point of good breeding and appearance, could not be surpassed at a County Show, we were disappointed at seeing so few on the ground, the total number of entries in this class being only 65. There were, however, some fine animals shewn.

Of sheep there were 112 entries, and, as usual, the county has maintained its reputation for superior wool and mutton. Though not many were exhibited yet the pigs were worthy of admiration—finer animals we never did see. We

regretted to find a lack of agricultural implements. Mr. G. H. Wilkes had his threshing machine on the ground, and Messrs Wisner and Wilcox shewed one of their very superior and far famed fanning mills. Messrs. Cullver and Lyons exhibited some very fine carriages. In grain there was a good deal of competition, and the varieties were, as is generally the case everywhere this season, very good. The root and vegetable department was liberally supplied with all kinds, of mammoth growths.

Of apples there were no less than 97 entries, among which the best were some fine varieties. The collection of Mr. G. Pike comprised the largest and finest that ever came under our observation. In dairy products the show was deficient. There were few entries. The butter was pretty good much of it rather salt however. There was a good deal of honey shown, and some fine samples they were.

We had almost omitted to notice the very fine display of flowers made by Mr. Thomas Racey of Mount Pleasant, and Mrs. Veal of Brantford. But for them, in the floral department, the exhibition would have been wanting. They had an endless variety of flowers, and a beautiful and mammoth floral ornament—the handiwork of Mrs. Thos. Racey.

TOWNSHIP SHOWS—UPPER CANADA.

WHITCHURCH.—Held at Hacking's Corners, October 18. Although the day was rather unfavourable, the attendance was large, and a good deal of interest manifested. The various classes of stock and grain was well represented,—while the display in the Ladies Department was the best of any we have seen the present season. In implements and manufactures (other than Ladies' work,) the exhibition was rather a failure—there being but few entries.

GEORGINA AND NORTH GWILLIMBURY.—Held at Sutton, Georgina, October 12, 163 entries.

GUELPH.—Held at Guelph, October 3. This is one of the oldest and most spirited of our Township Societies. The *Guelph Herald* says of the show:

"There was an admirable turn out in the class of brood mares, while the young stock gave promise of continued improvement. The work and carriage horses attracted much attention, several spans being of a quality it would be difficult to beat in this section of country. The Durhams shown by Mr. Stone, Mr. Hogskin and Mr. Hogge were much and justly admired, while not a few of the grade cattle were evidently little inferior to the thorough breds. There were not many sheep in the pens, but excellent specimens of both Cotswolds and Leicesters were exhibited—the former appear to be now the favourite breed in this quarter. There were several pigs of portly dimensions, but none appeared to attract more attention than Rev. Mr. Clarke's 14 weeks' Suffolks. There was quite a collection of Agricultural implements and vehicles, including churns and washing machines.

The Spring Wheat was the best we have seen for years, the barley was also good, but the oats,

with one or two exceptions, nothing to boast of. There was a good display of roots; the principal premiums falling, as usual, to garden-grown specimens; Messrs. Baker, Hubbard, and Benham showed excellent samples in this class. There was a good show of dairy produce, and Mr. T. Bolton's success in carrying off the first premium in both sweet and salt butter was highly creditable to the management of his dairy. There were more samples of woolen and other domestic manufactures than are usually seen at Township Shows, and the improvement in this class, although not attracting equal attention, is not less manifest than in the different descriptions of live stock. They were in all 346 entries."

ERAMOSA.—At the "Four Corners," on Friday, October 5. "There were somewhat fewer entries of stock for competition than at last Show, but there was no deterioration in the quality of the animals shown. There were some fine young horses shown. Mr. L. Parkinson, as usual, took the largest number of prizes for sheep, but the difference betwixt the stock of the leading sheep breeders and others is not so apparent, now that all have made very evident progress, as it was some six or eight years since. There were many samples of grain on exhibition, and the quality, generally, superior. Eramosa has long been famous for its dairy produce, and there was no falling off on the present occasion. The roots and vegetables were of seemly proportions. Several of the agricultural implements exhibited were noticed approvingly by the Judges, especially a fanning mill from the workshop of Mr. James Mays, Guelph."

NICHOL.—Fergus, October 5. The show of stock was somewhat inferior to former years, while that of produce was about equal to preceding exhibitions.

MALAHIDE.—Held at Aylmer, on Tuesday, October 16. The competition in stock was not very great, and the quality of the stock not superior, the prizes offered being small. There was a very good show in grain, and in many samples the quality was excellent. The display of vegetables and apples could scarcely be surpassed; not that the quantity was so very great, but the quality was very fine.

"The display of butter," the *Free Press* says, "was truly magnificent, both in quantity and quality, and we are of the opinion that the ladies of Malahide excel in the art of making butter."

Besides these products there was a good variety of woolen fabrics, manufactures of leather, implements, &c.

MOSE.—Held on Friday, October 12. Like some other Township Shows, it was not so good in the essential points as heretofore, showing that there is need of wider organizations, able to offer larger prizes, and to afford greater attractions, in order to bring out the full strength of the country.

