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VOL. I.

HALIFAX, N. S., FEBRUARY, 1871.

No. 64.

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HALIFAX, Feb. 22nd. 1871.

We publish in the present number a farther instalment of the Annual Reports of our County and District Societies. These form the true index of Agricultural progress throughout the Province, and no one who has the welfare of the Province warmly at heart can regard them otherwise than with deep interest. From the County of Shelburne, the new Clyde River Society comes forward with its first Annual Report, announcing its successful establishment as one of the permanent institutions of the place. Improved implements, seed sowers, cultivators, garden and field seeds, and improved stock have been introduced. A County Exhibition is in progress, and more extensive importations of cattle, sheep and pigs are looked forward to. The Early Rose potato has shown its superiority over the ordinary sorts, yielding a large crop of sound tubers where the other kinds failed; Norway oats are favourably mentioned; but the Russian wheat proved a failure. Let us here remark that in

Hants the Russian has greatly improved during the second season, and therefore ought not to be at once discarded. It is proposed to convert some of the wastes of Shelburne into cranberry swamps, to introduce apples more extensively in broken land, and to cover the rocks with timber trees.—The Amherst Society held an Exhibition on 22nd October, the want of good horses, sheep and pigs is deplored, and it is proposed to take measures for supplying the deficiency. The Fenwick Society of Noel and Maitland distributed forty-five bushels of Fyfe wheat among its members, also a quantity of Black Sea wheat, a hundred pounds of Alyske clover seed; likewise sixty pounds weight of Norway oats, which yielded seventy bushels, a result not to be despised. The Fyfe wheat produced the best wheat crop seen along the shore for several years. The Society owns two Leicester Rams and two White Chester Boars, in addition to animals that have been sold to members and are still kept in the district.—The Middle

River Society in Victoria County, Cape Breton, is now twenty-six years old, and reports that the utmost harmony and cordiality still subsists; instead of the bone and muscle of its members being worn out by manual labour, the use of horse power and labour-saving implements has maintained their corporeal vigour, and given them time to attend the Society's meetings and opportunity for farther efforts in the way of improvement. This season two mowing machines have been purchased in addition to one previously in effective operation. The Alder, Bull and Leicester Rams have greatly improved the stock, and the quantity as well as quality of wool, which is now at least double of that previously produced from the same number of sheep. The pigs have been wonderfully improved by the mingling of Berkshire blood, and now yield double the quantity of pork at a far less cost of feeding. This season the Society has added to its stock a Chester Boar and a Boar and Sow of the Yorkshire breed, of those imported by the

Board from old Canada. Wheat does not succeed in the Middle River valley, but oats, barley and potatoes have all done remarkably well.—The Union Society of East Cornwallis is also an old Society. That it is a live one, will be obvious when we mention that the members have increased in numbers to eighty-nine, and that during the season the short-horn bull Lobo Lad was purchased from the Newport Society for \$100, and Bell Duke of Markham from the Board of Agriculture for \$305. A Society previously owned two other bulls, Sir William and the Yeoman, and has constantly kept several good thorough-bred bulls, it is not surprising that young stock of a very superior description is growing up in the district and arresting the attention of neighbouring farmers. The Fyfe wheat and Norway oats succeeded well. The Early Rose potato, it is thought, will prove worthy of cultivation, as also the Garnet Chili. Fruit was much damaged by the wind in September; from one-fourth to one-third of the entire crop was lost. The Society raised during the year \$425.50, exclusive of grant and earnings of animals, and expended a larger sum. From an interesting conversation had with the President, Leander Rand, Esq., we learn that potato novelties are exciting some attention, and, as the potato is a leading crop in Cornwallis, the Society will probably come to an early determination as to what course should be pursued with reference to the new varieties. This result, if made known, would be a safe guide to the rest of the Province. The Windsor Society held a Fair and Cattle Show on the 11th Oct., the attendance at which was better than for the seven previous years. A pair of working grade Durhams raised by Mr. John McHaffey, weighed at six years old, the one 2140 pounds, the other 2135 pounds. The young stock of two years old and under was very good, affording evidence of the benefits of recent importations. There were some fine pigs; grain was of excellent quality; and the roots shown were equal to any that had ever been produced in the Province. "In defiance of long winters and short seasons, well directed industry can obtain satisfactory returns from the soil of our Province." The Society purchased at the Richmond sale, the young short-horn

bull Orion for \$160.—The Yarmouth Township Society reports that the purchase of a full blood Ayrshire bull for \$80, absorbed all their funds; they have likewise a thorough-bred Alderney bull worth \$100.

During the last few years we have anxiously advocated the diffusion of agricultural literature among our farmers. The article is abundant and cheap, and will give good satisfaction wherever it is put to proper use. We know that the *American Agriculturist* is now extensively read, and that many Societies circulate among their members the *Canada Farmer*. For our Province, these form the cream of periodical agricultural literature. Some read the *Stock Journal*, some the *Maine Farmer*, some the *Colonial Farmer* of Fredericton, some the *Gardeners' Chronicle and Agricultural Gazette* of England, some the *Horticulturist* of New York, some the *Gardeners' Monthly* of Philadelphia,—and all profit by their reading. There are a good many who do not read anything at all, and they do not profit by it. Whenever we meet a farmer or have occasion to write to one on a subject that suggests the enquiry, we invariably ask directly or indirectly, what agricultural paper do you read? and if we find he reads no paper at all, then we begin to doubt whether it is worth while to debate with him questions of science or practice or agricultural progress. Now in all our efforts to foster agricultural reading during past years, we have not ventured to put forward our own little *Journal* as entitled to much patronage. It is not a commercial speculation like those we have named, there is no cost incurred in connection with it beyond the bare expense of printing, and it does not enter the ranks as a competitor in agricultural education. Its sole object is to form a medium of communication between the Central Board of Agriculture and the Agricultural Societies throughout the Province. The information that finds its way into our columns has therefore a special interest for our farmers, and to them alone, and not to the general public of other Provinces or States, does our *Journal* appeal. In view of the facts we have mentioned, it might be supposed that every Agricultural Society in the Province would naturally place the *Agricultural Journal* into the hands of every member. Our subscription list shows that this practice is not universal.

On another page we publish a List of

the Grants-in-aid made by the Board of Agriculture to the County and District Societies throughout the Province, for the past year. It will be observed that there is a decided increase over last year in the number of Societies, number of members, and amount of subscriptions.

The success of Wheat Culture has induced several Societies to apply to the Board for supplies of Seed Wheat. We fear that the Board will not be in a position to make purchases of wheat this season, and would therefore suggest to Societies requiring supplies to endeavour to make importations for themselves.—Through the importations made by the Board of late years, the kinds best suited to the Province have become well known, and the markets also where they can be obtained on the most favorable terms.

Discussion Clubs are being formed by some of our Societies. We hope they will adopt the English practice of introducing their discussions by a carefully prepared paper. Last month we gave a Report of one of the English Clubs on Pigs, and this month give another on the Cart Horse, which is worthy of perusal. By having a carefully prepared digest of the arguments on a subject read to the members at the opening of the meeting, attention is specially called to the various points, and the discussion is more apt to be exhaustive and fruitful than if left to the accidents of the evening.

In last month's number we promised to note a few of the novelties offered by Seedsmen for the present season. Undoubtedly the most remarkable of these is "Solly Qua." But who? or what? is Solly Qua. The waiter at table when asked, respecting a melon, whether it was a fruit or a vegetable, meekly replied: it is neither, sir, it is a work of art. So we suspect is Solly Qua. It comes like many other wonderful things, from China, and was seen for the first time in Europe on the 8th of June last, when, we are told, it created quite a sensation at the Royal Horticultural Society's meeting in London. It is remarkable alike for its immense fruit, its large dark-green glossy leaves, and the beauty of its flowers. It resembles a cucumber, but the fruit is 5 or 6 feet long, and 12 or 16 inches in circumference. It is a regular crop and a regular article of food in China, being boiled with rice; but we are assured that it is much enjoyed by Europeans, served up in various ways, being always used in the green state. The seeds of Solly Qua are only two dollars each.—Of the new varieties of Tomato—their name is legion; but we single out one that shows its head above all the rest, viz., the "Trophy." Peter Henderson, one of the most, if not the most, experienced market gardener in America, says that it is not earlier but as early as the two earliest kinds grown, the "New York Market" and "Rising

San;" but it exceeds both of these kinds in size, smoothness, beauty of colouring, solidity and flavour. The same good opinion has been formed of it all over America, wherever it has been grown during the past season.—The Giant Rocca Onion is a mammoth onion of fabulous size.—Conover's Colossal Asparagus is generally acknowledged to be a decided improvement upon the sorts hitherto cultivated. We have a small bed of seedlings of last year, and can vouch for its vigorous growth; it is said, however, to be very tender, productive, and of excellent quality, besides coming earlier into bearing than the common sorts.—The Egyptian Turnip-rooted Beet is said to excel all others in depth of colour, quality and prettiness for the table, and if its colour be only half as bright as shown in the picture in Henderson & Fleming's Catalogue, it will prove a valuable acquisition. Of Potatoes, a large number of new kinds have been sent out. The Early Rose is no longer a novelty; but some of those that came out a year or two before the Rose are less known. The Garnet Chili we have found an excellent potato for general culture; in wet lands there can be nothing safer than Goodrich's Pink Eye Rustycoat. Climax and Prolific, both seedlings of Mr. Bresee, who raised the Early Rose, are most beautiful potatoes and abundant croppers, but the Climax is late and much inclined to rot. Along with these sorts we received last year from Mr. Saunders a sample of Worcester or Reilley, which will probably prove a valuable potato. It is red and very like Garnet Chili in size, shape and colour, but quite different in taste, and even less liable to rot. We may mention as a significant fact, that in a cellar containing about twenty of the newer varieties, the rats single out the Jackson Whites for their portion. Peerless is the latest novelty. The Massachusetts Horticultural Society has pronounced it better in quality than the Early Rose; it is said to be a seedling from the Garnet Chili, and to have originated from the same seed ball as the Early Rose. Gregory, however, speaks of Bresee's King of the Earlyes as unsurpassed in colour or form by any variety he has ever grown, but it is not equal in quality to some other sorts. One of the best potatoes, as regards quality, that has ever been brought to Nova Scotia, is one of the Goodrich Seedlings imported by the Board some years ago, the Goodrich Calico. It is not so productive as many others, but of excellent flavor, free from disease, of good size, clean skinned and showy as a market sort, being white with large deep red blotches. Sutton's red skinned Flour Ball is an English sort of the same shape as the Goodrich Calico, but very different otherwise. The Flour Ball is said to be the favourite this season

in London dining rooms. The Calico Ball is a flower of another colour. Our farmers frequently express a wish to try new things, but in some parts of the country we know that they think the prices charged for them are exorbitant and a sufficient excuse for going without. It will therefore be useful if we cite the ordinary prices at which seed potatoes are being sold this spring throughout the United States, in hundreds of thousands of bushels. Bresee's King of Earlyes, \$12 per barrel; Bresee's Peerless, \$7 50; Early Rose, \$7; Excelsior, \$5; Willard's Seedling, \$5; Granite State, \$5 50; New Hampshire Seedling, \$7; Thompson's Seedling, \$7; Concord Seedling, \$7; Early Mohawk, \$8; Early Goodrich, \$4; Early Sebec, \$4. In England the prices are much higher, Early Rose, twenty-eight shillings sterling per bushel; Early Goodrich, five shillings per peck, &c. The fact is that the prices usually offered for seed potatoes and seed grain in Nova Scotia do not pay for the labour requisite to produce a perfectly pure and healthy sample, and this is one reason why we have hitherto been so dependent upon importations. A farmer will grudge to give his neighbour two dollars for a bushel of seed potatoes, and will with less reluctance give twice that amount to an American pedlar for an inferior article. Let us hope that all this is in a fair way of being changed, through the operation of our Agricultural Societies,—and that those who are willing to expend their time and means in experimental culture and careful raising of crops for seed purposes will meet with some reasonable kind of recompense for their labours from those who seek to benefit by them.