NOTTAWASAGA.—The fifth annual exhibition of this Society took place at Bowmore on Wednesday, the 3rd of October. The display of horses, cattle, grain, implements of husbandry, &c., &c.,

was good and far superior to any exhibited on former occasions. A much greater desire was evident on the part of the various competitors to excel in what was brought forward.

KING.—Held at Loskey, 16th October. There were 660 entries, and the show was considered a decided success. In stock, as a whole, the show exhibited a marked improvement over last year in point of superiority—particularly in horses and sheep. In the class of saddle horses, there were 25 entries. The show of sheep was very creditable, giving abundant evidence of the care and attention at present bestowed by the farmers of King to this class of stock. In grain and roots and garden products also there was a good display, the samples being bright and clean. There was also a fair display of implements, consisting of root and straw cutters, horse rakes, harrows, ploughs, double waggons, fanning mills, &c. Mr. Leigh and Messrs. Reditt and Scott, and Messrs. Patterson Bros., Richmond Hill; A. C. Weed & Co., of Willowdale; and L. Crossley of King, were the principal exhibitors of implements.

YORK TOWNSHIP.—At Yorkville, Tuesday, October 9th. This was one of the most satisfactory township shows of the season. There were about a thousand entries. All the principal breeds of cattle, sheep, &c., were well represented, as were the products of the field, the workshop, and the domestic circle. Amongst the exhibitors were J. Crawford, Scarborough; R. Ibson, Malton; James Powell, Wm Baldwin, Geo. Cooper, John D. W. Norman McLeod, E. W. Thomson, York Township; E. Musson, Jno. Moore, T. Smith, Etobicoke; and many other well known agriculturists of the surrounding country.

BLANSHARD.—Held at St. Mary's, County Perth, on Monday, October 8th. At this show there was a fair display of live stock, grain, roots, implements, domestic products, &c., and what was especially interesting in a comparatively new settlement, very fine specimens of fruit, consisting of pears, apples, grapes, &c., and superior cheese and butter.

MITCHELL.—Held at the Village of Mitchell, October 3rd. Not considered so successful as last year. There is, however, a very respectable list of prizes awarded for stock, products and manufactures of the various descriptions.

HORTICULTURAL SHOWS.

The Horticultural Shows of the season were numerous and well attended. We have not space to more than merely enumerate the following, all of which were more or less interesting and important, viz: Guelph, Kingston, St. Catharines, Cobourg, Hamilton, Toronto."

PLOUGHING MATCHES.

These interesting and useful trials of skill were numerous and well attended the past autumn. Amongst the most important, from the prizes offered, the number of competitors and spectators, were those near Kingston, in Etobi-

eoke, York, and Markham Townships. Amongst the others of which we have reports are those of Nichol, London, Middlesex, Westminster, Adelaide, Eramosa, Guelph, Wellington County, Puslinch, Haldimand County, &c. The Kingston *Whig* thus speaks of the match in the County of Frontenac, by which it will be seen that a great improvement has taken place within a few years in this important art in that quarter:—This was a great Ploughing Match indeed, the largest, the greatest and best that ever came off in these United Counties. Nearly fifty teams were entered, and the whole came to work with one accord and one good will to win a prize. The ground had been laid out on the previous day, and by half-past nine in the day, all the ploughs were in action, but it was past two in the afternoon ere all had finished. The ploughing was really excellent, so judged by the best agriculturalist from the counties nigh at hand, and some of it pronounced to be the best ever done in Canada. Nearly every ploughman had an iron plough of the newest construction. The appointed Judges had an arduous task to perform, and it was quite dark before their duty was performed.

It must be gratifying to the citizens of Kingston to learn, that the largest proportion of the above sixteen prizes were won by those using the ploughs manufactured by their fellow-townsmen, Mr Edward Wilmo of Princess street, Kingston, to whom great praise is due for the excellence to which he has arrived in producing Agricultural Iron Implements; the sett of prize harrows being also of his manufacture."

Correspondence.

The Provincial Exhibition.

MR. EDITOR,—Through your paper I wish to say a few things to all whom it may concern. I learn both from this journal, and otherwise, that the manner in which the Provincial Agricultural Shows are managed is not free from objection, as is manifested by the many complaints made by the exhibitors at the late show in Hamilton.

Let us look at some of the causes of complaint as found in the prize list and decision of the judges. In the prize list under class 49, the prize for the best assortment of edge tools was \$12, while the first prize for the best collection of stuffed birds is \$40, and the same prize for the best collection of live fish; and under class 52 we find a prize of \$25, and a silver medal awarded, for the best collection of musical instruments. Now it appears to me and to others, that the prizes were not as wisely distributed as they might have been. Should not the largest prizes be given to the article that is the likeliest to accomplish the greatest amount of good to our country. Now, which is of the greatest importance, Jacob Binkley's live fish, a case of stuffed birds, or even a fine collection of musical instruments, all of which are very fine, and useful in their place, or a manufactory for edge

tools? The latter all will say. Why, then, give to one of the greatest importance the small sum of \$12, while you give the sum of \$40 as a prize to that which can do one any good, except the parties who may happen to have good supply of live fish, or of dead birds.

In respect to the judges, there is a great dissatisfaction in very many things, and, no doubt, much of it without any good reason. For instance, in regard to the ploughs. Say some, how could they tell which was the best? They did not try any of them. True, and how, and when, could they try all the ploughs that were on the show ground?

I heard complaints against the judges on *Roots*. I think myself, the judges differed in their judgment from former judges; but they have a right to do so. The supposed ground for complaint is this: prizes were awarded to the longest roots, some of which were ill-shaped, with sprangly roots, but, on the whole, the heaviest samples. And I don't know but this is right. As long as the *turnip*, or *mangel wurzel*, is sound, what of it, if it should not be smooth? I do not know, but it would be just as fair for all parties, that the prize should be given to the twenty kinds of Carrots weighing the heaviest, and the same with *mangel wurzels* and *turnips*; for certainly, where the most weight is there the most food is; and, moreover, the higher you enrich your land the rougher will be their roots.

I do not agree with the opinion of the judges on fine-wooled sheep, and much less with the decision of the Board in reference to the cross between *Merino* and *Leicester* sheep.

Why give prizes to grades of any kind if not to all? And why to the female animal rather than to the male? And in regard to the cross here referred to, it is declared by some of the first class manufacturers of the Province to be the best stock of sheep for Canada, taking into account both the carcass and the wool, such sheep yielding a good weight and a quality of each.

But in order to satisfy all your readers on this subject, I invite all our Canadian manufacturers to send in their views in reference to their observations and convictions in this matter, as it may tend to guide parties hereafter in the choice of a flock.

Will you not, Mr. Editor, send each manufacturer a copy, or rather a number of the *Agriculturist*, with this request in it? S. KING.

Ryckman's Corners, Dec. 10, 1860.

[In reference to the above communication, we will merely observe at present that the prizes offered this year at the Provincial Exhibition for special collections of prepared furs of wild animals of Canada, of stuffed birds and animals, of Canadian woods, minerals, &c., are not ordinarily in the list. The object of the Board of Arts and Manufactures, to whom the revision and prepara-

tion of this portion of the Prize list was committed, in offering these prizes, was, as we understand it, on the special occasion of the visit of the Prince of Wales and suite, together with many distinguished and observing strangers, to supplement the extensive display of the domestic animals, of the agricultural and horticultural products, and manufactures of the country, by such exhibitions of its natural products, as would enable an intelligent stranger to observe at a glance as complete a representation as possible of its entire resources and products, natural and artificial. To accumulate and transport a good collection of natural products, might involve a much greater expense for the special occasion, than to exhibit a collection of manufactured goods; and the exhibitor of the natural products would not have the same interest in an advertising point of view as the other. This we dare say was the motive of the Board of Arts in making the prizes referred to as large as they were. On general principles we agree with much that our correspondent advances. In regard to prizes for male and female cross-bred animals, our correspondent will find that not many who have studied the theory and art of breeding will concur with him. On this point we may refer to an able letter on the "Principles of Breeding," under the signature W. A. C., in our last number.—Eds.]

Township Agricultural Societies.

EDITOR OF AGRICULTURIST:—It appears that my remarks published in the *Agriculturist*, of Sept. 1st, on a paragraph in the report of the Dundas County Agricultural Society have been displeasing to one of the directors. In writing that article I had no other motive than that of pointing out the impropriety and injustice of the measure recommended in their report; and thus draw the attention of members of Township Societies, and that of the public thereto. In doing so, my object was not to criticise the whole of that historical report, or to notice in a particular manner, the importance of that which is evident to all, "the introduction of good stock." I simply endeavoured to draw attention to that part of it, which in my opinion contained evil counsel.

I should be sorry to see the *Agriculturist* the medium of personal bickerings, and will only say in reference to a charge made against me, that the party who made that charge was labouring under a wrong impression; that instead of affecting to "sneer at literary and scientific improvement," I only deprecated the plan of the Dundas directors, as being unsuitable, and too contracted for diffusing a taste for those civil-

ing and humanizing pursuits; and will take the least notice possible of the sneers with which the Dundas epistle is so profusely embellished.

Had the directors of the Dundas County Society recommended the general withdrawal of the legislative grant in their report, as "One of 'em" has subsequently done, there would have been no injustice, or selfishness in the recommendation; but that proposal of his comes now with a bad grace, after expressing a wish that county societies should have the whole of the legislative "plunder." It is unnecessary for me to express an opinion as to the propriety or impropriety of the withdrawal of the government grant; but I would, if I did not trespass too much on the pages of the *Agriculturist*, endeavour to show that the alteration recommended in the aforesaid report, would retard the accelerating progress of agricultural and mechanical improvement.