A NEW Agricultural Society is being formed in the County of Halifax. It is intended to embrace not only the Halifax Peninsula and the Western part of the County occupied by the former Western Halifax Society, but likewise all those outlying districts of Halifax County where there already exist no efficient Agricultural Societies. Persons desirous of co-operating in this new organization are requested to put themselves in communication with any of the following gentlemen who are meantime promoting the movement until a Committee can be formed: Colonel Laurie, Joseph J. Northup, Esq., Henry Yeomans, Esq., Halifax; Geo. H. Madill, Esq., Milford; Dr. Lawson.

GARDEN AND FLOWER SEEDS.—One of the most extensive and well known seed growers in the country is Mr. James J. H. Gregory, of Marblehead, Mass., who is also the originator of some of the choicest vegetables with which our tables are supplied. All seeds supplied by him are warranted fresh, and true to name. See advertisement of his New Catalogue, (sent free), in this number.

LIST OF GRANTS TO AGRICULTURAL SOCIETIES FOR 1870.

ANNAPOLIS COUNTY.		
Bridgetown Agricultural Society,		\$60.00
Eastern Annapolis do. do.,		59.00
Annapolis do. do.,		61.00
Paradise do. do.,		69.00
		\$240.00
ANTIGONISHE COUNTY.		
Morristown Agricultural Society,		\$102.00
CAPE BRETON COUNTY.		
Boularderie Agricultural Society,		\$128.00
Sydney do. do.,		82.00
		\$210.00
COLCHESTER COUNTY.		
Shubenacadie Agricultural Society,		\$81.00
Sterling do. do.,		33.00
Onslow do. do.,		99.00
Tatamagouche do. do.,		36.00
Lower Stewiacke do. do.,		41.00
		\$240.00
CUMBERLAND COUNTY.		
Amherst Agricultural Society,		\$88.00
Farrsborough do. do.,		88.00
Wallace do. do.,		79.00
Minudie & Barrowsfield do.,		35.00
		\$240.00
DIGBY COUNTY.		
Digby Central Agricultural Society,		\$78.00
Union do. do.,		58.00
Clare do. do.,		48.00
Weymouth do. do.,		61.00
		\$240.00
GUYSBOROUGH COUNTY.		
Milford Haven Agricultural Society,		\$106.00
HALIFAX COUNTY.		
Lower Musquodoboit Agri. Society,		\$83.00
Upper Musquodoboit do. do.,		73.00
Dartmouth do. do.,		84.00
HANTS COUNTY.		
Noel & Maitland Agricultural Soc'y.		\$73.00
Windsor do. do.,		113.00
Hardwoodland or Nine Mile River Agricultural Society,		54.00
		\$240.00
INVERNESS COUNTY.		
Mabou and Port Hood Agri. Society,		\$80.00
KINGS COUNTY.		
Union Society of East Cornwallis,		\$67.00
Aylesford Agricultural Society,		38.00
Kings County do. do.,		33.00
Cornwallis Central do. do.,		32.00
West Cornwallis do. do.,		70.00
		\$240.00
LUNENBURG COUNTY.		
Mahone Bay Agricultural Society,		\$102.00
PICTOU COUNTY.		
Pictou Agricultural Society,		\$54.00
River John do. do.,		40.00
New Gairloch do. do.,		60.00
Maxwelton do. do.,		30.00
Egerton do. do., of Fishpools,		28.00
East River,		28.00
Merigomish do. do.,		28.00
		\$240.00

SHELburnE COUNTY.

Clyde River Agricultural Society,	\$78.00
West Passage do. do.,	79.00
Barrington do. do.,	83.00
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	\$240.00

VICTORIA COUNTY.

St. Ann's South Agricultural Society,	\$86.00
Middle River do. do.,	148.00
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	\$234.00

YARMOUTH COUNTY.

Publico Agricultural Society of Ar-	
gyle Township,	\$20.00
Yarmouth Township Agri. Society,	31.00
Yarmouth County do. do.,	189.00
	<hr/>
	\$240.00

Total number of Societies,	49
" " of Members,	2,752
" amount of Subscriptions,	\$8,046.00
" " of Grants-in-aid,	3,372.00

AN AGRICULTURAL LECTURE.

[The following Lecture was delivered by Professor Lawson several years ago in the Crystal Palace, Kingston, Ont., on occasion of an Agricultural Exhibition.]

I have no special claim on your attention, no intimate acquaintance with your art, no personal experience of the capabilities of your soil; but I cheerfully comply with the request that has been made, for, although I have nothing special to communicate, I feel that it is the duty of every one to aid, to the extent of his power, however humble that may be, to forward the important objects of such an Institution as this. One great use of Exhibitions is to bring science and practice more closely together; and in proceeding to discharge the duty that has been assigned to me, I do not know that I can (in the present stage of Canadian farming) occupy your attention more profitably than by briefly pointing out some of the results of science which bear upon rural improvement.

In the admirable address delivered by Mr. Ferguson at the late annual meeting of the Provincial Association at Toronto, we were told of the gigantic strides which this country had made within the memory of the present generation; how the old fashioned one-handled plough with wooden mould boards, and other implements equally rude, which were in common use, have vanished away before the improvements of our own time; and how, in all that relates to mechanical appliances, Canada is following closely at the heels of the most advanced nations of Europe. And especially pleasing is it to observe at these Exhibitions that the workshops of Canada are not merely striving to emulate the manufactures of Europe, but seek rather to provide our farmers here with implements and machinery better adapted than English models for Canadian work. In like manner, how mar-

vellous the improvements that have been accomplished in our means of transit, both by land and water, over the slow, expensive, and insecure methods which alone were available not long ago. And when, in addition to all these benefits, the farmer has all the results of modern science placed before him to guide his hand, and foster a spirit of improvement,—is it not reasonable to expect that he shall not lag in the race, but shall make efforts greater than any that have yet been made to raise his art to the common platform of modern progress?

The genuine interest displayed in the promotion of agriculture in this Province, shows that the farmers are not indisposed to respond to the call that has been made upon them. When I see before me an assembly of Canadian farmers, and think of the past history of this great country, in which they have been playing so important a part; when I think of the results that have already been achieved, of the wide forests that have melted away before the strong arm of the woodman, like the morning mists before the rising sun; of the broad expanse of pastures and cornfields that are now spread before us, at once an earnest of the dominion of man and of the success of his labors; when I think of the noble institutions that we meet with on all hands in Canada, evidences of the rapid strides she is making in the march of civilization; when I think of these, and of these triumphs of labor and thought such as these, which on Canadian soil meet us on every side, a bright vision of progress and prosperity for the future rises before me. The noble forests that had for countless ages grown in all the wildness of nature presented a bold front, sufficient indeed to stem the tide of ordinary civilization. Like a strong enemy they would have scorned a puny hand. They called for great energy and perseverance. Great energy and perseverance were brought to bear upon them, and they began to fall; soon the sombre forest was lighted up by the tin-covered cupolas and church spires, which, glistening in the sunshine, shed their radiance around, indicating from afar the villages and cities which were to form the centres of future civilization. The same spirit of activity and determination which has made so glorious a victory in the past, is now actively at work among you—the Exhibition this day is one of the many evidences of it—and herein do we see the elements of Canada's future greatness. Where so much good work has already been done, we may reasonably hope that much good work will still be done. The hand that cleared away the forest has not lost its cunning. In this Society you have an important instrument for good. It is to Societies like this that Agriculture owes its advancement in Europe. The Royal

Agricultural Society of England and the Highland Society of Scotland have for many years kept before agriculturists the importance of improvement and the means by which it was to be accomplished; they have directed the researches of scientific men on the one hand, and the experimental practices of the farmer on the other; and now we have in many parts of Britain an amount of success in farming which its most sanguine promoters could not have anticipated. But these leading Societies have not done *all* the good work. Valuable results have from time to time been obtained by farmers, and proprietors, and chemists, working apart and in seclusion. But it is to the County Societies in the old country—to Societies such as this, limited in their operations to a certain district—that we are to attribute much, very much, of the good that has been done, and of the genuine interest that has been awakened in improved cultivation. The discussion at *some* of these County Societies no doubt reach you through the press; but many more are actively at work, unknown beyond their own circle, surely and unostentatiously evolving good fruits, year by year solving more and more fully the problem of increased production, of growing two blades of grass where only one grew before, a problem which acquires a new phase through every new discovery.

This Society has a noble work before it, and I trust that it will meet with that support which it deserves—the support of farmers and proprietors and amateur agriculturists on the one hand, and of the general public on the other. The cultivation of the soil is not a subject which affects only that class of persons who are actually engaged in its operations. On the contrary it forms the stratum of civilization; more extensive than all others, it is the one upon which they all depend, the one upon which all our institutions are built up; it is the originator and the supporter of all the other arts of peace:

“The profit of the Earth is for all; the King himself is served by the field.”

In all time, the farmer has been honored above all men, and the cultivation of the soil is held in all civilized nations to be the most honorable employment of men. Even the imperious senators and warriors of ancient Rome, amid all the excitement and glory of successful war, sought, in the culture of their lands, relaxation from the dangers of the battle field, or the cares of the state; and according to a writer of that age, “the Earth delighted to be ploughed with a share adorned by laurels, and by a ploughman who had been honored with a triumph.” And in our own day, the glory of our arms has not diminished the lustre of the ploughshare.

In England our noblemen and our merchant princes are now exchanging the

turf for the cornfield, which they find as pleasant and as profitable.

The good results brought about by this Society are visible in the improvements which we see around us on the farms of the district over which its influence extends; and their products are brought before you this day in forms which evidence more fully the good that has been accomplished. Let it then go on and prosper in its good work, let it be widely known that the Society expects every member to do his duty, and let every member, and every one connected with this Society, rejoice that he has it in his power to do something for the common good. And having done our part, let us seek the Divine blessing on our labors, let us remember that, in material as in spiritual things, while Paul may plant and Apollos may water, it is God that giveth the increase.

What is the annual course of operations on a farm? In spring time the farmer ploughs his land, drops his seed, covers it up, and forthwith the young crop arises; day by day it increases in stature, and in autumn it realizes his just hopes by a golden harvest. Here is a mystery that may well arrest our attention. The seed grain, with its germ of life, has grown up into a living being, and it yields seed after its kind. Let us see how its growth is accomplished.

The first statement I wish to make is that plants are living beings like ourselves. I might illustrate this by pointing, as the physiologists of olden times did, to some remarkable instances of irritability and movements exhibited by certain plants, such as the moving plant of India, the sensitive plant, and many others. But I do not found my statement that plants are living beings upon the evidence afforded by such exceptional examples as these. We have far more satisfactory evidence in the minute structure of these plants, which, in its essential character, closely resembles that of animal bodies.

[Here the minute structure and cellular development of plants, and the chemical changes that take place in their tissues, were explained.]

Now, what are the sources of the plant's food which enable it to perform the phenomena of growth? which enable it to increase in size, and furnish food for man and beast. We find that all the elements of which the plant is composed are found in the inorganic world. It therefore creates nothing. When we partially burn a plant (or a piece of wood) we drive off water and other volatile matter and leave a black mass of charcoal, or *carbon*; if this carbon is burned in the air it disappears, leaving the ash behind, which does not volatilise. This is mineral inorganic matter, which, along with water, has

been derived entirely from the soil; the carbon is derived from the atmosphere which the plant breathes.

[Here absorption and the mode of feeding in the plant were explained, and the stomata were described by which it takes in the carbonic acid of the atmosphere from the carbon of which its tissues are in great part built up.]

We see then that plants are endowed with life, and exercise all the functions belonging to organized beings. Like animals they feed and breathe, and in our cultivation of them we must see that their wants are ministered to. But all plants are not alike in their choice of conditions of growth: some grow in the sea; some grow in hot water; some grow in cold fresh water; some grow on snow; some grow in wet soil; some grow in dry ground; some grow in arid sands; some grow on decaying matter; some grow on other plants, as parasites. All this teaches us that we must imitate the conditions necessary for the plant we cultivate. The atmosphere, which forms one source of the food of plants, is, to a great extent, beyond man's control, but not so the soil. It is in many respects capable of improvement.

[Here the chemical characters of soils were referred to in detail, and also their mechanical conditions.]

One of the most frequent difficulties with which the farmer has to deal is a superabundance of moisture. There are various ways of remedying this, but a few general principles are applicable to all.