The scheme of giving premiums for the best cultivated farm, or the best acre or acres of grain, roots, &c., is not new; it is in operation in many places, independent of agricultural societies, or of legislative grants; and it is evident that the incentive to action must be something more than the amount of premium to be obtained. The man is to be pitied who has no higher aspirations than the gaining of a premium, even though it be "liberal."

It is possible that agricultural societies may do good by importing stock, if the business is judiciously managed; but it is questionable whether they are the best agents for importing and owning good stock. Valuable stock require great care; and where the interest of the owners in such stock is of that nature which the members and officers of a society will naturally feel, the animals will hardly receive that care and attention which they would if they were private property; and it is difficult to perceive how a county society could with propriety "adequately reward the farmer who incurs the risk" of importing good stock.

No one will suppose that that esteemed gentleman, and successful importer and breeder, F. Stone, Esq., of Guelph, has ever received, or expects to receive "adequate reward" for his exertions and risk in this particular from any society. The many premiums which he and others in that part of the county of Wellington receive will hardly cover the expenses of careful conveyance, and attendance on their stock to and from the places of exhibition, consequently the motives of action in such gentlemen must be something of a higher nature than the expectation of receiving "liberal premiums." It would be a very interesting and useful subject of enquiry for the Dundas directors to ascertain what such motives are.

Being informed that they are open to conviction, I will endeavour to show that if county societies had the whole of the "plunder" at their disposal, a very large majority of the farmers of large counties would be deprived of the

benefits which they now in some measure enjoy, through the medium of township societies. Let us take this neighborhood for example. On the south-east is the county of Wellington; on the north-west, the county of Grey; from Mount Forest to either county town where the annual shows are held, and where they are very likely to be held, is upwards of 40 miles; and there are members of township societies in this locality, who, were they members of either of the above county societies, would have to travel a few miles more to attend the county societies. And although the places of exhibition are not situated at the "extremity" of the respective counties, few beside a Dundas county director would consider either of these beautiful counties or both united, to be "almost a continent." But the Dundas gentleman "One of 'em" says, in effect, give us (the county society officers) the sole management of the funds, and we will annihilate distance; we will lay down agricultural benefits and blessings within "40 yards of every member's door," even though he resides 40 miles from the fountain of those blessings, the county directory; and in addition to this he will have the inestimable advantage of our college, (perambulatory of course) and of our learned professors, who have the wonderful faculty of sowing broad cast "literary and scientific" knowledge over the whole county; pardon this slip, Mr. Editor, I was going to say that the residents of such places as those I have mentioned, as an example, would be injured by the dissolution of township agricultural societies; not so much by being deprived of premiums, as from the removal of that higher stimulus to action, a laudable desire to excel.

It is not probable, nay it is not possible, that the farmers of a part of the country recently settled, such as this is, with undrained fields, thickly studded with undecayed stumps, which are an effectual preventive to good cultivation and the use of improved implements, with insufficient and incomplete buildings, with many miles of bad roads, and generally with inferior stock, can compete successfully with farmers who live in older settlements, who have few, or more of those evils to contend with, and who are in possession of all those things which early settlers stand in need of. No matter whether the competition be in respect of stock, produce, or cultivation, the farmers of the older settlements, if they avail themselves of their advantageous position, cannot fail to be the successful competitors.

The circumstances of those who live in remote localities, or in new settlements, being so dissimilar, and so much less advantageous, compared with those of older settlements, their local institutions for the improvement of agriculture, or of anything else, should be suitable to their circumstances, such as are best adapted to meet their wants. County societies may suit the one class, but it is very evident that township societies are more useful to the other.

In this part of the country there are no premiums given for "wheelbarrows, old carts, or rickety rollers," and if the township societies of Dundas give prizes for such things, they would do well to amend their premium list. Yet I can see no impropriety in encouraging mechanical genius and improvement; good wheel carriages must be constructed on scientific principles, and as a good new cart, well balanced, and of easy draught, or an improved roller is quite as beneficial and useful to the working farmer as a buggy, they should not be despised; and I do not think that awarding a prize for any decided improvement or superior workmanship in such articles, would be "squandering the public money."

In some other counties, as well as Dundas, there are a few *leading* men who generally take the principal prizes at the shows,—residents of townships contiguous to the place of the county exhibition, who are inclined to amalgamate in some manner, township societies with those of the county; this may suit their purpose, but it would be injurious to others. The competition would not thereby be enlarged, inasmuch as the society would consist chiefly of the farmers and mechanics of the immediate vicinity of the place of exhibition, those more distant feeling little or no interest therein. They, the pioneers in agriculture, would be placed somewhat analogously to the light division of the army, who generally occupy the advanced position, who do the hard fighting, weaken the opposing forces, and clear the way for the grenadiers and Highlanders to step forward and receive the honours.

Near Mount Forest.

C.

Agricultural Intelligence.