In regard to ordinary drainage there are many points that can only be considered fully on the spot. Much discussion has taken place as to the direction, and especially the depth, of drains. It seems to be well established that on light soils drains act more effectively the deeper they are placed; but it is necessarily very different on clays where the water cannot percolate. In such soils, while the actual depth must depend upon the depth of available soil, and other circumstances, it must never be carried too far, otherwise the clay will resist the passage of the water, and thus the drains will remain useless.

It is also a question of frequent discussion in England: what is the proper distance apart for drains? And here it is necessary to take into account the differences in regard to capillary attraction of soils, or that power by which they are enabled to suck up water from below.

[Here the effects of different modes of drainage were explained by diagrams.]

In a comparatively short time draining has completely changed the aspect of extensive tracts of country in Britain, converting the cold morass into fertile fields and greatly increasing the annual produce, even on soil which was before

bearing crops sufficient to satisfy the most exacting expectations. One reason, I believe, why so little has been done in the way of draining in this country is that drain-tiles are expensive, and not readily attainable. The same objection existed in Britain not very many years ago; but the demand for the article soon led to its increased production, and now our farmers in most parts of Scotland and England have no difficulty in obtaining drainage materials. There is no good reason why the same thing should not result here. There are ample deposits of clay in many parts of Canada well adapted for brick and tile-work. There are deposits in the immediate neighborhood of Kingston which may no doubt be worked to advantage, and which, in the nature of things, cannot possibly lie idle after a permanent demand for drain tiles is established.

By growing in rich soil and supplying all the conditions necessary for luxuriant growth, many plants which in their wild state are unfit for any useful purpose, have been rendered subservient to the wants of man.

[Here the origin of many of our cultivated crops, such as wheat, turnips, cabbage, &c., was explained.]

When we think of such improvements in the common plants we rear, it affords much encouragement to those who would direct their efforts in this direction, with a view to the raising of new varieties. And here I would observe that much remains to be done in this way in Canada. We Scotchmen, and Englishmen and Irishmen, are prone to imitate the British institutions and British practices. Many of these have been introduced and have proved of great value, but some have been found unsuitable to the conditions of Canada.

In the choice of varieties for the leading crops in the kinds of wheat, and of barley, and of oats, and of turnips, the Canadian farmer has hitherto depended chiefly upon varieties obtained from Britain. But the climatal conditions of Britain are so different from those of Canada, that it is impossible to believe that the varieties best adapted to the former are likely to be the most useful to the latter.

The raising of new varieties better suited to the climate than those now in existence, is surely a matter of no small importance to Canadian agriculture, and I earnestly trust that it may receive the attention which it so well deserves. It is a slow process, however, and the farmer who undertakes it, must

"Learn to labor and to wait."

But I may naturally put the question, Have you already ascertained with any degree of accuracy that old varieties of wheat and of barley, of oats and of potatoes, of turnips and of other forage and

pasture plants, are adapted to the circumstances of Canada? No doubt much useful information has been elicited. It is impossible for so many active farmers to have lived in Canada, stirring the soil from year to year, and watching the growth of the crops, without acquiring much experience on this point. Still, when I think of the many varieties known in Europe adapted to every kind of soil and situation, it is impossible to believe that there is not still room for well directed experimental inquiry on this subject in Canada.

It is now well known that the choice of suitable varieties is even more important than the choice of good soil, or the application of manure; for our scientific agriculturists no longer regard the plant as a mere machine acting a mechanical part, and guided by certain chemical changes. It is a far more subtle thing; it is guided in its development by the laws of life, which overrule all chemical action; thus chemistry is no longer the solitary guiding star of the scientific farmer. Physiology must go with it, hand in hand, in all that relates to improved cultivation.

When improved varieties are once obtained, high cultivation is necessary for the continuance of those properties that render them valuable.

When cultivated plants are neglected and allowed to grow in a poor soil, they soon revert to their wild condition. It therefore requires a continuance of suitable conditions to perpetuate those peculiarities which render them useful to man. In the *first* place, the soil must contain in sufficient abundance those elements required for building up the plant's structure. If they are not present naturally, they must be supplied in the form of manure, which may be of various kinds, according to the circumstances of the case. As Sprengel observes, "a soil is often neither too heavy nor too light, neither too wet nor too dry, neither too cold nor too warm, neither too fine nor too coarse; lies neither too high nor too low, is situated in a propitious climate, is found to consist of a well proportioned mixture of clayey and sandy particles, contains an average quantity of vegetable matter, and has the benefit of a warm aspect and favoring slope;" but although possessed of all these advantages, it is yet unproductive, because it wants some mineral constituent required for plant food.

The soil may be naturally unfertile, or, originally fertile, it may have become barren through long cultivation. In a new country there is a strong tendency to carry off annual crops from the lands without giving anything back. We have seen that the plant cannot create anything, neither can matter grow in the

soil; if we wish to retain its fertility, we must replace what we have taken away.

As regards manures of a general nature designed not so much to supply any special want of a soil whose barrenness arises from some such idiosyncrasy, as that to which I have alluded, but to increase the general fertility of the land—long experience has shown that vegetable and animal matters are by far the most useful, and generally applicable; and by them we are enabled to restore to the soil precisely those substances that have been carried off from it by our farm crops; for different species have diverse preferences and capacities in this respect.

Let me urge you therefore to value such materials and not let them run to waste. It is by means of these that your soil may be enriched, your exhausted soil redeemed, and your annual produce increased. When you see a bone lying by the wayside, (and in this part of the world you cannot go far without seeing one), do not pass it by, do not despise it. Pick it up and throw it into your cart, for therein are the elements by which your art may make a loaf of bread. Think of the care with which every grain of bone dust is gathered up like gold, in England, think of the crops which it realizes, of the ample fortunes which the very gathering of bones there have realized; and think of the turnip fly, which bone dust cheats out of its favorite morsel!

How much of the success of farming and of all other arts and manufactures depends upon the saving of material! upon imitating that beautiful law which chemistry teaches us, that in nature nothing is lost. In Edinburgh we have a distillery of great extent, where economy of heat and material is wonderfully carried out. The "dreg," a waste product, was produced in such quantities that all the cows in Edinburgh could not consume it, and there remained an enormous surplus which had to be discharged into the water of Leith. This nuisance the modern Athenians protested against as an outrage on their sweet smelling city. Something had to be done. Seed cake had been used by farmers, and it occurred to the proprietors that the "dreg," as well as oil refuse, might be pressed into a cake. Machinery was accordingly fitted up, dreg cake was prepared, and in going through the premises a few days before I left Scotland, I found that the proprietors were realizing £60 a week for this product, which, although at first wasted in Edinburgh, is now sent to the farmers in all parts of Scotland, to be returned in the form of fat cattle and butter and cheese.

With all your improvements and assiduity in cultivation, there is still a canker-worm to give you care. Even after you have drained and ploughed, and subsoil

ploughed and manured, and sowed good seed, and tended with care, yet will thieves break through and steal, in form of *wheat flies*, which all the Acts of the Legislature, cannot reform; turnip beetles which, tiny as they are, seem to eat up whole fields of young turnips at a mouthful; and other pests of the insect world, with which you are no doubt all too familiar. No, not too familiar, for their doings are only in part known; if their habits and their history were better known, we should, no doubt, be better able to cope with the evils which they bring.

But there is also in Canada, I am sorry to say, as in other parts of the world, another host in arms interrupting the peaceful tenor of the farmer's way. These are of vegetable origin—the mildews and moulds and blights and rusts and smuts, which you all know by experience, and which are interesting to the scientific observer from their inscrutable ways and the masks they so often put on to elude his prying eye;—at one time adopting one form of development, and anon changing the whole tenor of their ways; at one time attacking a living plant, at another time living on decayed matter; the same species in one form spreading a film of mould on the contents of a long cherished pot of preserves, and in another form playing the alchemist in the cupboard, and transforming molasses into the best brown vinegar. And these, and such as these, are they all the enemies with which the farmer has to contend? They are sufficient indeed, but let us remember the weeds that are so abundant in many fields, that reap from the soil so much of its riches, and so frequently smother the growing crop.

One would imagine that in Canada, where so much trouble and labor have been expended in clearing the soil from its indigenous arboreous vegetation, that when once cleared it would be kept clean. But no sooner are the trees hewn down and the soil turned up, than the herbaceous weeds assert their place and power, and often defy the efforts that are made to keep them in check. These efforts must be increased. When you see a broad patch of crowfoot in your field, or a bed of thistles in your pasture, reflect that the ground they occupy is yielding no return, that it might as well not have been cleared at all. In your march forward into the woods forget not that the enemy comes in behind; and forget not that it is less honourable to make the conquest of new territory than it is to hold and defend that which has been already won.

It is not alone the loss of the soil and necessarily increased expense of cultivation that field weeds involve. One thing is certain, that no better means can be devised for the encouragement of insects. In regard to the turnip fly, for example,

it is well known that it feeds only upon plants belonging to the same natural order as the turnip. In early spring and summer time weeds belonging to this order are often abundant and form suitable pasturage, where the turnip flies congregated and increase to an amazing extent, so that when the young turnip crop appears they at once migrate to its more delicate leaf and blast the hopes of the farmer. Just before leaving Scotland this summer a remarkable instance occurred to me, illustrating what I have said. Two fields in the same district, and both of clayey soil, were cropped with the same kind of turnips of apparently the same age. One field was isolated by corn fields and potatoes, and I could not detect in it a single fly. The other field was also isolated, but was in a perfect swarm. The reason was explained when there was found in one corner of the field an extensive rubbish heap covered with wild mustard, which had been growing since the previous autumn, and thus had formed a winter's provision for the fly.

Another great evil resulting from the abundance of weeds is this, that their seeds become mixed with the grain, and thus we have a dirty sample. This deteriorates from the market value of the grain. At Toronto I saw a very ingenious machine designed for the purpose of cleaning dirty grain of this kind, and I must say it did its work well; but it would indicate a far more hopeful appreciation of the value of clean grain if we were to begin at the beginning, and not allow the weeds to ripen in our corn fields at all.

There is one branch of rural economy, so closely connected with agriculture, that it may without impropriety be noticed on an occasion of this kind. We know that the effect of colonization and civilization in all parts of the world has been to denude fertile land of its native forests. Throughout middle and southern Europe we only find here and there the remnants of the original arboreal vegetation. "Clearing" is in fact necessary to permit the industrial operations of man. But the clearance of forests is not an unmixed good. On the contrary, we find that a train of evils sometimes follows it, which all the exertions of man cannot repair. While there is a want of precise information as to the physical effects of the removal of forests, we have sufficient information to show that such operations should not be carried out indiscriminately, and trusted entirely to private interest, but should be regulated for the general good, and with a view to the permanent interests of a country. Recent researches have shown how injurious have been the neglect of needful precautions in the felling of timber in many parts of our Indian Empire, and in

reference to the American Continent, Humboldt tells us that "by felling trees which cover the tops and sides of mountains, men in every climate prepare at once two calamities for future generations—the want of fuel and the scarcity of water. Plants exhale fluid from their leaves, in the first place for their own benefit. But various important secondary effects follow from this process. One of these is maintaining a suitable portion of humidity in the air. Not only do they attract and condense the moisture suspended in the air and borne by the wind over the earth's surface, which, falling from their leaves, keeps the ground below moist and cold; but they can, by means of their roots, pump it up from a very considerable depth, and, raising it into the atmosphere, diffuse it over the face of the country. Trees, by the transpiration from their leaves, surround themselves with an atmosphere constantly cold and moist. They also shelter the soil from the direct action of the sun, and thus prevent evaporation of the water furnished by rains." Thus do the forests contribute to the copiousness of streams, and preserve during the hot season a certain amount of moisture in the atmosphere. But it is not on such grounds that I would argue the conservation of forests in Canada. Let us look to the position of other countries at the present time where timber is scarce, and contemplate the advantages which Canada enjoys at this moment in its glorious old woods, the source of half its riches. Let us reflect on the means that have gradually rendered other countries so poor in this respect, while we are so rich. And while we enjoy the riches, let us see that they are secured also for our successors; that in rendering Canada an agricultural country, we do not forget to provide for the permanent maintenance of those vast supplies of timber which are found so valuable in all the arts of life, and in time will be found necessary for the very existence of a people so ill provided with fossil fuel.

In various European states, and in Britain, great efforts are being made to improve the management of forests, and much good has been done. One curious result brought out by the Scottish Arboricultural Society is this, and it may stagger the Canadian farmer, that while forests have through neglect been ruinous to many proprietors in Britain, still, when properly cared for by yearly pruning and thinning, they not only repay all the labor bestowed upon them, but yield, on good soil, as profitable a return as wheat or green crops.

Now, I do not expect that we can secure for many years to come the same amount of labor for the rearing of natural or artificial forests as is now bestowed in many parts of Scotland and Eng-

land; but I do not see how this branch of industry should be neglected—how, for example, our Canadian forests, especially in the neighborhood of towns, should not be cared for, so as to secure a full and regular crop of good timber, instead of the trees being allowed to grow indiscriminately, forming a tangled wilderness, where the good trees, choked by useless undergrowth, scarcely afford a reward for the labor of felling. There is also to be found in Canada land not adapted for heavy corn crops, but admirably adapted for timber, which would undoubtedly yield a profitable return if planted with suitable trees.

These suggestions I offer as the first thoughts of a stranger on looking abroad upon the country. They may appear ill-adapted to the wants of the country at the present time. It may seem that I have formed an erroneous appreciation of Canada when I recommend the growing of timber, as well as the growing of corn. But both are necessary for the successful development and permanent success of a country like this. While in the midst of abundance we are apt to neglect provision for the future in regard to a crop like timber which requires half-a-life time for its development. But assuredly, if we do not anticipate and provide, the time will come when many districts of Canada, like all other civilized countries, will feel the want; year by year, as the agricultural resources of Canada are more fully developed, the natural supplies of timber will decrease. Need I further allude to the effective means of decorating our cities, which are so fully afforded by our native trees. In Kingston a custom prevails to some extent of lining the streets with trees, to overshadow the passer-by. In oriental countries it is a public duty. In Kingston I trust the taste will extend. But trees are not appreciated here as they are even in Britain. I know that if such natural avenues of gigantic cedars as you have not far from this city were found within the length and breadth of Scotland, they would be all grubbed up by McGlashen's transplanter in the course of a week, and transferred to the pleasure grounds of Edinburgh Advocates. Why should we not have some of them in Kingston, that, in the oriental language of Emperor Akbar, "their sweet odors may reach every one, and that from those luxuries a voice may go forth to travelers calling them to rest in the cities where their every want will be supplied."

I have thus thrown out a few hints that may suggest inquiry or discussion or contradiction. It will be strange if I have talked so long without dropping some thought that may take root in some one's mind. One thing is certain, that I have not been sowing on a stony soil; and if perchance one seed should grow up

and bear goodly fruit. I shall know it was not *all* chaff.

The lecture was illustrated throughout by reference to drawings, &c.

THE CART HORSE.

At the last discussion meeting of the Stowmarket Club, this subject was introduced by Mr. Henry Crosse. The following epitome we extract from the London Agricultural Gazette of 28th January:

I have chosen my own subject, and my first ideas upon it were instilled into my mind when very young; for when I rode a donkey beside my father, who was a great admirer of the Suffolk breed, and for many years a successful breeder, he used to point out to me a good one when we met a team, and tell me the good points and find fault with the bad ones. If on the subject of the draught horse I possess a little extra vanity, perhaps you may think it the more excusable when I tell you I have been selected to act as a judge of agricultural horses 17 times at local shows, and six times at the Royal Agricultural Society's meeting; and the confidence thus placed in me has certainly added no little experience to my early lessons. Next to the *genus homo*, or the human being, (for all climates) I should place *equus*, believing the horse to be the most useful, most valuable, and the staunchest friend to the human race of all animals. The elephant may suit the jungle, the camel the desert, the reindeer the Laplander, and the dog the Kamshatkan; but for the rest of the globe it cannot, I think, be disputed that the horse stands first in importance and usefulness. In the choice of a draught horse, whether a Suffolk or any other breed, I state as an opinion that there are three most especial points which ought to guide either breeder or purchaser—symmetry, quality, and action, and these may be defined by three other words—beauty, endurance, and pluck.

Symmetry in a horse many will say is a matter of fancy or taste, but it ought not to be so, for it has nothing to do with size or with substance, but may be nearly the same in all, from the pony to the dray horse. Any horse having four good legs sufficiently strong to carry his weight ought to have a shape which will bear an equal weight or proportion on each leg. Take an animal with a very heavy forehead and light hindquarters. Can such an animal possess symmetry? Reverse the shape, and it is equally out of proportion. Still I have many times found both these, to my eye, ill-shaped animals, much praised, and have known them work well. This only makes good the saying of an old Suffolk Nimrod, that horses may go well in all forms, but he liked the handsome ones best. Now, my definition of symmetry in a horse is that the nearer you divide his length in four equal parts of neck, shoulders, back, and hind-quarters, the nearer an animal exhibits perfection in a side view, and if you divide his body at the second long rib, each leg ought to have an equal proportion of its weight.

Next as to quality. I was told when a youth, of a veterinary surgeon at the London Hospital, who, to illustrate quality, had two inches of bone cut from the shank of a blood-horse and a dray-horse, and the bone of the race-horse weighed quite as much as the other, though not more than two-thirds of the size.

Now one of the most estimable qualities of the Suffolk breed, especially to foreigners who come to purchase, is that his bone, as well as his muscle, shows plenty of quality; and if I see a Suffolk with a good clean shank bone and flat hard back tendons, they go a long way, in my opinion, towards securing both quality and endurance. It is often said that action in a draught-horse and in a hack are of two different kinds; but is it not rather the training from generation to generation that makes a great proportion of difference? Now the action of a cart-horse should develop itself in a firm quick step, not too long, as a long step requires greater leverage to get through dirt, and more power is exhausted than by a moderately short one, and a quick step is a sure sign of good pluck in any animal. As to the height of a cart-horse for agricultural purposes, one more than 16½ hands high is too high, and one less than 15 hands high is too low for general purposes.

To summarise these remarks, let me describe in full what I consider perfection in an agricultural cart-horse:—

A well-shaped head, rather large, a long clean ear, full eye, neck rather long, but not too much arched, strong withers lying well forward to catch the collar at the proper angle for draught, and broad shoulders well spread into the back, back straight, ribs long and well rounded, hind legs bent at the hock, forelegs forward, hind-quarters somewhat round, but not sufficiently so to make them look short; the mane and tail of strong but not coarse hair, and with a fetlock about two inches long, broad knees, long hocks, short shanks and hard ankles or fetlock joints, and round hoofs well opened behind; and the nearer you approach this description, the nearer the horse will be to perfection.

Till the steam-plough takes the place of those now used, the plough will always be the work which will wear out the farmer's horse more than any other. Observe your plough-horses on a hard headland, and you will see the horse with very sloping shoulders swerve from his work, where a horse with moderately upright shoulders will lay to his work, and walk straight. I am aware that in these remarks I am touching upon tender ground, for I find the fashion of the present day is greatly in favour of very sloping shoulders. My experience is certainly not in their favour, and Professor Youatt, in describing the farmer's horse, writes that the shoulders should not be too much sloped, as workmen often find fault that a horse jibs when the fault is more in the shape of his shoulder than in his temper, for when he lays to his work the collar catches his windpipe, making him throw up his head and full back; and when a horse is required to start a heavy load, or take a dead pull, it will be necessary to have horses that will lay to their work, for it is a mathematical certainty that a draught horse must pull from an angle at the shoulder, and if that angle is too sloping, the collar will catch the windpipe, and, if too upright, will press upon the withers. To exemplify the necessity for a staunch horse, allow me to relate an instance I saw a few months since. A waggon was stopped at the bottom of the hill in the parish of Great Finborough, and when the driver wanted to start his load, three out of the four horses refused the dead pull, and had he not had one with a pair of upright shoulders, he might have stayed some time. On looking round I saw the three were of a favourite breed, and very smart animals, and

I also noticed that all three had on collars thickest at the top. This, to me, had a very ugly appearance.

A word or two as to breeding. One point I have found too much overlooked in breeding, viz., hereditary weakness and disease. My advice is, never breed from an unsound animal, particularly do not breed from one unsound about the feet and legs, for I have frequently been able to trace pedigree by brittle hoofs and bad ankles or fetlocks, for several generations, when acting as judge, and have found too many of our public favourites so very deficient, that even when only old enough to put to work their legs looked more than half worn out. To back my opinion as to the necessity for attending to the size of the ankles of a cart-horse, I will quote my brother, who lived at Onchouse Hall, for 40 years, and who would never breed by horse or mare that had small ankles. He maintained that it might do for a generation, but would be sure to go wrong if continued; and I believe those who knew his horses will agree with me that they were equal to any in the country, and they were chiefly bred by himself. He never showed any, for he said he could not spare his best to be fattened up for that purpose, and he never saw one too good for his work—this remark I heard him make to the late Rev. Copinger Hill.

Thus far I have confined my remarks to the Suffolks, but I will now say a few words about other breeds. For the light lands of Norfolk they require a faster animal than we do in our district, and they breed and use them rather longer on the leg; and many of the Lincolnshire, or Fen breed, that do not attain their full size, work as well as those of Norfolk or Suffolk, and in point of symmetry these and the Clydesdales sometimes even beat the Suffolk breed; but as working horses I believe none will last more years, or do more work, or keep their condition so well as the well-bred Suffolk horses. On this point I had, some years since, the word of a gentleman who set two farms at the same time, one with Fen breed and one with Suffolks, and he had most of the Suffolks when the others were worn out. In most old descriptions that I have read of the Suffolk horse, he is described as low in the forehead, sluggish in his movements, and with a blaze in his face as broad as a spade. These ugly points, by attention to breed, are chiefly vanished; and I have no doubt those imperfections which I have taken the liberty more particularly to notice, with other faults too commonly met with, may be also much improved, if not got rid of altogether by further attention to breeding by sound animals.

To conclude, gentlemen, after 40 years' and more experience, I may perhaps be allowed to caution breeders not to sacrifice substance for quality, symmetry for fancy, nor both for action, so long as strength and constitution are required in an agricultural cart-horse. I could continue the subject by relating many occurrences which have happened in my life amongst horses and men, but I shall be happy to have the subject discussed by others, whose modern experience can improve my, perhaps, too antiquated ideas.

DISCUSSION.

Mr. Crosse had brought to the room, in order to better illustrate his remark, two oil paintings of Suffolk horses. He said one was the likeness of a horse that had taken many

prizes, but he brought the two pictures in order to illustrate what he considered the weak points of one and the good points of the other. He pointed out the deficiencies of the ankles of the mare, but said when she was shown the judges thought sufficiently well of her to give her a prize. The other was never thoroughly beaten, and was never shown but what he got a prize, excepting at Cambridge, when a Fen horse took the prize, against the Suffolks. The horse was 16 hands half an inch high. The late Mr. Worlledge had an animal which looked half as big again, but when they got on to the weigh-bridges there were only 5 stones difference; one had weight and the other had not.

Mr. Lingwood referred to Mr. Catlin's Captain, whose blood came down to the late Mr. Crisp's Prince. Many that had descended from that blood might be a little small below, but they were clean and smart; and if farmers wanted to get rid of a good gelding for London work it must have some style about it. It would not do to have the very upright shoulders that had been alluded to if they wanted a horse to sell well. The President would agree with him that if his mare had not got very sloping shoulders, but still sloping, she would not walk and show as she did. We had now come to the year 1871, and if we wanted a useful gelding for London work there must be style about it, even though it was at the sacrifice of a little substance. He (Mr. Lingwood) knew that he was touching upon a tender point, but Mr. Crosse appeared to be an advocate for an upright shoulder.

Mr. Crosse: You must not call that an upright shoulder. He had always held that the angle of the shoulder of a hackney or for London work might be 45 degrees backward, but a Suffolk cart-horse ought never to be above 25 to 30. The fastest walker he ever knew was bred by Mr. Crisp's Prince. She could walk five miles an hour, and she had the most upright shoulders.