MULCHING WHEAT.—Dr. C. Harlan, of Wilmington, Del., advocates mulching wheat. One way of doing this is to sow buckwheat with the wheat in the fall. He says the buckwheat "will often grow two feet high before the frost kills it. It will catch the driving snows, and prevent the winds from sweeping the earth away from the tender roots. It will prevent the frosts from throwing out the crop; and when the Spring returns, it will rot down, and assist to nourish the young plant when it most needs it. This application of buckwheat, is not an untried experiment. It was followed, and strongly recommended, nearly 20 years ago, by Jas. Gaskins, who published a valuable little work in defence of this practice."

COLOR OF CALVES.—I have often heard people assert that the color of the calf is not owing to the color of the cow or bull, but to the color of the object which may first catch the cow's attention after being served. Now, if a person had a bull of an objectionable color, they could

easily get calves of any color they wanted by getting the cow served without seeing the bull, and branding an animal of the color wanted before her. A. H. C. [You raise a question in physiology on which much has been written. The general belief among breeders of stock is that the color descends by the sire's side—frequently not the color of the sire, but of one or other of his progenitors. There is much difference of opinion even amongst Shorthorn breeders as to the influence which the sire exercises on the color of his progeny. There can be little question that the color of calves and foals has been directly influenced by the color of an animal which arrested the attention of one or both—the sire or dam—at the time of copulation.]—*North British Agriculturist*.

CIDER MAKING IN CONNECTICUT.—According to the *New Haven Journal*, a very large business is carried on in cider making near that city, one town alone, (Cheshire) manufacturing 8,000 barrels for market. It is first clarified, and then sold in the spring for bottling, at about one shilling per gallon. It is, when clarified, as pure as wine, and is, when bottled, in great demand at the South at \$5 per dozen. The *Journal* adds: "The fruit-growers of Connecticut can cultivate the apple with but little expense, and can realize at least 20 cents a bushel for all they can raise. The past season those who have mills at Cheshire have paid from 18 to 20 cents per bushel for all they could find, taking them from the orchards where they had been collected, the raiser being subjected to no expense except that of picking and piling in heaps."

RAIN WATER NOT ABSORBED BY LEAVES.—It has always been thought that the rain water which falls upon the leaves and stems of vegetables is gradually absorbed, and nourishes the plant. It appears, however, that this opinion is merely instinctive, and when tested by careful experiment, it proves unfounded, as is shown by a small paper lately published by M. Duchartre. For four years this author has endeavoured to discover, by direct experiment, whether or no such absorption takes place. The plants submitted to these experiments were in pots, their stems and leaves being exposed to the rain, whilst the roots were prevented from absorbing any moisture, being hermetically closed up in the pot. All the plants submitted to this kind of investigation, gave similar results; after remaining exposed to the rain, sometimes for eighteen consecutive hours, they showed no increase in weight; indeed, in some cases, they appeared to have experienced a slight diminution.—*London Photographic News*.

SALT FOR FENCE POSTS.—A correspondent of the *N. H. Journal of Agriculture* set some white oak posts, about twelve inches square, thirty years ago, and on examining them the other day he found them all sound. After set-

ting, he bored into each post, about three inches above the ground, with a two-inch augur, at an angle of 45°, and filled the hole with salt and plugged it up. It took about half a pint of salt to each post. The plugs are yet in, and the posts look as sound as when set. He tried none without salt.

CINDERS FOR PIGS.—J. J. Mechi, of Tiptree Hall, England, has been publishing his experience for fattening swine, and, among other things, he has learned the fact "that pigs are very fond of coal ashes or cinders, and that you can hardly fat pigs properly on boarded floors, without giving them a moderate supply daily, or occasionally." He says:—"In the absence of coal ashes, burned clay or brick dust is a good substitute. If you do not supply ashes they will know or eat the brick walls of their sheds. I leave to science to explain the cause of this want. It is notorious that coal-dealers, where pigs have access to the coals, are generally successful pig-feeders. Those who find that their pigs, when shut up, do not progress favorably, will do well to try this plan; a neighbor of mine found that a score of fat pigs consumed quite a basket of burned clay ashes daily. We know that there is abundance of alkali in ashes."

FATTENING HOGS—FERMENTATION OF FOOD. Now is the time to give attention to the important matter of fattening swine, that is, critical attention,—so as to learn the comparative value between cooked and uncooked food, and between food that is fermented and food in which that process has, in some degree, not taken place. The following we find in the *Rural New Yorker*: Among the many of your contributors, I would ask for information concerning fattening hogs. I have farmed it for thirty years, and when I commenced I adopted the plan of keeping swill barrels and saving all the surplus water of the kitchen, with the milk and whey, and mixing some kind of meal or middlings with it, then let it go through the process of fermentation, after which I fed it to the hogs. I supposed I was doing things about right, until last week, when travelling on the cars, I got into conversation with an intelligent appearing gentleman, who said this process was all wrong—that the fermentation destroyed most of the fattening properties of the grain. He also said that making meal into pudding would not fatten as fast as dry meal. Now, I would enquire of your readers whether these things are so.

AGRICULTURAL METEOROLOGY.—The Smithsonian Institution is preparing, by order of Congress, a most interesting report on agricultural meteorology, which will be a welcome boon to our farmers. Besides meteorological statistics, collected during the last ten years at nearly four hundred stations, it will contain the arrival and departure of birds, fishes, and other migratory animals, and also the time of planting and harvesting of crops, etc., at different parts of the United States.