The President said the point now under discussion was as to the uprightness or otherwise of the shoulder. Looking at it in a practical light, there might be a great deal in what Mr. Crosse had said, that more or less the upright shoulder did give a better pulling power to the collar. It was according to the law of mechanics that a good shoulder lying well back would enable the animal to put its forelegs out better than in the case of an upright shoulder. For drawing a heavy plough an upright shoulder might do as well, and perhaps better; but still, as had been said, if they wanted to breed horses for London, there must be smartness. The fault that the Suffolk horses had run into was that they were a little light in the bone, a little small below the knee, and some of them had feet which were like to turn bad. These were the things which breeders must guard against. It was very essential to get good sound feet, it being a frequent matter of complaint that the Suffolk horses could not stand the stones. This is an evil that ought to be eradicated if possible. In a Suffolk horse he liked to see a good loin and good hind-quarters. He liked to see a wide loin up and down, and carried up into a long sweeping quarter, and this, with good action, made a perfect horse.

The Vice-Chairman (Mr. Heigham) was bound to say that the cart-horses in the eastern side of the country were generally superior to those in the western division. Those

gentlemen who were residing in the western division of the country were greatly indebted to Colonel Wilson for introducing some most valuable stallions into their neighborhood.

The President said his great object in buying the cart-stallions was to see if West Suffolk could not, after a time, equal East Suffolk. There had not been first-class stallions travelling through their part of the country; but he was now trying to give the farmers of West Suffolk the opportunity of making use of some good blood. That he had not taken the step he had with the view of making money was quite clear from the prices which he had given for them. He should like to see the horses of the western division equal those of the eastern. He purchased at the Newbourne sale the best yearling out of the famous Victoria, by Monarch. It was well known that Mr. Wolton had been breeding with great care for years past, and at the sale there was the best lot of animals, taken as a whole, that he (the President) ever saw in his life. He bought a foal which was fortunate enough to win the first prize at the Sudbury show. He promised to turn out a good, stout, useful animal. If he turned out well, he would be at their service.

Mr. Crosse said reference had been made to horses for use in London, but it should be remembered that the object for this evening's discussion was that of the agricultural cart-horse. The best horse he ever saw in his life for symmetry was Honest Tom, a Cambridgeshire horse, but his father was a Lincolnshire horse. It was the best shaped horse he ever saw in his life. It had four white legs and a white head. It was a lemon-bay, with pearl-ash hair about the legs. Had it been shown as a cart-horse against all the world he never saw one that would beat him. Mr. Crosse then went on to speak of other descriptions of cart-horses, alluding to the Wolds of Somersetshire, where three cart-horses were put to a plough, where the work was 10 to 12 inches deep, and he said our Suffolk horse would be of but little use there. He also alluded to Sussex, where they ploughed 15 inches deep, and to the Newcastle horses. As to breeding a smart-looking horse for London, Mr. Crosse spoke of the long time it would be necessary to keep it, and of the expense incurred. He then observed that if you wanted an animal with shoulders lying back like those of a hunter, you would not get one that could pull a dead pull.

A vote of thanks was passed to Mr. Crosse for his paper.

HOW TO RAISE ASPARAGUS.

For more than twenty years I have been accustomed to hear about the same class of questions asked by consumers, why it was that Asparagus, a vegetable that was always in good demand, and usually commanding high prices, was not more generally cultivated by farmers, as well as gardeners, situated favourably, and accessible to good markets?

During these twenty years I have been engaged, more or less each year, in growing vegetables for market, and at different times have known each and every kind of vegetable grown to any extent for market to be a "drug," with the single

exception of asparagus, which so far has always been in good demand, and that at paying prices.

There are few persons who have been engaged on an extensive scale in "truck-ing" who have not been compelled to sell, in "bad seasons," a part or the whole of a crop for less money than it cost to produce it. This would apply to the whole list of vegetables, leaving out asparagus, which during such dull seasons and poor markets is generally made use of by those who grow it to work off other kind of vegetables, that is, in case a grocer wants two or more dozen of asparagus, to get it he would be obliged to buy a portion of whatever the grower had on his wagon at the time. In this way the gardener who had an abundance of asparagus would not lose so much in the sale of his crops in dull seasons as he who was not so situated.

Within the past few years more attention has been given to the culture of asparagus, and it is not rare now to find fields of from two to seven acres in different sections devoted to asparagus for New York and other large markets. Some of these new plantations have already begun to yield, and still prices are not in the least affected, but on the contrary have advanced. The past season growers estimated the yield was above an average one, and still prices ranged higher than they have for many years. This condition of matters is quite encouraging for those who have young beds, or are about to embark in this branch of gardening with a view to profit.

To be successful in the culture of asparagus for market, there are a few essential points to be fully considered and carried out before any hopes of success can be entertained.

The first is a selection of the most suitable soil and situation. The second, a thorough mechanical preparation of the soil before planting, and third, heavy manuring.

The location of the bed is important, from the fact that when asparagus first come into market, it sells briskly at from \$5 to \$8 per dozen bunches, and frequently as high as \$12 per dozen, if the spears are large and the bunches carefully made. From these prices it gradually falls, as the supply increases, until it reaches \$2 per dozen, and very seldom goes below this price, although at \$1.50 per dozen asparagus will pay a handsome profit.

When the soil has only been indifferently prepared, and poorly manured, earliness of the crop and large size spears cannot be expected, and as a matter of course, under such circumstances a large share of what would be the profits are not realized by the producer.

SOWING THE SEED.

Asparagus seed should be sowed in the Spring, in a bed made deep, mellow and

rich. When the surface of such a bed is raked over, removing any stones or other obstructions, then shallow drills should be opened about one inch deep, and a foot apart. The seed is sown thinly by hand in these drills, and then covered by raking the bed with wooden rakes, drawing them in the direction of the drills. Fresh seed will sprout in two weeks from the time of sowing, in favorable weather. Seed older than one year will take longer to germinate, and if more than three years old, is unsafe to sow with any certainty of its ever coming up.

It is a good plan to scatter some radish seed in the drills at the time of sowing the asparagus seed. The radish will germinate and come up in a few days from the date of sowing, marking the lines of the rows. This will give a chance to run a scuffle hoe between the rows, destroying any weeds that may appear, and keeping the surface loose until the asparagus plants are well up. Then the spaces between the rows should be disturbed frequently and no weeds or grass allowed to grow. Under favorable circumstances well grown one year old plants will be strong enough for transplanting in the permanent bed. Plants older than two years should not be planted, for more than likely they will fail to give satisfactory results. Those who only want a few hundred plants to make a family bed, will find it cheaper to buy them from some responsible person than to raise them from the seed. One pound of seed will sow a bed 20 by 100 feet, and if the seed is fresh will give about 15,000 plants.

PREPARING THE GROUND.

When properly made, an asparagus bed will produce paying crops for a quarter of a century, under good annual treatment. There should be no short-sighted economy practiced in putting the ground in order. If the ground selected is naturally wet, or likely to become so, then by all means have it thoroughly underdrained. Asparagus can only be grown to the highest point of profit on soil that is free from stagnant water, thoroughly pulverized to a depth of at least twenty inches, and then heavily manured. There will be more satisfaction in planting only a quarter of an acre on this thorough scale, than in planting an acre under indifferent preparation and poor manuring. The ground should be thoroughly ploughed and subsoiled both ways, and then plenty of well rotted yard manure plowed under. The more manure that is applied, the more productive the yield will be when the plants are fairly established. Barn-yard manure, composted with the salt and lime mixture, will be found an excellent manure for asparagus.

PLANTING.

It has long been a mooted question whether the Fall or Spring was the best

time to plant an asparagus bed. In most cases more will depend on the condition and tilth of the soil than the time the roots are planted. Where the soil is heavy and retentive of moisture, and long and severe Winters, undoubtedly the Spring is the best time. But on sandy and clay loam, and as far south as Delaware or Virginia, Fall planting will do just as well, and often better, than Spring planting under similar circumstances. When the ground is prepared by frequent plowings and subsoiling for field culture, or the garden spot thoroughly trenched with the spade, then the furrows should be run but three inches deep, and three feet apart each way. A single plant is set at each intersection, being careful that every root of the plant is stretched out to its full length, and then covered with not more than four inches of earth, if planted in the Fall, and only about two inches when set in the Spring. This light covering at first, or until the plants have started to grow, is the safest plan to follow. When the young shoots are three or four inches above the surface, then, by running a cultivator between the rows, the loose earth will fall toward the row of plants, adding a couple or more inches of covering above the crowns of the plants—making in all from four to five inches in depth.

In garden culture, this second covering may be drawn over the rows by the hand hoe, any time during the Summer. A cultivator should be kept going between the rows often enough to prevent the growth of weeds in the bed. This will be found the cheapest method of culture. When planted in the Fall, the rows should have a light mulch of barn-yard manure put on in November, and in the Spring following this mulch, with an additional quantity of manure, either barn-yard, fish, guano, bone dust, or superphosphate, should be applied, and all turned under early in April, or as soon as the ground is dry enough to work.

Annual dressings of common salt will improve the quality and increase the size of asparagus. There need be no apprehension of danger from the application of salt to asparagus. I have frequently put on as much as two inches in thickness, on different spots, on an asparagus bed, and then the young shoots came through this coating of salt without apparent injury. A dressing of twenty-five or thirty bushels of salt to the acre on an asparagus bed every second year, will be quite enough, in connection with the annual coating of barn-yard, a compost to be applied in the Fall or Spring, as circumstances may dictate.

No asparagus should be cut from the bed the first or second year. Some growers carry this so far as not to cut any until the fourth year from the time of planting. In case the plants have grown

vigorously, a third of a crop may be cut without at all injuring the plantation the third year. The amount taken off the third year depends altogether on the condition and vigour of the plants. In case they are weak, it would be poor policy to weaken them still more by cutting for market or home consumption too soon. In the Fall of the first year it is a good way to throw a shallow furrow from either side towards the rows, and then rounding them off with a hoe or rake. This slightly elevated ridge will dry out sooner in the Spring than a flat surface, and asparagus treated in this way, will often make a difference in earliness of five or six days, which is an important item to those who grow it for market.

Early asparagus always brings higher prices than what comes in late in the season, and, therefore, every advantage by locating, character of soil and treatment, should be taken into consideration by those who are about its culture for profit.

VARIETIES.

There were only two varieties generally cultivated for market purposes until quite recently. These were the green and purple-topped. The identity of these two was frequently doubted by intelligent gardeners, and the size and difference in colour attributed to location, soil, and heavy or light manuring. Two years ago, S. B. Conover, of New York, introduced a variety under the name of "Conover's Colossal." For this variety Mr. Conover claimed extraordinary size of spears, and that it was equal in quality and productiveness to those varieties that were in general culture for market purposes. This claim had to be tested by practical growers before discarding old and tried for new and untried kinds. Many doubted that it was any other than what was cultivated on Long Island, and other asparagus producing sections. I have watched the "Colossal" closely for two years, and firmly believe it is the best variety of asparagus that we have for field or garden culture. The spears will average twice the size of the common kinds, and the "Colossal" is equal, in my estimation, in quality and productiveness to any variety that I am familiar with. Plants at one year old will average as large as plants two years old grown on the same soil and under the same treatment, of the green or purple. In another article on this subject I will have something to say on the profits of asparagus culture.—By P. T. Quinn, in N. Y. Tribune.

The *Gardener's Monthly* for February, edited by Thos. Meehan, Brinkloe & Marot, Publishers, 23 North Sixth Street, Philadelphia. \$2.00 a year.

The contents of this valuable Horticultural Magazine are: Chromo Colored

Plate of *Bouvardia Vreelandii*—Hints for Flower and Fruit Garden and Greenhouse—Communications:—A Flower Show in the Year 1830. By Mr. W. T. Harding, Phila.—Remarks on the *Daphne Cneorum*. By Mr. Antoine Winter, West Grove, Pa.—On the Raising of New Varieties of Potatoes from the Seed-Ball. By Mr. Geo. Such, South Amboy, N. J.—Evergreens for Winter. By Walter Elder, Phila.—Discovery of Ancient Bones at Waukegan, Ills. By Mr. R. Douglass—Well Ripened Tomatoes. B. L. B., Phila.—Bud Variations. By Mr. Charles Arnold, Paris, Ontario, Canada—New Foreign Grapes. By Mr. James Taplin, South Amboy, N. J.—Fungi and its Structure. By Mr. Josiah Hoopes, West Chester, Pa.—Editorials: Travelling Recollections—*Bouvardia Vreelandii*—Hot-Water Boilers. With a large variety of news items both Foreign and Domestic.