TOP-DRESSING.—A correspondent of the *Farmer and Gardener*, contends that the beneficial effects of top-dressing applied in the fall are owing to its action as a mulch, rather than as a manure—that it *protects* rather than *enriches*.

DEAD HORSES.—From two to three hundred horses are supposed to die in this city every week, and the average value of the carcass is about \$10, yielding about 1½ lbs. of hair for cloth, about 30 lbs. of hide, 6 lbs. of hoofs and tendons for glue and buttons, 160 lbs. bone, made into snuff-boxes, knife-handles, phosphorus and superphosphate of lime, and 60 lbs. of blood, yielding prussiate of potash. In addition, it is suspected that a portion of the meat finds its way into our markets, that the baked heart and liver season a good deal of coffee; and that the intestines are used as skins for sausages. Nevertheless, our city pays a large sum annually for the removal of these valuable materials to Barren Island.—*N. Y. Sun.*

TANKS FOR LIQUID MANURE.—The tank should be built of solid masonry, either rubble or well burned brick laid in the best mortar, and well packed between the walls and bank and underneath with dry brick clay; the bottom should be flagged or laid with brick. If the soil is wet, it must be comparatively shallow, unless good drains be laid outside to intercept and carry off the water; if dry, the tank may be made comparatively deep; the shape must be governed by the site, and may be either round or oblong, more or less wide, and in length according to requirements. It should be arched overhead to keep out rain or other water. The capacity of a tank for 30 cows and 60 pigs depends on the periods it is intended to empty them; about a month is necessary for the contents to ferment and ripen. A tank to contain the quantity of urine voided by the above animals for one month should contain about 1,000 cubical feet, but to effect your object in the best manner there should be a system of at least three such tanks, viz., one ripening and using, one filled and ripening, the other filling.—*Irish Farmers' Gazette.*

APPLICATION OF GAS LIME.—At the meeting of the North Lancashire Agricultural Society, the application of gas lime was entered fully upon by several farmers present at a discussion on manures. Nearly all of those spoke highly of the benefits which had resulted from its application, when applied in small quantities under 4 tons per acre, and of its injurious effects when applied at the rate of 9 to 10 tons. The evidence of Mr. Baxter was most conclusive as to the benefits from gas lime to pasture lands and meadows. We may mention that we have seen lands which have been dressed with gas lime some years ago, and the crops were better than those in the surrounding farms, but whether this was the result of the application of gas lime, or whether the outlay on other manures had been greater, we did not ascertain—very probably, both causes were in operation.—*North British Agriculturist.*

AGRICULTURAL STATISTICS OF IRELAND.—It appears from the returns of the Registrar-General for 1860, that there is a decrease of green crops and potatoes this year of 28,949 acres; and it is evident that the difference between this number of acres and 35,000 acres—the estimated deficiency before alluded to, is to be found in the increased area under rape and vetches—7,290 acres—a considerable part of which has certainly been sown without the required manure. This deficiency of 35,000 acres—requiring to be manured—has caused a present loss of over £250,000 in our agricultural produce—a loss which will probably not soon be recovered, and the more to be regretted because the manuring of those 35,000 acres would have assisted much to lay the ground work for the future agricultural prosperity of the country.

The general tenement valuation of Ireland being under £12,000,000, it appears from the above figures that the country has sustained a loss of agricultural produce, in one year alone, exceeding one-sixth of that valuation. This may appear a somewhat startling statement, but it would be of use, if it should lead the agriculturists of Ireland to adopt a more improved system of husbandry, and to make better provision for the future.

The cultivated arable lands of Ireland exceed 15,000,000 acres; and on a careful examination, yield of agricultural produce about £43,000,000 value annually. But under a better system of green crop husbandry,—such a one as would satisfy a farmer that his farm was in a thriving condition, the same lands should yield from £75,000,000 to £80,000,000 value annually, or nearly double what they produce at present.

THE GALLOWAY BREED OF CATTLE.—In evidence of the longevity of this breed of cattle, we quote from the *North British Agriculturist*, a sketch of a cow, the property of the noted breeder, Hugh Watson, Esq., of Keilor, county of Forfar, Scotland, which died on the first of July, 1850, at the age of *thirty five years and six months*. "This old cow," says the account, "was the dam of twenty-five calves, all of whom were first-class animals of their breed, having also carried prizes at different competitions in Scotland, England and Ireland in the course of the last thirty years, and they and their progeny now spread over many countries and climes. The old cow retained her fine shape and rich mellow quality till she arrived at the mature age of twenty-eight years, when she gave up breeding or giving milk, but continued active and picked up her food along with the other cows of the herd, never having got anything beyond the common run of the farm-yard. She gradually fell off for the last two years, till she became a most striking picture of old age and infirmity, gave up gathering her food in the fields only two days, when an excellent photograph picture was taken by Mr. Jackson of Perth, and then she lay down and died, never before having been an hour ill,

such was her robust constitution and healthy habits. The Galloway is a hornless Scottish breed of great antiquity. The true Galloway of the present day is black. In herds and droves of them, sometimes comprising several hundreds, scarcely any deviation from this color has been observed. The shape is remarkably compact; the body presenting the appearance of a cylinder—so well balanced are the different parts, and so evenly is the flesh laid on. The skin is thick and mellow, and it is covered with long, wavy hair, which is mixed next the skin with that of a soft, woolly nature. Except the West Highlanders, there is probably no more hardy breed in the world. They are reared principally for beef, the quality of which is equal to any sent to the markets of Britain, except that of the West Highland and Shetland cattle.