Communications.

ENCOURAGE THE BOYS AND GIRLS.

OAKFIELD, Feb. 7th, 1871.

To the Editor of the Journal of Agriculture:

There is an article in the *Canada Farmer*—"Encourage the Boys and Girls," on the 19th page of the January number. It is well worth republishing in your Journal, as it hits one of the blots of our Country Life.

Yours, J. W. L.

"SIR,—We farmers in Canada are too prone to consider our own claims on our children, rather than deal with them as we would probably like to be dealt by. Our sons are expected to remain contented on the farm, working for bare food and clothes until they are twenty-one, and then they are allowed to begin for themselves. They naturally feel that, up to that age, all they have ever got by working on the farm is entirely deficient in encouragement, so far as it is likely to reconcile them to the same course of life; and they also feel that they are fit for nothing else. They have not education nor business knowledge to enable them to go to some other avocation, and consequently are dissatisfied with the past and quite undecided for the future; and this feeling applies not only so far as their prospects of ultimately possessing a farm of their own goes, but causes them also to be quite undecided as to the advisability of following agricultural pursuits at all. The consequence is that we continually hear the parents say, "Our boys are going away to the States, and cannot content themselves on the farm in Canada." The father has never done anything to make them contented here or on the farm. The boys rarely have any good clothes, and still more rarely any money, and what

clothes or money they have had has (with the exception of the most ordinary clothing supplied at home) been the result of working out for some one else, who has paid them for their labour the same as they would have paid any other hired man. This course is bad in every way.

"Young men, about the time of what is called coming of age, naturally wish to marry and have a home of their own; and experience has shown that all such ought to marry and settle in life if healthy and inclined to do so; but at the same time they must have something more than the wife—which certainly usually can be obtained for nothing. Such is not the case, however, with farm stock or furniture; all this must be bought and paid for, or obtained on credit, and these very debts so contracted generally cause a sour, unpleasant, and often regretful feeling at ever having married at all, and a wish that they also, like some other neighbour's son, had moved away to some other country or locality, where no thought of marrying at home could from circumstances have been entertained, and where all their earnings could have been expended on themselves. These instances of leaving home and obtaining employment elsewhere, rarely ever end well. They never, or very seldom, do result in anything like a home far away; but the young man moves from place to place, usually with plenty of money for absolute necessities, but with expenses naturally much increased; and he generally ends after 10 or 15 years absence, with a return visit to the old homestead, having accumulated much knowledge of such a kind of vagabondish life, and any quantity of insight of taverns, tobacco, drinking, and generally gambling experiences. If he now marries and settles at home, as he often does, he is a pest, and naturally demoralizes all the young men who are, like himself in former years, unsettled in their future prospects. In the relation of his 15 years' absence, of course, there will be much to amuse and interest such hearers in these recitals. In these tales he rarely relates the pains and difficulties he had encountered, or if he does, they afford only the more interest and excitement to the audience.

"Now this is true, and thousands know it to be true, and regret when too late that they did not cause the boy, when yet young, to have an interest direct in all that was done on the farm, or at least in something that was continually being raised or provided for him, to be appropriated to his use when the time comes for him to require them. To do this will absolutely pay the father well; for every young man of, say 18 to 23, is worth \$120 to \$140 a year and his board, and five years of this saving would accumulate \$600; and any lad would consider himself rich with such a sum, and, in fact,

would not desire to have so much laid by for him; and to avoid temptations this amount need not be in money, but can be paid in cattle, teams, bedding, and a variety of necessaries, all of which can be raised on the farm, and to which for the most part the son's own exertions have mainly contributed. The same principle applies to girls. They must have nice dresses: others do, and they must, or they will at once hire out to those who will not require them to work any harder, and who will pay them sufficient to obtain them. We all know that sometimes on a farm there is little enough to sell to make both ends meet, even where all is sold that can be sold; but we also know that under such circumstances, all grown up children who are able and willing to work, see just as well as we older people—that there must be something wrong somewhere or their labour must be unprofitably applied; for if they hire with some other person they can get plenty of necessaries, and whilst they remain at home their labour is absorbed and they cannot do so."

Reports of Agri. Societies.

FIRST ANNUAL REPORT OF THE CLYDE RIVER AGRICULTURAL SOCIETY.

The Committee in making this, the first annual report, would congratulate this and the surrounding communities upon the organization and so far successful working of their agricultural society, and express their hope that it will be maintained as one of the permanent institutions of the place.

During the past year the society consisted of forty-two members, who have contributed one dollar each. The funds of the society have been appropriated to the introduction of agricultural implements, garden and field seeds, and stock. Most of the seeds were divided equally among the members—some sold. The implements were sold, with the exception of the seed sower and cultivator. One bull, one year old, three-quarters Alderney, has been bought.—Mr. B. Crowell has engaged to keep him for the society six months for fifteen dollars.

The balance of funds in the hands of the Treasurer is \$13.22.

The Committee have engaged two pigs—Chester White—which will be delivered about the 29th of this month. They will be sold, under conditions, to the highest bidder among the members of the society.

The results of the society's operations we believe to have been highly beneficial, in directing more attention to agriculture and the improvement of stock.

For the coming year we propose a County Agricultural Exhibition. We advise the appointing of three persons, who, along with a like number from the other societies, can form a joint committee to take the matter into consideration and make the necessary arrangements as soon as possible. We urge this, as we believe it would be one of the best means of stimulating the people of the county to de-

velope its agricultural resources, and improve its productions and stock. But it will take not merely one year's efforts, but continued exertions to make that improvement which is so desirable.

We would suggest the desirability of increasing and husbanding our resources for the importation of improved breeds of cattle, sheep and swine. Less will be needed the coming year for the introduction of seeds. The seeds obtained by the society have given general satisfaction. Without going into all the particulars, we may mention that the *Early Rose* potato has shown its superiority over the ordinary sorts. While they have, to a great extent, been a failure this year, it has generally yielded a large crop of sound tubers. The Norway oat seems to be worthy of "favorable mention." Russian wheat was a failure; perhaps it was not sown early enough.

This society along with the other societies of the county, has much work to do in stimulating the people to develop its agricultural resources. These resources are by no means so small as at first sight they might appear, and their development has scarcely commenced. Though a large part of the county presents a sterile appearance—its soil rocky—sandy ridges, and plains interspersed with bogs, the staple scenery in many places—not by any means inviting the expenditure of labor and capital, yet there is considerable of good soil easily cultivated. And these bogs, so uninviting, are not so useless as many think. Their black mud composted with stable manure, is just the fertilizer needed for the sandy upland. Many of these swamps now so useless might be converted into profitable cranberry plantations. The cultivation of this valuable fruit is certainly worthy of the attention of the people of Shelburne county.—Where the cranberry grows spontaneously to such perfection and in such abundance some seasons, it would certainly repay skilful cultivation. This subject should be ventilated and agitated.

Most of this county is well adapted to the growth of apple trees. By their cultivation most of the land that is rocky might be made profitable. Such soil would no doubt pay better if planted in trees than if cleared up for the production of ordinary farm products. Shelburne, away from the sea shore, is a tree growing county, and attention should be directed to the nurturing of fruit and forest trees. A little consideration will show that Shelburne is capable of being made to produce fruit in large quantities. In its natural state, with its cranberry bogs and oak groves, what might it be under skilful cultivation.

To the development of the agricultural resources of this part of the county let us address ourselves; and in order to do this we must lay aside all mere personal and selfish considerations. Let us contribute to the funds of the society not for mere gam, but that we may aid the general cause. Let our contributions be gifts to that cause which it espouses, and let us not confine our subscriptions to the dollar required by law, but make them as large as we can afford for that purpose; and though we may not immediately and directly reap a return, yet in the long run we will see the wisdom of such a course.

JAMES MCKAY, *Pres.*
M. G. HENRY, *Sec'y.*

MINUTES OF THE ANNUAL MEETING OF
CLYDE RIVER AGRICULTURAL SOCIETY.
At the appointed hour the meeting wa

constituted by the President taking the chair. The Secretary then read the report, which was approved and received.

After some conversation upon the report and matters connected with the society's operation for the past year, the meeting proceeded to the election of officers for next year. The following persons were proposed and elected:—*Pres.*, James McKay; *Vice Pres.*, B. Crowell; *Sec'y. and Treas.*, M. G. Henry; *Directors*, Wm. McKay, David Swain, James Nelson, Peter Sutherland, George Thomson.

The proposal in the report respecting an Exhibition was approved, and the suggestion of the committee adopted,—three persons being appointed to confer with a like number from the other societies in the county, and take measures for securing, if possible, an Agricultural Exhibition next autumn. The persons appointed for that purpose were—Wm. McKay, Matthew G. Henry, and Peter Sutherland.

It was agreed that the conditions under which the pigs introduced by the society were to be sold, should be, that they be kept within the bounds of the society for one year for breeding purposes.

Upon the Secretary refusing to accept any remuneration for his work, a cordial vote of thanks was passed. It was agreed that the Secretary order five copies of the *Agricultural Journal*. The meeting then adjourned until the first Tuesday of February.

JAMES MCKAY, *Pres.*
M. G. HENRY, *Sec'y.*

AMHERST AGRICULTURAL SOC'Y.

Agreeably to request at the last meeting, the Board of Directors of this Society made the necessary arrangements for an Exhibition, which was held, as you are aware, on the 22nd day of October last.

With a membership of forty-six and thirty-five competitors, we can, with every reason, claim the Show to have been a success. Your Board was greatly disappointed at so small a membership. After offering so very liberal a prize list—by far the most liberal ever offered by this Society—we confidently anticipated a very large increase to our numbers.

The Amherst Agricultural Society ought to be kept up so efficiently that the funds would warrant the annual expenditure of a sum sufficient to fill up a very creditable prize list, and leave a handsome balance with which to purchase different kinds of improved stock. This vicinity is lamentably deficient in good horse stock. The same may be said of our sheep and pigs. The Agricultural Society should be the means of remedying this said deficiency. Unless a lively interest is manifested in the Society by the farmers of the surrounding country, it can never accomplish these beneficial and legitimate results.

Our funds were so heavily drawn upon in making out the prize list, that we were unable to even make the attempt to purchase any of the stock recently imported and sold by the Central Board of Agriculture.

The Treasurer's account will show the balance from last year to have been \$99.99; the receipts for the year \$112.50, making a grand total of \$212.50. The expenditure for the year has been \$163.07½, thus leaving a balance in favor of the Society of \$49.21½.

The following are the officers and directors for the ensuing year:—*Pres.*, Hon. R. B. Dickoy; *Vice-Pres.*, Thos. R. Black, Esq.;

Treas., Wm. F. Cullen, Esq.; *Sec'y.*, Hiram Black; *Directors*, Torrey Bent, John Atkinson, Charles H. Bent, Daniel Freeman, and Thompson Keillor.

HIRAM BLACK, *Sec'y.*

FENWICK AGRICULTURAL SOC'Y. OF NOEL AND MAITLAND.

The Society received from the Central Board forty-five bushels of wheat, called *Fyfe*, which was sold to members at cost and charges; also a few bushels Black Sea wheat; also, one hundred pounds Alsylke clover seed,—each member who applied got 1 lb. gratis and 1 lb. at cost and charges, the balance was sold at 50 cts. per lb. Of the sheep bought at Richmond three years ago, there are only two now living, and one of these has been purchased by George Smith, Esq., Shubenacadie, about a year ago; these two are all the rams the Society now owns. The White Chester boar, bought at Richmond three years ago, is still the property of the Society. The pig bought at Onslow for the Society was sold to George Smith, Esq., for fifteen dollars. We have bought another White Chester boar at the late sale of imported stock at Richmond, for \$25. We have received from the Board of Agriculture 60 lbs. Norway oats, which was given to members to sow, the Society to have the product by paying fifty cents per bushel. A. M. Crow got 15 lb. seed, and raised from it 32 bushels; David McL. Faulkner, 15 lb. seed, 20 bushels; Asa Hamilton, 15 lb. seed, 15 bushels; W. Y. O'Brien, 15 lb. seed, 3 bushels—making in all 70 bushels. The *Fyfe* wheat, imported by the Board from Canada, produced the best crop of any wheat sown along this shore for the last three years. Black Sea wheat a failure here. Wheat this season was a heavy crop. Of straw, late sown not so well filled as last year, early sown good. Oats about an average crop. Potatoes about average crop, but rotting very much in the cellars. Other root crops average. Buckwheat about average. Hay nearly an average crop.