AUTUMN APPLICATION OF MANURE.—If farm yard manure is to be applied in autumn it should be carted on the land, and immediately spread. It may lie so exposed for weeks. It is believed by the growers of potatoes that when the farm-yard manure is applied at this season there are fewer diseased tubers, with less liability to checks in the growth of the crop, than when this manure is applied at the period the potato sets are planted. Swedish turnips are also believed to grow more freely when the land is manured in autumn—a portion of portable manures being applied when the seed is sown.—*North British Agriculturist*.

REAPING BY MACHINES.—It appears from an enquiry instituted in the County of Haddington, that during the harvest of 1860 there were at work one hundred and sixty machines. The extent of crop cut by these was—

Wheat.....	3,531 $\frac{1}{2}$	acres.
Barley.....	1,940 $\frac{1}{2}$	“
Oats.....	2,200 $\frac{1}{4}$	“
Beans.....	117 $\frac{1}{2}$	“
	<hr/>	
	7,789 $\frac{3}{4}$	“

Such facts are generally interesting, and other counties might with advantage collect similar statistics as to machine reaping. There can be now no question that almost any kind of crop can be reaped in a more perfect manner by a well-constructed reaping machine than by hook or scythe.—*Id.*

HOW TO CURE BACON.—In answer to a question—“how to cure bacon by the mild process”—the *Irish Farmer's Gazette* gives the following directions:

Single off the hair, and scrape thoroughly clean; when cut up, rub the flesh side well with common salt, and pack the pieces on top of each other on a tray with a gutter round it to catch the brine; once every four or five days the salt should be changed, and the slitches moved, placing those on top at the bottom; five or six weeks of this treatment will suffice to cure the bacon, when it may be hung up to dry, first rubbing them over with coarse bran, or any sort of

sawdust except deal; if smoking be preferred hang in a chimney; if not, in a dry, airy part the kitchen not too near the fire. We are acquainted with the Limerick mercantile process the Wicklow is similar to that given above and practiced by farmers there.

Horticultural.

WINTER PROTECTION.—It is best not to cover raspberries, grape vines, etc., till winter is at hand, as they will ripen and harden better exposed till that period. Grape vines are of sufficiently protected if simply laying flat on ground—or at most, with an inch or two of straw. The same remark will apply to the raspberry and blackberry. Caution is needed in the use of straw around fruit trees, as it may encourage the depredations of mice. If covering the stems should not be closely tied about them, as the circulation of some air is best. Evergreen hedges placed about any tender trees, afford the best and safest protection. The thicker they are, or they form, the more complete will the covering be.—*Rural Affairs*.

APPLES.—There is scarcely an article of vegetable food more universally loved than the apple. Why every farmer in the nation has an apple-orchard where the trees will grow all, is one of the mysteries. Let every farm lay in from two to ten or more barrels, and will be to them the most economical investment in the whole range of culinarics. A raw mellow apple is digested in an hour and a half; while boiled cabbage requires five hours. The most healthful desert which can be placed on the table is a baked apple. If taken freely at breakfast with coarse bread and butter, without meat, flesh of any kind, it has an admirable effect on the general system, often removing constipation, correcting acidities, and cooling off febrile conditions, more effectually than the most approved medicines.

If families could be induced to substitute the apple—sound, ripe and luscious—for the pies, cakes, candies, and other sweetmeats with which their children are too often indiscreetly stuffed, there would be a diminution in the sum total of doctors' bills in a single year sufficient to lay a stock of this delicious fruit for a whole season.—*Hall's Journal of Health*.

Editorial Notices, &c.

TRANSACTIONS OF THE NEW YORK STATE AGRICULTURAL SOCIETY. VOL. 19. Albany, 1860.

We are again indebted to the courtesy of B. P. Johnson, Esq., the indefatigable and efficient Secretary, for another volume of the Transactions.

actions of the New York State Agricultural Society, for 1859. These volumes, which we are now in the habit of looking for annually with no ordinary interest, contain not only the history and progress of agriculture, and the yearly exhibition of *the Empire State*, but also a number of elaborate articles possessing a permanent value, and of extensive application. The present volume consists of 800 pages, clearly but closely printed, and contains a number of well executed illustrations. It reflects great credit on the industry and ability of the secretary and contributors, and equal honor on the Society,—whose law is progress—which it represents. The Report on the County of Onondaga, one of the best farming sections of the State, by the Hon. George Geddes, one of its most enlightened and enterprising farmers, is a most elaborate production, and would give a character to any of the more advanced European journals. The continuation of the account of Professors Lawes and Gilbert's experiments with different manures, will be found generally interesting and practically useful. An article on what have till recently been regarded as the barren sands of Long Island deserves a careful perusal; as does also one on a Dairy Farm, which is evidently the production of a thinking, practical man. There is likewise a paper containing much useful information on the *cattle disease*, which has occasioned such ruinous losses in Europe, and some alarm, and loss too, this side the Atlantic. We regret to learn that Dr. Fitch's illness has prevented him getting his sixth report on Entomology ready for this volume; but in his able paper on the *Curculio* will be found much that is new to most people, and practicable means of preventing, or at least mitigating its ravages. Mr. Tucker's report on European Agriculture is an able contribution. Upon a closer perusal of the Reports of the Agricultural Societies, which occupy a considerable space of this interesting and instructive volume, we shall no doubt be able to glean many things that will be acceptable and useful to our readers.

Agricultural Societies.

We beg to remind the officers and members of Agricultural Societies, that the annual meeting of Township Societies for the election of officers and directors for the ensuing year, the

adoption of a report for the past year, &c., must be held during the second week in January; and of County Societies during the third week of the same month. The Reports must contain a list of the names of the members of the society, a list of the premiums awarded, a statement of receipts and expenditure, and any such general remarks upon Agricultural, Horticultural and other interests of the township or county as the directors may be able to offer. The reports of the Township Societies must be delivered to the directors of the County Society in time for the annual meeting of the latter, and the reports of the County Societies, along with those of the townships, must be forwarded to the Board of Agriculture at Toronto, on or before the 1st of April.

A part of the business of the County Societies is, to nominate persons as members of the Board of Agriculture for Upper Canada, in lieu of those retiring by rotation. The gentlemen who so retire this year are, Hon. Adam Ferguson, Waterdown; Hon. David Christie, Brantford; Asa A. Bunham, Esq., Cobourg; Wm. Ferguson, Esq., Kingston. They are all, of course, eligible for re-election, as heretofore.

Our Next Volume.

The present number closes the volume of the *Agriculturist* for 1861. Our readers are generally aware that it is our practice to close our subscription books at the end of each year, and to send no numbers of the new volume till ordered. This is, therefore, the last number that the bulk of our subscribers will receive till they favor us with their orders anew. To those who remitted the full amount of the annual subscription after we were unable to supply all the back numbers, we shall continue to send sufficient numbers of the new volume to make up the deficiency. We shall also continue sending free copies to secretaries, or other officers of Agricultural Societies.

In regard to the conduct of the *Agriculturist* for the past year, we claim to have fulfilled the promise with which we commenced the volume, and to have furnished a paper abounding in interesting and valuable information, well adapted

to the wants of the agriculturists of the country. Published twice a month, each number consisting of thirty-two large pages, furnished at the low price of half a dollar per annum for single copies, and circulated *post free*, the *Agriculturist* can justly claim to be the cheapest publication of the kind on the continent, perhaps in the world. A mere glance at the Index to the volume, accompanying this number, will suffice to show what a large and varied amount of useful intelligence it has contained. And we are happy to say that our efforts have been appreciated by the farmers of the country, and that the paper attained during the year a much larger circulation than ever previously; so much larger, in fact, than we anticipated, that the edition with which we commenced the year was entirely exhausted before the first of April, and three times subsequently during the year we were obliged to increase the number of copies printed.

We much regret that for the last two or three months, owing to causes on the part of the contractor for printing the *Agriculturist*, it has been considerably behind the proper date of each number in reaching the subscribers. The printing has now, however, been given to another office, and the paper will, after the number of the 1st January, be issued punctually at the proper date of publication. We hope in the forthcoming volume to effect some further improvements in the general character of our journal, so as to render it still more deserving of the confidence and support of the farmers of the country.

We confidently appeal to the agriculturists of Upper Canada, and to others interested in the agricultural and cognate pursuits of the country, for a renewal and extension of the cordial support which they have given to the *Agriculturist* during the past year. It is their own paper, specially designed to supply the intelligence of which they are most in want, and with their liberal support—both in the way of subscriptions and contributions from their pens—we fully rely upon being able to render it so useful and interesting to them, that it will be considered indispensable by every intelligent farmer.

The terms of subscription will be the same as last year: Half a dollar per annum for single

copies; Eleven copies for Five Dollars; Twenty-two copies for Ten Dollars; Thirty-three copies for Fifteen Dollars, &c. Payment always in advance. As a further reduction in price on the largest orders, the following money premium will be paid on copies ordered and paid for prior to or on 1st April next, viz:—

To the officer of any Agricultural Society, member of a club, or other person who shall send in the largest list of subscribers, accompanied with the cash, on or before the 1st April next, a money prize will be paid of.....	\$2
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