The following are the officers for 1871:—*Pres.*, Alexander Densmore; *Vice-Pres.*, George Smith; *Sec'y.*, George Densmore; *Treas.*, Thomas Hunter; *Directors*, Osmond O'Brien, Stephen Putman, Daniel Ross, Capt. A. A. McDougall, and Joel Densmore.

GEORGE DENSMORE, *Sec'y.*

MIDDLE RIVER AGRICULTURAL SOCIETY, VICTORIA.

The Directors of this Society have much pleasure in reporting that the financial state of the Society is quite satisfactory, and that the utmost harmony and cordiality exists among its office-bearers and members. This Society has now entered upon the twenty-sixth year of its existence and we are happy to say that notwithstanding the many troubles and difficulties with which it had to contend while in its infancy yet these are now overcome, and instead of manual labour destroying bone and muscle this is now surpassed by the use of horse-power and labour-saving machinery, an improvement which neither we nor our forefathers ever expected in this locality. This Society having imported in the summer of 1869 a superior Mowing Machine from the establishment of Messrs. A. P.

Richardson & Co., Worcester Mass., its admirable working and the saving of labour and time has induced them to import two more this season from the same establishment, so that taking a retrospective view of the proceedings of this Society from its institution to the present every experienced agriculturist must readily acknowledge the wonderful progress made. These improvements are chiefly attributable to the liberal support received from the Board of Agriculture from year to year, and their zeal in the promotion of the cause of agriculture generally throughout the Province.

The result arising from the importation of thorough-bred stock in this Society is no less visible than that of improved machinery: the Alderney Bull purchased at the Provincial Exhibition of 1868 now proves what he was represented to be; as also the change made by the Rams purchased at the same time, so that our stock of sheep now shew a great change, and the quantity as well as the quality of the wool from the present yields at least double that produced from the old degenerated breeds. Our pigs have also undergone a wonderful improvement by the introduction of the Berkshire Breed, yielding double the quantity of pork and at a far less cost of feeding. This Society has this winter purchased three of the pigs sent down here by the Government, one Chester Boar and a Boar and Sow of the Yorkshire Breed.

Whilst acknowledging these improvements the Directors feel grateful to a kind Providence in bestowing on this locality a bountiful harvest notwithstanding the dearth that threatened this part of the country during the months of May and June, but the copious showers of warm rain which fell so abundantly in July and August have remedied the threatened evil, and in order to give a detailed account of the state of the crops during the past season we begin with—

Hay.—This crop is generally one-third less than that of last year, particularly on sandy soils owing to the unusual growth of May and June, but on uplands and loamy soils the yield is better.

Wheat.—This crop seems to be a total failure and consequently very sparingly sown, and what little was put in the ground was nearly destroyed by the fly.

Oats.—This crop yielded well both in grain and straw, so that the deficiency in the hay crop will be balanced by the extra average of the oat crop, so that in the opinion of your Directors, the average yield of oats within the bounds of this Society will be double that of last year.

Barley.—Owing to the failure in the Wheat crop this crop is more extensively sown, and this year yielded a paying crop.

Buckwheat.—This crop has yielded well this season and is now sown on a larger scale.

Potatoes.—This crop has turned out wonderfully, and in many instances averaging fifteen to the one planted.

Green Crops.—Turnips a total failure owing to a grub which destroyed the roots early in August, but carrots and other root crops have done well.

The Office Bearers of this Society for the ensuing year are as follows:—*Pres.*, John McDonald, Esq.; *Vice-Pres.*, Hector Campbell; *Sec'y.*, John McLennan; *Treas.*, Kenneth McDonald; *Directors*, John McDonald, Edward McLeod, Wm. Cain, Donald McQuain, and Donald McLean.

JOHN McLENNAN, *Sec'y.*

UNION AGRICULTURAL SOCIETY
EAST CORNWALLIS.

This Society has held the two regular quarterly meetings according to the constitution, since the last annual meeting, at which the ordinary business of the Society has been transacted and recorded.

It has held also one informal meeting, and one special meeting, regularly called, to make arrangements for the purchase of a Bull at the Provincial sale, which has resulted in securing the very fine bull, Bell Duke of Markham.

There has been added to our Society during the past year thirty members, which has swelled the whole number to the rather uncommonly high figure of eighty-nine.

In April last we purchased the bull Lobo Lad at \$100, which is paid for; and three bulls were kept during the summer months until the September quarterly meeting, when the white bull, Yeoman, was sold to Edwin Chase for \$33. The Society now owns three bulls, namely, Sir William, Lobo Lad, Bell Duke of Markham. The bulls have been patronized well, but owing to the failure of cows to be with calf, a small return may be expected for their work during the summer months.

Bell Duke of Markham having cost \$205, has involved the Society considerably in debt, there not being any funds in hand to meet this purchase except the proportion of the Provincial grant coming to this Society, the warrant for which has not come down to me, and therefore does not enter into this year's funds.

We have gradually increased in numbers and in available funds and property during the past four years, and there appears to be now a greatly increased interest manifested by the members and the public generally in the objects of an Agricultural Society. Some very fine young stock is now to be seen around the country as the result of the efforts of this Society.

We have not held any County Exhibition the present year, thinking we could employ the funds at our disposal to better advantage by purchasing stock of improved breeds than in any other way. We accordingly sent a Committee to Halifax to attend the sale of imported stock, that Committee purchased the two year old bull Duke of Markham, the Committee were also requested to purchase a pig if they thought it advisable, but from some cause did not.

Some of the wheat and Norway oats which were imported by the Board, and purchased by individual members of the Society, did very well in most instances; and we believe that wheat and oats both were a fair crop generally.

Barley.—A very good crop for the quantity sown.

Rye.—Not enough sown to be able to report on.

Potatoes.—The Early Rose we think will prove worthy of cultivation, as also the Garnet Chili, but owing to the great quantity of rain there is general complaint of rot, some varieties very bad.

Hay.—On upland and interval was a fair crop, and also on dyke that was not overflowed with water, but the high tide of 1869 damaged a large portion of dyke in this County, some a total loss.

Vegetables of all kinds were an average crop.

Hemp.—We are not aware of any hemp seed being sown in this County.

Fruit was much damaged by the wind in September; it is estimated that from one-fourth to one-third of the entire crop was lost. But notwithstanding the loss the fruit was of excellent quality; that exhibited at the Fruit Growers exhibition was seldom if ever equalled in this County.

The Treasurer reports that he has received from all sources during the past year, not including the Provincial Grant for 1870, nor any of the fees for the services of bulls during last summer, the considerable sum of \$425.50, which has been expended and paid out according to the following account:—

Received from 85 Members, annual dues	\$ 85.00
" for services of Bulls, &c	339.50
	\$425.50
Purchase of Lobo Lad	\$100.00
Keep of Bulls and incidental expenses	313.50
Secretary and Treasurer's fee, voted	12.00
	\$425.50

The officers elected for the coming year are as follows:—

Pres.—Leander Rand.

Vice-Pres.—John E. Ells.

Sec. and Treas.—Jonathan Rand.

Council.—Asahel Bently, John Thomas, John T. Newcomb, George Lockwood, Thos. O'Brien.

TATAMAGOUCHIE AGRI. SOCIETY.

The Society met on 6th December. The Treasurer submitted his accounts.

The following officers were then appointed for the ensuing year:

Pres.—E. D. Roach.

Vice-Pres.—Jas. Clark.

Treas.—John Clark.

Sec'y.—W. A. Patterson.

Directors.—David Nelson, Robt. Bell, Dan. Morrow, David Fraser, John Borymon.

W. A. PATTERSON, *Sec.*

WINDSOR AGRICULTURAL SOC'Y.

The annual Fair and Cattle Show of Windsor Agricultural Society was held on Tuesday, the 11th inst. The attendance was better than any for the last seven years.

In neat cattle several pairs of good fat oxen were shown. A pair of grade Durhams six years old, bred and owned by Mr. John McHesley, one weighing 2140 pounds, the other 2135, and which have been tall within a very short time in constant work, were very much admired for their fine form, good points and apparently easy disposition to take on flesh, proving the value of short horn blood for fattening purposes.

The stock in working oxen, bulls and cows, taking them as a fair specimen of the district without any extra preparation, were very creditable.

Young stock of two years old and under were very good, and gave promise of much improvement in their department as they arrive at maturity.

There was a fair show of sheep, but nothing in their appearance to show improvement on some past years.

The show of pigs was small but some very good specimens were on the ground.

Grain prizes of all descriptions were well competed for, and the samples of excellent quality.

Field roots in mangels, beets, carrots and parsnips were shown in abundance; persons present who have had good opportunities of forming an opinion pronounced the collection quite equal to any that has been produced in the Province.

The day was fine and passed off pleasantly, impressing upon those in attendance the fact that in defiance of long winters and short seasons well directed industry and perseverance can obtain satisfactory returns from the soil of our Province.

Windsor, 14th October, 1870.

YARMOUTH TOWNSHIP AGRICULTURAL SOCIETY.

The Society held its annual meeting on Tuesday, Dec. 6th, as prescribed by law. Treasurer's report presented and passed. Voted to re-organize and appoint officers for ensuing year.

Appointed as follows:—

Pres.—John Patten.

Vice-Pres.—R. K. Rose.

Sec'y.—James Crosby.

Treas.—Geo. M. Patten.

Managing Committee.—Stephen Churchill, Chas. Rogers, John McCormach, Charles Porter and William Murphy.

The Society had no exhibition the past season, for the reason that the purchase of a full blood Ayrshire Bull absorbed the funds, and we at present owe about 30 dollars on the bull, which can be paid after drawing Provincial Grant for 1870. We have at present on hand the bull above mentioned costing \$80, and a pure blood Alderney three years of age, a very fine animal, the stock from which is much prized, worth probably \$100.

JAMES CROSBY, *Sec'y.*

MAHONE BAY AGRICULTURAL SOCIETY'S FAIR AND CATTLE SHOW.

The Fair and Cattle Show of the Mahone Bay Agricultural Society was held near Henry Schmar's store. It was the first held since the Society was organized. It turned out very well for the first. The show of cattle was small but there were some very fine oxen and cows. The sheep fair but very few. The fowls and ducks very fine, the half-bred Murcovy extra; they surpass the thoroughbred. The vegetable department was very good. There was a very fair sample of apples also.

GEORGE DUNCAN, *Sec'y.*

[We cannot find room for the List of Prizes.—Ed. J. A.]

The officers of the Mahone Bay Agricultural Society beg to submit the following report for the past year. They cannot report much progress since our last annual meeting with the exception of the Fair and Cattle Show, which was small but very creditable for the first since the Society has been organized. The stock from the bull now owned by the Society is likely to prove very good, his calves appear to be thrifty and well formed. At the last meeting the Society decided to purchase two ewes and a ram. The President attended the sale of the imported stock, but there were no sheep there and he proceeded to Windsor and bought three ewes and a ram, which will we hope prove satisfactory. There is nothing particular to report.

The crops we are pleased to say, have been an average as respects the grain and hay. The potatoes proved better than for many years past, and God has been pleased to give us one of the finest seasons ever known, for which we have reason to be very thankful to the Giver of all good.

The following are the officers elected for the next year.—*Pres.*, B. Zwicker, Esq.; *Vice-Pres.*, William Kedy; *Sec'y.*, George Duncan; *Treas.*, Joseph Zwicker; *Directors*, Jacob Ernst, E. B. Hyson, John Mader, Henry Schmare, Joseph Mader.

B. ZWICKER, *Pres.*,
GEO. DUNCAN, *Sec.*

Miscellaneous.

VEGETABLE GARDEN.

PREPARATION OF THE GROUND.—To secure a fair return in seasonable crops, for the labor and outlay invested, it is essential that the soil of the Vegetable Garden should be well under-drained, thoroughly trenched or subsoiled, and enriched by a judicious application of fertilizing material. It is still the current opinion, based on experience, that for all purposes, well composted barn-yard manure, when available, is the best material. We do not deny, however, that several of the concentrated manures, now manufactured, are useful and convenient, especially for a succession of crops.

The exposure of a garden has much to do with the early maturity of the crops; an exposure to the morning sun is desirable. The soil must be in a friable state to secure the prompt vegetation of the seeds, and the destruction, or rather, prevention of weeds, is one of the most desirable results of frequent stirring of the surface. Soils are susceptible of alteration and improvement in texture; heavy clays can be rendered open and porous, and light sandy soils may be consolidated and rendered more retentive of moisture. For all such details we must refer the amateur to more extensive treatises on these subjects.

GARDEN REQUISITES.—There are several aids to the economical management of the garden, which are almost indispensable; one of these is the HOT-BED frame for the forwarding of plants for early planting. A frame may be made of various sizes, according to the size of garden, from four sashes upwards. The length of sash is generally seven feet, by three and a half wide, the size of glass six by eight inches, making the entire frame of four sashes, fourteen by seven feet. The frame should have a southern or south-eastern exposure, should be made up with fresh horse manure and a few leaves mixed with it; this must be laid in a heap preparatory to being used, and when in a proper state of fermentation, prepared for the reception of the frame. A few inches of rich loamy soil must be spread over the manure, then cover the frame with

the sashes, and after standing a few days to a low the rank heat and steam to pass off, the seed can be sown. Where the ground is well drained, a better plan is to dig out a space the size of the frame, from one to two feet deep, according to the season and the heat required, in which the manure is placed, care being taken to pack it firmly and evenly.

In addition to the Hot-bed frame, mats or shutters will be required to cover the sash during cold days and nights. To work the garden, the necessary implements—spade, fork, shovel, rakes, hoes, trowel, garden-line and reel, watering pot, and wheelbarrow are the most important.

—From Dreer's Calendar.

A SELECTION OF HARDY SHRUBS.

As the season will soon be at hand when most sorts of hardy trees and shrubs can be transplanted, we give a selection of twenty-five species and varieties as a guide to such of our readers as may desire to beautify the surroundings of their homes. A few of them are comparatively well known, but most of them are of recent introduction, none of them are coarse-growing or of uncivilized appearance, and all are hardy as far north as Albany, at least.

After planting them a mulching two or three inches thick of salt hay or long stable litter should be spread over the soil for two or three feet around each plant, according to its size, and allowed to remain the succeeding summer.

Amygdales punilla, fl. pl.—The Double-flowering Almond. This plant is especially desirable on account of its early and profuse blooming. It grows about thirty inches high, and spreads somewhat. There is also a double white variety.

Kerria japonica, fol. var.—A variegated-leaved variety of the well-known *Corehorus*. It is of recent introduction from Japan. The foliage is edged with white; the plant is a slender grower, not being more than two feet high, and spreads freely, causing the plant to assume a tufted appearance.

Calycanthus floridus—Allspice Flower, or Sweet-scented Shrub. This is a well-known plant, yet it is not seen nearly as often as it should be. This species is the best, as it is very fragrant, and not as strong a grower as some of the others.

Ribes Gordoni, a beautiful hybrid variety of the Missouri Currant, having large racemes of fragrant red and yellow flowers. It blooms very early in the spring.

Deutzia gracilis is a dwarf-growing species introduced a few years ago from Japan, and much grown as a green-house plant, although it is perfectly hardy. It produces a profusion of pure white flowers, and grows about two feet high.

D. scabra is a stronger-growing species, growing four or five feet high, and bearing a profusion of pure white flowers.

D. crenata, fl. pl., is one of the finest shrubs in cultivation. The flowers are double, white on the inside, and red on the outside. It is a most profuse bloomer, and requires plenty of room, as it is a strong-grower—when well established attaining a height of over six feet.

Forsythia viridissima, a well-known shrub, whose bright, golden-yellow flowers appear

with the first unfolding of its leaves. Of all the early-blooming shrubs it is the finest and most desirable. Two other species have been recently introduced, but neither of them is equal to this species.

Exochordia grandiflora, a most beautiful shrub, growing about six feet high, blooming in May. The flowers, which individually are about an inch in diameter, are white with a green centre, and are produced in long, loose panicles. Unfortunately this elegant shrub is very difficult to propagate, and is therefore not readily to be had except of our principal nurserymen. It should be found in every garden.

Hydrangea quercifolia, the Oak-leaved Hydrangea, has strongly-marked handsome foliage, and produces large panicles of white flowers during the month of July. It makes a handsome specimen plant for a lawn.

Hydrangea dentataefolia, or *H. paniculata grandiflora*, is a species of recent introduction from Japan, with leaves resembling those of some species of *Deutzias*, and during August bearing immense panicles of pure white flowers, which afterwards change to pink, and finally so a purplish-brown color. It is one of the most valuable additions to our list of shrubs that has been made for many years.

Syringa persica, or Persian Lilac, is of a more delicate, twiggy growth than the common lilac, and produces larger heads of flowers of irregular shape, and is more suitable for small gardens. There is also a white variety that is very desirable, and is of still dwarfier habit. Both should be in every garden.

Magnolia purpurea, or Chinese Purple Magnolia, is an elegant shrub with bright glossy foliage and large, purple, tulip-shaped flowers. It is the better for being strowed up during the winter north of New York city, until it has attained some age, and the wood has become hard.

Prunus sinensis, fl. pl., or Double-flowering Chinese Plum, resembles the Double-flowering Almond somewhat, but is of stronger growth. It is a lovely, ever-blooming shrub with a profusion of snow-white flowers.

Cydonia japonica, or Scarlet-flowered Japan Quince, is a well-known early-blooming shrub, producing a profusion of deep scarlet flowers. It is indispensable in every collection.

Spiraea prunifolia, fl. pl., *S. Reevesii*, fl. pl., and *S. callosa*, should be in every shrubbery. The first two have pure white flowers, and the third, bright pink flowers in large flat corymbs. The first also makes a beautiful screen hedge, being of upright growth and throwing up its shoots thickly from the bottom, and bears clipping well.

Philadelphas inodorus, a species of what is generally known as the *Syringa*, or Mock-orange. This species is of more delicate growth than any of the others, and bears its large pure white flowers in threes and fours along the somewhat slender drooping branches, giving them the appearance of garlands.

Viburnum plicatum is a species of Guelder-rose, or Snow-hall, introduced some years ago from Japan; it is a robust growing shrub, with strongly-marked foliage, and branches spread somewhat horizontally; these produce at each bud a globular head of pure white flowers, which are so thickly set upon the plant as almost to hide the foliage. It is a very beautiful shrub.

Weigela rosea is a well-established favorite, but not seen as often as it should be, for

nothing can exceed its lovely apple blossom-colored flowers intermixed with its lively green foliage. There is a variegated-leaved variety which has lighter-colored flowers; it is one of the best variegated-leaved shrubs we have, retaining its variegation through the heat of summer, and at the same time being free from that sickly appearance which many such plants have. Another variety has lately been introduced under the name of *W. nivea*, which produces pure white flowers; it is very beautiful and useful in bouquets. It must not be confounded with another variety known as *W. alba*, the blossoms of which, as they become old, change to pale rose-color.

Stuartia virginica and *S. pentagynia* are highly ornamental shrubs, but somewhat scarce in the nurseries. They grow from five to six or more feet high, blooming from July to September. The first has pure white flowers, with bright purple stamens; the other has cream-colored flowers. The flowers are very large, from two and a half to three inches in diameter, and very much resembling those of the single White Camellia.

The above collection of twenty-five deciduous flowering shrubs comprise the *creme de la creme* of the catalogues of our leading nurserymen, and we feel assured that such of our readers as may obtain them will be well satisfied with them.—*Harpers' Bazaar*.

DIRECTIONS FOR THE CULTIVATION OF ANNUAL FLOWERS.

Notwithstanding the hardy and permanent character of perennial plants and flowering shrubs, and their peculiar fitness for gardens and pleasure-grounds, where little is needed, which will always make them favorites in every ornamental plantation, the HARDY ANNUALS still have a beauty of their own, and possess qualities and merits which few other plants can claim. However so much we may admire the gorgeous display of the various bedding-plants, now so popular, yet a continuous and uninterrupted show of flowers from June to October cannot be obtained without the aid of the annuals; and if to this we add the claim of novelty and variety of color, we may well claim for the annuals a place second to no other garden-flowers.

The ease with which they are raised from seeds,—the little expense compared with bedding-plants,—their adaptation to all kinds of soils,—the little trouble they give the amateur, the rapidity with they come into bloom (some of them in a month's time), and the infinite number of forms as well as varieties of foliage,—all combine to render these hitherto somewhat neglected plants the greatest treasures of the garden,—“The flowers for the million.”

Who does not admire the glowing colors and rich mottling of the favorite Double Balsam, or the magnificent Double Aster? the Larkspurs, with their stately spikes of blue or white or crimson blossoms? the massiveness and splendor of the Double Zinnias? the feathery spikes of the crimson *Celosia*, which sparkle in the sun? the flaunting colors of the Double Poppies or the Double Portulacas, now resembling miniature roses? And where shall we find flowers that surpass in their delightful fragrance the Stock Gillies and Mignonnette?

Annuals, in fact, are *the* flowers. Not long ago, this, perhaps, could not be said; but, since the treasures of California, of Texas, of

Japan, and New Holland have been opened to us, a new order of things has begun. The florists, too, with fresh material, have worked with a will; and the Double Zinna, Double Portulaca, Double Aster, Double Heddewigii Pink, and a host of others, are the results of their labors devoted to a class of plants destined by their diversity of colors and continuous bloom to hold a prominent place in the affections of all lovers of beautiful plants.

We therefore make no apology for giving a few brief hints on the cultivation of the favorite annuals, as well as some of the showy biennials and perennials, equally important in the decoration of the flower-border.

ANNUALS.

Among florists and gardeners, the term “annual” is given to those plants which are sown in the spring, bloom and seed in the summer, and soon afterwards perish. A few are included among annuals, like the *Marvel of Peru*, &c., because they flower the first year: but they are only annual as regards treatment. By cultivators they have been divided into three classes; viz., *Hardy*, *Half-hardy*, and *Tender Annuals*.—a very convenient classification; and as such we shall treat of them here.

HARDY ANNUALS.

These are so called because they do not require any artificial heat at any period of their growth, and are capable of enduring any ordinary weather from April to November: a frosty morning, not unusually in the former month, or even in May, doing them no injury, if advanced beyond the seed-leaf. Many of them may be sown in autumn; and the young plants will make their appearance early in spring, and flower stronger than when it is deferred till April.

The Soil and its Preparation.—The best soil for annuals, and, indeed, for most flowering plants, whether biennials or perennials, is a light, rich loam, neither too sandy nor too stiff. In such they grow readily, and attain to great perfection of bloom, with but little care; but it is hardly necessary to say that few persons have just such a soil; nor is it possible often for the cultivator to have much choice. He must take such soil as he has, and make the most of it; and, by the application of proper manures, or sand or clay, he can bring it to such a condition as to answer all the purposes of a flower-garden. Moving large masses of soil is very expensive; and writers who advise the addition of rich loam seem not to be aware of the difficulty of procuring it, or the expense and labor attending the same. For the complete garden of the wealthy, this may and should be done; but the mass of cultivators need not fear of obtaining good results without it. Deep and thorough trenching in the autumn, if possible, and the application of very old decayed manure or leaf-mould, will give the amateur a well-prepared and suitable soil. If the situation of the garden is low or damp, first of all it should be well drained; for, in addition to the injury from excessive moisture, such soils are cold, and the young plants are injured by early frosts, when they would escape damage in one of the opposite character. Neither should the situation be too dry, as, in this case, the plants would suffer in summer, and present a meagre in place of a vigorous bloom. Where the soil is too light, a thin layer of clay, if to be had, spread over the surface in the autumn, and dug in, after

